



अभिव्यक्ति

(संयुक्तांक : 2017-2020)



“उड़ चल हारिल लिए हाथ में यही अकेला ओछा तिनका,
उषा जाग उठी प्राची में, कैसी वाट भरोसा किनका !
शक्ति रहे तेरे हाथों में, छूट न जाए यह चाह सृजन की,
शक्ति रहे तेरे हाथों में, रुक न जाए यह गति जीवन की ॥”

राजकीय स्नातकोत्तर महाविद्यालय नई टिहरी
टिहरी गढ़वाल (उत्तराखण्ड)

अखबारों की कतरनों में महाविद्यालय की गतिविधियाँ

भाषण में रेनु प्रथम, मनीषा द्वितीय और धीरज तृतीय रहे

आई टीजी | इकाई सहायक

प्रतियोगिता

राज्य स्तरीय प्रतियोगिता में प्रतिभाग करने के लिए छात्रों को चुना गया।

• राज्य स्तरीय प्रतियोगिता में प्रतिभाग करने के लिए छात्रों को चुना गया।

• और प्रथम की अवधि पर जीतने में सक्षम होना आवश्यक है।

प्रतियोगिता में भाग लेने वाले छात्रों को प्रथम, द्वितीय और तृतीय स्थान पर जीतने में सक्षम होना आवश्यक है।

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गलत हरकत का डटकर काँ मुकाबला

टीजी कॉलेज में आयोजित स्वागत कार्यक्रम में सौतेले एकाग्रता के साथ प्रतिभाग करने वाले छात्रों को चुना गया।



प्रतियोगिता में भाग लेने वाले छात्रों को प्रथम, द्वितीय और तृतीय स्थान पर जीतने में सक्षम होना आवश्यक है।

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देश भक्ति और राष्ट्र निर्माण विषय पर भाषण प्रतियोगिता का आयोजन

आई टीजी एसएनबी। राजकीय इन्सट्र्यूट महाविद्यालय में टिहरी में राष्ट्रीय सेवा योजना एवं नेहरू युवा केन्द्र के सहयोग से देश भक्ति और राष्ट्र निर्माण विषय पर एक प्रभावी प्रतियोगिता का आयोजन किया गया जिसमें विभिन्न प्रतियोगियों को प्रथम स्थान प्राप्त हुआ।

नेहरू युवा केन्द्र में टिहरी व महाविद्यालय के राष्ट्रीय सेवा योजना विभाग के द्वारा एक प्रभावी प्रतियोगिता का आयोजन किया गया। इस प्रतियोगिता में प्रथम स्थान पर देश भक्ति विषय पर रहे धीरज कौशल को एक प्रथम पुरस्कार से पुरस्कृत किया गया। डा. मुरगद सिंह युवा केन्द्र के अध्यक्ष ने सरदार जलन्धर भर्मा को प्रथम व उनके संगठन को प्रथम स्थान पर प्रथम पुरस्कार से पुरस्कृत किया गया।

अमर उजाला

मानसी व प्रभात चुने गए कैप्टन एंबेसडर

आई टीजी। लोकतंत्र की मजबूत बनाने के उद्देश्य से बुधवार को टीजी कॉलेज में आयोजित छात्र-छात्राओं को बैठक में निर्वाचन कार्यक्रम का आयोजन किया गया। निर्वाचन कार्यक्रम में मानसी व प्रभात चुने गए।

अमर उजाला

एक दिन का दिन

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अमर उजाला

स्वयंसेवियों ने बताया स्वच्छता और मतदान का महत्व

नर्सिंग महिला विद्यालय इंटर कॉलेज भागीरथीपुरम की छात्राओं ने निकाली जागरूकता रैली



आई टीजी। स्वच्छता और मतदान का महत्व के बारे में छात्रों को प्रथम, द्वितीय और तृतीय स्थान पर जीतने में सक्षम होना आवश्यक है।

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(संयुक्तांक : 2017-2020)



राजकीय स्नातकोत्तर महाविद्यालय नई टिहरी

टिहरी गढ़वाल (उत्तराखण्ड)

“ अभिव्यक्ति ”

संयुक्तांक : 2017-2020

संरक्षक :

डॉ० रेणु नेगी (प्राचार्य)

संपादक मंडल:

डॉ० इंदिरा जुगरान (एस० प्रो० संस्कृत)
डॉ० संजीव सिंह नेगी (एस० प्रो० हिन्दी)
डॉ० प्रीतम सिंह (एस० प्रो० अंग्रेजी)

छात्र संपादक:

श्री राजकुमार (बी०ए० षष्ठम सेमेस्टर)
कु० हेम्वी बिष्ट (बी०ए० षष्ठम सेमेस्टर)

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प्रकाशक

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डॉ० धन सिंह रावत

राज्य मंत्री (स्वतंत्र प्रभार)
उच्च शिक्षा, सहकारिता, प्रोटोकॉल,
दुग्ध विकास



विधान सभा भवन

देहरादून

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संदेश



मुझे यह जानकर अत्यन्त प्रसन्नता हो रही है कि राजकीय स्नातकोत्तर नई टिहरी (टिहरी गढ़वाल) द्वारा महाविद्यालय की वार्षिक पत्रिका "अभिव्यक्ति" के संयुक्तांक का प्रकाशन किया जा रहा है।

मुझे विश्वास है कि महाविद्यालय की पत्रिका 'अभिव्यक्ति' में ऐसी रचनाएँ प्रकाशित होंगी जो कि विद्यार्थियों के व्यक्तित्व निर्माण में विशेष सहायक होंगी। उनमें एक स्वस्थ नागरिकताबोध की भावना एवं चेतना विकसित होगी। आज का युग वैज्ञानिक युग है, आज युवाओं में अपने इतिहासबोध के साथ ही समाज, मनोविज्ञान के संदर्भ में तार्किक होने की परम आवश्यकता है। विद्यार्थियों में शैक्षणिक प्रगति के साथ ही समाज एवं राष्ट्र के प्रति सकारात्मक अभिरूचि जगे ऐसी मेरी कामना है। पत्रिका में ज्ञानवर्धक, सार-गर्भित तथा रचनात्मक सामग्री को प्राथमिकता दी जाए।

अंत में, मैं पत्रिका 'अभिव्यक्ति' के संयुक्तांक के सफल प्रकाशन एवं विद्यार्थियों के उत्तरोत्तर उज्ज्वल भविष्य की कामना करता हूँ।

आपका,

(डॉ० धन सिंह रावत)

उच्च शिक्षा निदेशालय, उत्तराखण्ड हल्द्वानी - 263139 (नैनीताल)

Mail : Highereducation.director@gmail.com

डा० कुमकुम रीतेला
निदेशक (उच्च शिक्षा)

अर्द्धशासकीय पत्रांक : 4991 / 20-21
दिनांक : 12 अक्टूबर 2020

संदेश

महोदय,

यह जानकर अत्यंत प्रसन्नता हुई कि राजकीय स्नातकोत्तर महाविद्यालय नई टिहरी (टिहरी गढ़वाल, उत्तराखण्ड) महाविद्यालय की वार्षिक पत्रिका "अभिव्यक्ति" का संयुक्तांक प्रकाशित करने जा रहा है।

महाविद्यालय पत्रिका महाविद्यालय की शैक्षणिक, अकादमिक एवं सांस्कृतिक गतिविधियों एवं उपलब्धियों का दर्पण मात्र ही नहीं होती, महाविद्यालय के छात्र-छात्राओं की बौद्धिक, वैचारिक एवं रचनात्मक प्रतिभा की अभिव्यक्ति का सशक्त माध्यम भी होती है।

मैं आशा करती हूँ कि पत्रिका में प्रकाशित रचनायें ज्ञानवर्धक एवं सारगर्भित होंगी और छात्र-छात्राओं का उचित मार्गदर्शन करने एवं उनके विचारों में रचनात्मक परिवर्तन लाने में सक्षम होंगी।

मैं पत्रिका के सफल प्रकाशन हेतु महाविद्यालय परिवार को हार्दिक बधाई एवं शुभकामनाएं प्रेषित करती हूँ।

मंगलकामनाओं सहित

(डा० कुमकुम रीतेला)

प्रतिष्ठा में,

प्राचार्य,

राजकीय स्नातकोत्तर महाविद्यालय,

नई टिहरी, (टिहरी गढ़वाल) उत्तराखण्ड।



डॉ. धन सिंह नेगी
(M.Sc. Physics)

विधायक टिहरी विधानसभा

सदस्य: सार्वजनिक उपक्रम एवं निगम समिति

सदस्य: सूचना प्रायोगिकी सम्बन्धी समिति

सदस्य: दून विश्वविद्यालय सभा समिति

सदस्य: वाइल्ड लाइफ बोर्ड उत्तराखण्ड

पत्रांक: 1684/VIP/सा./2020



घर कावसर : ए-35, दक्षिण हॉस्टल
(विधानसभा) : रेसकोर्स, देहरादून
स्वामी विकास : ग्राम-पालकोट, पी०-अजनीरोग,
टिहरी गढ़वाल-249121
विवास मुख्यालय : सी-4/1, टाईप-11 गोलघर
नई टिहरी (टिहरी गढ़वाल)
G-mail : dsnegi.rti@gmail.com
Mob. : 7579099063, 9412312386

दिनांक: 20/10/2020

शुभकामना संदेश

मुझे यह जानकर अत्यन्त हर्ष हो रहा है कि राजकीय स्नातकोत्तर नई टिहरी, टिहरी गढ़वाल अपनी वार्षिक पत्रिका "अभिव्यक्ति" का प्रकाशन करने जा रहा है। महाविद्यालय की वार्षिक पत्रिका छात्र-छात्राओं के लिए उत्साहवर्धन का कार्य करें तथा समाज के योगदान में महाविद्यालय के यश व कीर्ति को जन-जन तक पहुंचाने में सार्थक सिद्ध हो ऐसी मेरी कामना है।

यह पत्रिका महाविद्यालय में शैक्षिक वातावरण को कारगर बनाने प्राध्यापक, अभिभावकों व छात्रों के बीच समन्वय के साथ-साथ अपने संकायों के अर्धन विभिन्न शोध कार्यों को भी आगे बढ़ाने का कार्य करेगी ऐसी अपेक्षा के साथ मैं महाविद्यालय परिवार के समस्त प्राध्यापक, प्रशिक्षणरतु छात्र-छात्राओं एवं समस्त स्टाफ को अपनी मंगलमय कामनायें प्रेषित करता हूँ।

मैं पत्रिका के सफल प्रकाशन के लिए महाविद्यालय के उत्तरोत्तर प्रगति की असीम अपेक्षाओं के साथ अपनी शुभकामनायें ज्ञान दायनी माँ शारदे को समर्पित करता हूँ।

(डा० धन सिंह नेगी)

प्रतिष्ठा में,
प्राचार्य,
रा०पी०जी० कॉलेज,
नई टिहरी, जिला टिहरी गढ़वाल।



श्रीमती सीमा कृपाली

अध्यक्षा,
नगर पालिका परिषद,
नई टिहरी, टि०ग०।

दिनांक : 08 अक्टूबर 2020

संदेश



मुझे यह जानकर अत्यधिक प्रसन्नता हो रही है कि राजकीय स्नातकोत्तर नई टिहरी, टिहरी गढ़वाल द्वारा वार्षिक पत्रिका "अभिव्यक्ति" के संयुक्तांक का प्रकाशन किया जा रहा है।

मुझे विश्वास है कि पत्रिका का यह अंक छात्र-छात्राओं में छिपी मौलिक प्रतिभा को उद्घाटित करने एवं साहित्यिक अभिरुचियों पर विचार एवं चिंतन के लिए प्रेरित करेगा।

पत्रिका के सफल प्रकाशन हेतु महाविद्यालय की प्राचार्य एवं सम्पादक मण्डल के प्रति आभार एवं मंगल कामनाएँ प्रेषित करती हूँ।

सरस्नेह

सीमा कृपाली,
अध्यक्षा,
नगर पालिका परिषद,
नई टिहरी, टि०ग०।

प्राचार्या की कलम से

महाविद्यालय की वार्षिक पत्रिका 'अभिव्यक्ति' के संयुक्तांक (2020-2021) को आप सबके सम्मुख प्रस्तुत करते हुए अपार हर्ष के साथ संतुष्टि का भी अनुभव हो रहा है। इस अवसर पर मैं पत्रिका के संपादक मंडल एवं उन सभी शिक्षकों एवं विद्यार्थियों को हार्दिक बधाई देती हूँ, जिन्होंने पत्रिका के लिए अपने लेख, कविताएँ, कहानियाँ आदि दी हैं।

हमारा लक्ष्य महाविद्यालय में विद्यार्थी को केवल कक्षा-कक्षा एवं प्रयोगशालाओं में अध्ययन-अध्यापन कराना ही नहीं है अपितु महाविद्यालय में संचालित पाठ्येतर क्रिया कलाओं से विद्यार्थियों को जोड़कर उनके व्यक्तित्व का सर्वांगीण विकास करवाना भी है। इसी उद्देश्य की पूर्ति हेतु छात्र-छात्राओं के रचनात्मक विकास एवं सृजनात्मकता को दिशा देने में महाविद्यालय पत्रिका का योगदान महत्वपूर्ण साबित होगा। पत्रिका सृजनात्मक प्रतिभा को प्रेरित और व्यक्त करने का अवसर देने के साथ छात्र-छात्राओं में आत्मविश्वास और सम्मान की राह भी प्रदत्त कराती है।



वस्तुतः शिक्षित व्यक्ति वही है जो अपने भावों और विचारों को ठीक-ठीक अभिव्यक्त कर सकें। आज के इस साइबर संसार में जहाँ युवा ट्विटर, फेसबुक, व्हाट्सएप, इंस्टाग्राम आदि सोशल मीडिया के माध्यम से एक आभासी (वर्चुअल) दुनिया में विवरण करने के लिए अभिशप्त हैं, वहीं वह रेडिमेंड संदेशों को कट-पेस्ट कर किसी और के सेकिंड हैंड भावों और विचारों को अपना बना कर प्रेषित कर रहा है। ऐसे में 'अभिव्यक्ति' उन्हें अपने मौलिक भावों और विचारों को व्यक्त करने का माध्यम प्रदान कर उन्हें सच्चे अर्थों में शिक्षित बनने का अवसर प्रदान करती है। हमारी सोच है कि हम लोकतांत्रिक तरीकों से विद्यार्थियों को अपने को अभिव्यक्त करने का अवसर दें।

दरवाजा खुला हो
तो जरूरी नहीं
अधड़ तूफान ही
घुस आए घर में
खूबसूरत पंख भी तो
आ सकता है, उड़कर।

आज का युग डिजिटल डाटा और सूचनाओं का युग है। चारों ओर से मूसलाधार बरसती सूचनाओं के विस्फोट और शोर के मध्य सूचनाओं के ग्रहण और त्याग का विवेक पैदा कर सूचनाओं को ज्ञान और ज्ञान को बुद्धि-विवेक में बदलना आज के शिक्षक की सबसे बड़ी चुनौती है। हमें विद्यार्थी को एक सोचने समझने और विचारशील युवा के रूप में बदलना है। महाविद्यालय पत्रिका इसी दिशा में एक छोटा लेकिन महत्वपूर्ण कदम है। इस कदम के लिए पुनः सभी को साधुवाद और शुभकामनाएँ।

(डा० रेणु नेगी)

प्राचार्या

राजकीय स्नातकोत्तर महाविद्यालय,

नई दिल्ली, टि०ग०।

सम्पादकीय.....

सम्पादकीय.....

वैश्विक क्षमियों के अनुसार शिक्षा का उद्देश्य है मानव का सर्वांगीण विकास अर्थात् मानव जीवन का जो उद्देश्य है, उस उद्देश्य तक पहुँचना ही शिक्षा का उद्देश्य होना चाहिये। शिक्षा ऐसी हो कि विद्यार्थी अपनी शारीरिक, मानसिक, भावनात्मक, आध्यात्मिक, सामाजिक एवं नैतिक क्षमियों का विकास करके मूढता जीवन में किसी व्यवसाय द्वारा सम्भार्य और निष्ठा से जीवन निर्वाह का राष्ट्र की सेवा कर सके। संक्षेप में हर बाल में हम पूर्ण हो, फिरते में अग्रुरे न रहे यह वैश्विक क्षमियों की शिक्षा का उद्देश्य है।

शिक्षा समाज और राष्ट्र की रीढ़ होती है। ऐसी शिक्षा जो मानवीय आवश्यकताओं से जुड़ी हो और रोजगारपरक होने के साथ ही खानि और मानव विकास के प्रतिमानों के अनुकूल भी हो। संस्कारनिष्ठ एवं गुणवत्ता युक्त शिक्षा ही सामाजिक समरसता, राष्ट्रीय एकता और विश्वसन्मूल को बढ़ा सकती है। शिक्षा अति आवश्यक है क्योंकि व्यक्ति अपने 'ज्ञान से महान होता है, जन्म से नहीं'।

महाविद्यालय की पत्रिका 'अभिव्यक्ति' अपने सुविध पाठक वृन्द तथा साहित्यिक विद्वान समाज के सम्पुष प्रस्तुत करते हुये अपार हर्ष का अनुभव हो रहा है।

विज्ञा की शिक्षण संस्था की पत्रिका से ही उस संस्था की सांस्कृतिक और शैक्षणिक गतिविधियों के साथ-साथ साहित्यिक रुचि का भी पता चलता है। पत्रिका के माध्यम से ही छात्र/छात्राओं में रुचि शक्ति और नवमूजन की कला को बढ़ाया मिलता है।

मनुष्य में वैचारिक अभिव्यक्ति की ऐसी अद्भुत शक्ति होती है जिससे वह अपनी बात, अपने विश्वर दूसरों तक प्रेषित करने में सक्षम होता है। यह विचार कभी बाणी के माध्यम से तो कभी लेखन के माध्यम से प्रेषित कर स्वयं का उत्कृष्ट स्वभाव दूसरों के सम्पुष रखता है। महाविद्यालय के छात्र/छात्राओं को दूर और लाने का विनम्र प्रयास 'अभिव्यक्ति' पत्रिका के माध्यम से किया गया है। महाविद्यालय की वार्षिक पत्रिका 'अभिव्यक्ति' छात्र/छात्राओं की सरल अभिव्यक्ति का माध्यम है जिसमें छात्र/छात्राओं की अनगड़ कृतियों को एक अवसर उपलब्ध करवाया जाता है।

'अभिव्यक्ति' पत्रिका का यह संस्करण प्रस्तुत है। अपने सम्पादक का फलतः सुविध और सुविधित विचारों के निराले, सज, कल्पने, लेखन व नवविचार है जिसका आभार संस्कृत, विज्ञान, अर्थशास्त्र का माध्यम से हमारे सहृदय वृन्द को मिलेगा।

महाविद्यालय पत्रिका 'अभिव्यक्ति' इस बात का प्रमाण है कि यह विद्यार्थी के सर्वांगीण विकास के लिये निरन्तर का प्रयास प्रयत्न किया जा रहा है।

यह सम्पूर्ण प्रयास हमारे महाविद्यालय के प्रख्यात विद्वान का है जिन्हें मार्गदर्शन में सर्वसद संचार हो सका है। सम्पादक मण्डल इनके जी कृतज्ञता ज्ञापित करते हुये शक्यतया है। मैं हृदय से सम्पादक मण्डल की आभारी हूँ जिन्होंने लेखन एवं मार्गदर्शन से का कार्य अपने मुक्त तक पहुँच पाया। साथ ही आज्ञा एवं अपेक्षा है कि ऐसा सौभाग्य व सहयोग सदैव बना रहेगा।

पत्रिका के सम्पादन एवं प्रकाशन में महाविद्यालय के शिक्षक व शिक्षणपर कर्मचारियों एवं प्रत्यक्ष तथा अप्रत्यक्ष रूप से सहयोग प्रदान करने वाले महासुभाषों का हृदय से आभार प्रकट करती हूँ। मैं अपने साहित्य सेवा छात्र/छात्राओं को जिन्होंने अपने स्वभावे पत्रिका के लिये दी हैं उन्हें धन्यवाद देती हूँ। मैं अपने छात्र/छात्राओं से आज्ञा करती हूँ कि वे भविष्य में भी अधिकाधिक उत्कृष्ट लेखन अति ज्ञान विज्ञान के आधार पर अपनी कला का प्रदर्शन करने में सक्षम होंगे। वर्तनी सुदिकरण के अत्यधिक प्रयासों के उपरान्त भी भी टंकणगत अशुद्धियाँ रह गयी हों तो सम्पादक मण्डल का अर्पण है। पाठक विद्वानों से क्षमा याचना करते हुये निवेदन है कि पत्रिका में कहीं कहीं भी कमियाँ रह गयी हों, अपने महत्वपूर्ण सुझावों से सम्पादक मण्डल को अवगत कराने की कृपा करेंगे।

अन्त में पुनः छात्र/छात्राओं के जादुमय 'दिलरेय ज्ञान' के इस अर्पण से "धरैवेति धरैवेति" कहकर अपनी लेखनी को दायम देती हूँ।

डॉ० इन्दिरा कुमारी
प्रधान सम्पादक

महाविद्यालय पत्रिका 'अभिव्यक्ति'

महाविद्यालय शिक्षक परिवार (2020-21)



- कुशी वाकिलेठुल (कार्य से) : संतोष सिंह नेरी, कुलदीप सिंह, डी.पी.एस. भंडारी, अरुण पी. मुखर्जी, रमू नेरी (अध्यक्ष), इंदिरा त्रिपाठी, आर्जुन एस. मंगलई, दीपेंद्र तंजवार, कविता कटवाल
- राजेंद्र (प्रथम पंक्ति) : धरणी ज्ञानमठार, ममला कान, मैत्री कर्मलियाल, सोहन सिंह, प्रतिलिनी तिवारी, पुष्पा, आली खंदूरे, पुष्पा प्रसाद, साधुदेवी कांडेली, श्री.डी.एस. नेरी, दिनेश शर्मा, विजय प्रकाश सोलंकार, पी.एम.एस. वैकुण्ठ, मणिमोल शर्मा, हर्ष नेरी, सुदीप शर्मा, अरुण शंभर, रमणी मुखर्जी, कविता, सदा प्रसाद।
- राजेंद्र (द्वितीय पंक्ति) : अरविंद तिवारी, अरुण बहुगुणा, प्रो.एस. सिंह, जयंत शर्मा, अरविंद वैकुण्ठ, आर.डी. शर्मा, केशव नीरवार, सुनील मुखर्जी, सुभाष शर्मा, श्री.डी.एस. नेरी, अरविंद तिवारी।

महाविद्यालय शिक्षणोत्तर कर्मचारी (2020-21)



पंचमं स्तुतं (कार्ये सं)

सुबोध नन्दी, सुवीरसिंह, सयुधाना (२०२०), विजयसिंह पवार (बहु-प्रशासनिक अधिकारी), इंदु रेणु नगी (प्राचार्य), रमेश (कनिष्ठ-कार्यवीर्य महापुरुष),
 सरोज कर्भार (स० पुस्तकालयपालक), गीतम गैरी (पुस्तकालय), अरुण भट्ट

षष्ठं स्तुतं (कार्ये सं)

प्रधान पंवार, सुबोध पटेल, सोहन सिंह, सखाराम, कल्पवीर सिंह चौहान, रविशंकर सिंह, राजेश जाधवी, अशोक कुमर, प्रवीण काठियाल, गीतम पारगा, दामोदर,
 अशोकसिंह, सुधामन्या ।

सप्तमं स्तुतं

सखाराम

विरासत

महाविद्यालय पत्रिका के इस अंक से हम एक नया स्तम्भ कर रहे हैं जिसका नाम है विरासत

। इस स्तम्भ का उद्देश्य पहाड़ के इतिहास, संस्कृति, धर्म दर्शन व समाज से जुड़े

अनछुए-विस्मृत पृष्ठों को अपने छात्र-छात्राओं के सम्मुख लाना है। ताकि छात्र अपने पहाड़

के अप्रतिम व्यक्तित्वों व उनके संघर्ष और विचारों से अवगत हो सकें।

इस अंक में हम अमर शहीद श्रीदेव सुमन का एक लेख 'आखिर प्रजा क्या चाहती है' जो कि

कर्मवीर में 1940 में छपा था को सामने ला रहे हैं। आशा है विद्यार्थी इसे पढ़कर श्रीदेव सुमन

के व्यक्तित्व, विचारों व उनकी दृष्टि में स्वराज्य का क्या अर्थ था; इससे परिचित हो पाएंगे।

..... संपादक मंडल

महाविद्यालय की शिक्षणोत्तर गतिविधियाँ छायाचित्रों में



महाविद्यालय में आयोजित 'स्त्री सशक्तिकरण व आत्मरक्षा' विषय पर आयोजित गोष्ठी में पूज. वि. दिवसें डा. दीनेश्वर शिवा शर्मा।



रा.से. योजना स्वयं सेवियों द्वारा स्वच्छता कार्यक्रम।



स्वच्छता सप्ताह के दौरान रा.से.जी. के स्वयंसेवी समूहों का एक प्रस्तुत करने हुए।



महिला सशक्तिकरण कार्यक्रम (रा.से.यो.)



रा.से.यो. के स्वयंसेवियों द्वारा प्रस्तुत बुकलॉन्च नाटक



रा.से.यो. के स्वयंसेवियों द्वारा साहसिक शिविर में प्रतिभाग।



स्वच्छता एवं वृक्षारोपण कार्यक्रम।



रा.से. योजना के स्वयं सेवकों द्वारा जल विद्युत बाजपेठी परियोजना पूर्व-खोल संस्कार मजाली (हि.प्र.) में प्रतिभाग



महाविद्यालय में अपराजिता 'एबी सशक्तिकरण' के कार्यक्रम में पु.पी. विहरी डा. योगेश्वर सिंह रावत जी छात्र-छात्राओं को संबोधित करते हुए।



गुरुकुल मादक की प्रस्तुति



महाविद्यालय के रेडरिबन क्लब द्वारा राष्ट्रीय युवक दिवस पर आयोजित एवं योग करली महाविद्यालय की छात्रों।



Cultural Sports Samvidhan Divas



मलबारा आभारकता कार्यक्रम हेतु छात्राओं के मध्य गेरुंदी प्रतियोगिता।



अन्तर महाविद्यालयी बेसबॉल प्रतियोगिता में विजेता महाविद्यालय की टीम।

Cultural Sports Samvidhan Divas



कोविड-19 से निवारण व जागरूकता सप्ताह।



अन्तर-महाविद्यालयी सांस्कृतिक प्रतियोगिता में
महाविद्यालय की टीम



मेहंदी प्रतियोगिता (मेस तोट मेस अधिकार)

Cultural Sports Samvidhan Divas



महाविद्यालय छात्रसंघ



शुभम नेगी
(अध्यक्ष 2016-17)



मौ0 फरहान
(वि0वि0 प्रतिनिधि 2019-20)



आशुतोष सोमवाल
(सचिव 2018-19)



मानसी नेगी
(उपाध्यक्ष 2017-18)



प्रदीप रावत
(वि0वि0 प्रतिनिधि 2017-18)



जयदीप रावत
(अध्यक्ष 2018-19)



सह-सचिव
(2019-20)



नेहा
(महारासचिव 2019-20)



हितेश चौहान
(वि0वि0 प्रतिनिधि 2016-17)



गौरव रावत
(अध्यक्ष 2017-18)



अनस अहमद
(छात्रसंघ उपाध्यक्ष 2016-17)



शंकर नेगी
(छात्रसंघ अध्यक्ष 2019-20)



अखबारों की कतरनों में महाविद्यालय की गतिविधियाँ

पीजी कॉलेज में मनाया गया राष्ट्रीय एकता दिवस

21 Oct 2019

एकता दिवस (National Unity Day) को पीजी कॉलेज में राष्ट्रीय एकता दिवस के रूप में मनाया गया। कार्यक्रम में छात्रों ने राष्ट्रीय ध्वज तिरंगा फहराया और 'एकता में ही शक्ति है' का नारा लगाया। कार्यक्रम में डॉ. राजेश कुमार ने भाषण दिया और छात्रों को एकता के महत्व के बारे में बताया।



आमर उजाला दिहरी-न्यूज

छात्र-छात्राओं के बीच हुई नई कृति

आमर उजाला दिहरी-न्यूज के छात्र-छात्राओं के बीच नई कृति का शुभारंभ हुआ। छात्रों ने अपने-अपने लेख और पोस्टर प्रतियोगिता में भाग लिया। कार्यक्रम में डॉ. राजेश कुमार ने भाषण दिया और छात्रों को प्रोत्साहित किया।

राष्ट्रीय सहारा

राज्य काटने की दिशा में

गोंधी जयंती पर ऑनलाइन प्रश्नोत्तरी का आयोजन

हिन्दुस्तान

स्वर्ण जयंती निबंध स्पर्धा

नई टिहरी। पीजी कॉलेज नई टिहरी में राष्ट्रीय सेवा योजना की स्वर्ण जयंती पर एनएसएस स्वयं सेवियों के लिए निबंध एवं पोस्टर प्रतियोगिता

एकता दिवस (National Unity Day) को पीजी कॉलेज में राष्ट्रीय एकता दिवस के रूप में मनाया गया। कार्यक्रम में छात्रों ने राष्ट्रीय ध्वज तिरंगा फहराया और 'एकता में ही शक्ति है' का नारा लगाया। कार्यक्रम में डॉ. राजेश कुमार ने भाषण दिया और छात्रों को एकता के महत्व के बारे में बताया।

आमर उजाला

स्वस्थ रहने के लिए शिक्षकों और छात्रों ने लगाई दौड़

नई टिहरी। राष्ट्रीय एकता दिवस के अवसर पर आमर उजाला दिहरी-न्यूज के छात्र-छात्राओं के बीच नई कृति का शुभारंभ हुआ। छात्रों ने अपने-अपने लेख और पोस्टर प्रतियोगिता में भाग लिया। कार्यक्रम में डॉ. राजेश कुमार ने भाषण दिया और छात्रों को प्रोत्साहित किया।

आमर उजाला

कविता रचना में सोनाली और गीत में रानी प्रथम

नई टिहरी/लखनऊ। एकता दिवस के अवसर पर आमर उजाला दिहरी-न्यूज के छात्र-छात्राओं के बीच नई कृति का शुभारंभ हुआ। छात्रों ने अपने-अपने लेख और पोस्टर प्रतियोगिता में भाग लिया। कार्यक्रम में डॉ. राजेश कुमार ने भाषण दिया और छात्रों को प्रोत्साहित किया।

एनएसएस परिसर वाटसाहीकॉल में डी. सी. श्रीवास्तव, डॉ. के.सी. पेटवाल ने कहा कि राष्ट्र निर्माण में स्वयंसेवकों को निर्यात भाव से अपना योगदान देना चाहिए। फूल भिंड बिन्दू महाविद्यालय लखनऊ में कविता रचना, कविता पाठ, आलेख लेखन, पोस्टर प्रतियोगिता, लोकगीत, लोकनृत्य प्रतियोगिता हुई। कविता रचना में सोनाली प्रथम, भवानी द्वितीय और गीत में रानी प्रथम और कविता दूसरे स्थान पर रही। लोकनृत्य में अर्जुनी प्रथम, विजयली द्वितीय रही।

“शिक्षा स्वतंत्रता के स्वर्ण द्वार खोलने की कुंजी है”



राजकीय स्नातकोत्तर महाविद्यालय नई टिहरी
टिहरी गढ़वाल (उत्तराखण्ड)

सुअक : नया इन्टरफ़ेस, नई टिहरी फोन नं० - 9412076183



Government Post Graduate College, New Tehri (Uttarakhand)
राजकीय स्नातकोत्तर महाविद्यालय, नई टिहरी, उत्तराखण्ड

Phone Number: 01376234964; Fax: 01376 234964; Mobile: 9412077006
 E-mail (office): gpgcollegentt@gmail.com ; Email (NAAC): gpgntnaac@gmail.com

1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Sl. No.	Subject	Classes	Courses	Aspects Covered	ENCLOSURE
1	Botony	UG	Ecology and Remote Sensing	Environment Issues	'SYLLABUS ENCLOSED'
		UG	Economic Botony and Biodiversity	Environment Issues	
		PG	Economic Botony	Environment/ Women/Human Ethics	
		PG	Plant Biotechnology	Scientific Ethic	
		PG	Environment Management	Environment Issues	
		PG	Ethnobotony	Environment/ Women/Human Ethics	
		PG	Forest Ecology	Environment Issues	
2	Zoology	UG	Environmental Science and Basic concepts of Ecology	Environment Issues	
		PG	Ecology and Wildlife	Environment/ Women/Human Ethics	
3	Physics	PG	Environment Physics	Environment Issues	
4	Anthropology	UG	Social and cultural Anthropology	Environment/ Women/Human Ethics	
		UG	Tribal and Peasant Culture	Environment/ Women/Human Ethics	
		PG	Social and cultural Anthropology	Women/Human Ethics	
		PG	Ecological Anthropology	Environment Issues	
5	Statistics	UG	Population Studies	Environment/ Women	
		PG	Applied Statistics	Environment/ Women	
6	Geography	UG	Environment Geography	Environment Issues	
		PG	Environment Geography	Environment Issues	
7	English	UG/PG	Literature and Gender	Women/Human Ethics	
8	Economics	UG	Structure and Problems of Indian Economy	Environment/ Women/Human Ethics	
		PG	GenderEconomics	Women/Human Ethics	
		PG	Economics of Growth and Development	Environment/ Women/Human Ethics	
		PG	Economics of Human Development	Environment/ Women/Human Ethics	
		UG	Economics of Development and Planning	Women/Human Ethics	
9	History	PG	Ecology and Environment	Environment/ Women/Human Ethics	
			Women in Indian History	Women/Human Ethics	
10	Home Science	UG	Women Empowerment	Women/Human Ethics	
		PG	Guidance and Counselling	Women/Human Ethics	
11	Hindi		Child Welfare in India	Women/Human Ethics	
		UG	Prachin evan Bhaktikalin Kavya	Environment/ Women/Human Ethics	
			Gadya evan Natya Sahitya	Environment/ Women/Human Ethics	
		PG	Upaniyash Evam Katha Sathiya	Environment/ Women/Human Ethics	
		PG	Adhunik Kavya	Environment/ Women/Human Ethics	
12	Sociology	PG	Garhwali Lok Sahitya	Environment/ Women/Human Ethics	
		UG	Gender Sensitization	Women/Human Ethics	
		UG	Sociology of Environment	Environment Issues	
13	Commerce	PG	Women and Society	Environment/ Women/Human Ethics	
		UG	Auditing and Corporate Governance	Women/Human Ethics	
		UG	Business Environment	Environment/ Women/Human Ethics	
		UG	Business Laws	Environment/ Women/Human Ethics	
		UG	Industrial Law	Environment/ Women/Human Ethics	
		UG	Enterepreneurship Development	Environment/ Women/Human Ethics	
		PG	Business Environment	Environment/ Women/Human Ethics	
14	Political Science	PG	Enterepreneurship Development	Environment/ Women/Human Ethics	
		PG	Politics of Environment and Development	Environment/ Women/Human Ethics	

SIGNATURE WITH SEAL
NAME OF THE HEAD OF INSTITUTION: PROF. D.P.S. BHANDARI

Sri Dev Suman Uttarakhand University Badshahithaul Tehri Garhwal
Syllabus of Botany Course for B.Sc. (6 Semesters)

B.Sc. Botany Syllabus

OBJECTIVE OF THE COURSE

To teach the fundamental concepts of Botany and their applications, the syllabus pertaining to B.Sc. (3 Year Degree Course) in the subject of Botany has been proposed as per provision of the UGC module and demand of the academic environment. The syllabus contents are duly arranged unit-wise and contents are included in such a manner so that due importance is given to requisite intellectual and laboratory skills.

B.Sc. Semester I

Paper No.	Title	Paper Code	Max. Marks (100)	
			Ext.	Int.
I	Microbiology	BBO101	80	20
II	Fungi, Elementary Plant Pathology and Lichens	BBO102	80	20
	Lab Course I	BBO10P	40	10

B.Sc. Semester II

Paper No.	Title	Paper Code	Max. Marks (100)	
			Ext.	Int.
I	Algae and Bryophyta	BBO201	80	20
II	Pteridophyta, Gymnosperm and Elementary Palaeobotany	BBO202	80	20
	Lab Course II	BBO20P	40	10

B.Sc. Semester III

Paper No.	Title	Paper Code	Max. Marks (100)	
			Ext.	Int.
I	Taxonomy of Angiosperms	BBO301	80	20
II	Anatomy and Embryology	BBO302	80	20
	Lab Course III	BBO30P	40	10

B.Sc. Semester IV

Paper No.	Title	Paper Code	Max. Marks (100)	
			Ext.	Int.
I	Cytology and Genetics	BBO401	80	20
II	Plant Ecology	BBO402	80	20
	Lab Course IV	BBO40P	40	10


 (Signature)
 Date

B.Sc. Semester V

Paper No.	Title	Paper Code	Max. Marks (100)	
			Ext.	Int.
I	Molecular Biology and Biotechnology	BBO501	80	20
II	Plant Breeding and Biostatistics	BBO502	80	20
	Lab Course V	BBO50P	40	10

B.Sc. Semester VI

Paper No.	Title	Paper Code	Max. Marks (100)	
			Ext.	Int.
I	Plant Physiology, Elementary Morphogenesis and Biochemistry	BBO601	80	20
II V	Economic Botany and Biodiversity	BBO602	80	20
	Lab Course VI	BBO60P	40	10

Semester I (90 Lectures)

Paper I (BBO 101): Microbiology

UNIT-I

10 Lectures

1. History and scope of Microbiology.
2. A brief idea of microbial diversity and distribution, position of microorganisms in the living world
3. Classification of microorganisms.

UNIT-II

08 Lectures

1. Elementary principles and methods of isolation, purification and culture of microorganisms (bacteria and Fungi)
2. Role of microorganisms in biogeochemical cycles in nature.
3. Bacteria: Structure, reproduction, nutrition, plasmids, economic importance.

UNIT-III

08 Lectures

1. Virus: general characteristics, structure, replication, transmission.
2. A brief idea of bacteriophages, cyanophages

UNIT-IV

06 Lectures

1. Viroids and prions.
2. Mycoplasma: a general account.



Paper II (BBO 102): Fungi, Elementary Plant Pathology and Lichens

UNIT-I:

14 Lectures

1. Brief history and salient features of fungi
2. Outline of classification of Alexopoulos & Mims and salient features of important groups.
3. Habit, habitat, structure and methods of reproduction of fungi based on the following representatives. *Albugo*, *Mucor*, *Saccharomyces*, *Puccinia* and *Alternaria*.

UNIT-II:

16 Lectures

1. Lichens: Occurrence, General structure, types and physiology (symbiotic relationship) of Lichens.
2. Morphology and microscopic structure of crustose, fruticose and foliose lichens
3. Economic importance of Lichens in general.

UNIT-III:

12 Lectures

1. General symptoms of plant diseases.
2. General principles of infection and resistance.

UNIT-IV:

16 Lectures

1. General methods of chemical and biological control of the plant diseases.
2. The symptoms, morphology of the causal organism, disease cycle and control measures of the following disease: White rust of crucifers, Loose smut of wheat, Wart disease of potato, Red rot of sugarcane.

Lab Course (BBO 10P):

1. Study of various equipments, glasswares and accessories used in microbiological experiments.
2. Preparation of bacterial and fungal culture media.
3. Negative staining and Staining of bacteria with Gram stain.
4. A study of the following types: *Albugo*, *Mucor*, *Agaricus*, *Alternaria*, *Ustilago* and *Puccinia*
5. Study of morphology and structure of different types of lichens
6. Symptoms and morphology of diseases, as mentioned in theory syllabus.

Books recommended:

Gangulee, H.C. and Kar, A.K. 1992. College Botany, Vol II. Calcutta
Pandey, B.P. 1999. Simplified Course in Botany, B.Sc. I S. Chand & Co. Ltd. New Delhi
Singh, V., Pande, P.C. and Jain, D.K. 1998. A Text Book of Botany, Rastogi Publ, Meerut
Singh, R.S. 1992. Principles of Plant Pathology. Oxford and IBH Publ. Co., New Delhi.
Vashistha, B.R. 1998. A Textbook of Fungi. S. Chand & Co. New Delhi
Sharma, P.D.. Microbiology. Rastogi Publications, Meerut, India



Handwritten signatures and a circular stamp are present at the bottom of the page. One signature is written in blue ink, and another is in black ink. A circular stamp is also visible, containing some illegible text.

- Dubey, R.C., & D.K. Maheshwari. A textbook of Microbiology, A.Chand & Company, New Delhi
- Clifton, A. 1958. Introduction to the Bacteria. McGraw-Hill book Co., New York.
- Mandahar, C.L. 1978. Introduction to Plant Viruses. Chand & Co. Ltd., Delhi.
- Dubey, R.C. & D.K. Maheshwari. Practical Microbiology. S.Chand, New Delhi
- Aneja, A.R. Experiments in Microbiology Plant Pathology and Biotechnology. New Age International Publishers
- Kaushik, P 2009. Introductory Microbiology. Emkay Publication, Delhi. 110051.

Semester II : 90 Lectures

PAPER I (BBO 201): Algae and Bryophytes

UNIT-I:

12 Lectures

1. General Characteristics of Algae
2. Classification of algae, basic outline of Fritsch's classification
3. Organization of thallus, pigmentation and mode of reproduction in Algae

UNIT-II:

12 Lectures

1. Occurrence, structure of thallus and mode of reproduction in the following genera: *Chlamydomonas*, *Cladophora*, *Vaucheria* and *Chara*
2. General account of the Bacillariophyceae

UNIT-III:

10 Lectures

1. Occurrence, structure and mode of reproduction of the *Polysiphonia*.
2. Cyanobacteria- A general account and nitrogen fixation by cyanobacteria
3. Economic importance of algae as food and fodder, in agriculture, industry and in public health

UNIT-IV:

12 Lectures

1. Outline and basic principles of classification of the Bryophytes
2. Comparative account of the gross morphology, vegetative and sexual reproduction, structure and evolution of the sporophytes of *Marchantia*, *Anthoceros* and *Funaria*.
3. Origin, habitat, distribution and economic importance of Bryophytes

PAPER II (BBO 202) : Pteridophyta, Gymnosperm and Elementary Palaeobotany

UNIT-I:

18 Lectures

1. General characters of the Pteridophytes and classification as proposed by Sporne.
2. A comparative study of *Rhynia*, *Selaginella*, *Equisetum* & *Marsilea* on the basis of following features:



Morphology and anatomy of the vegetative plant body and spore producing organ (strobilus, sporophyll, sporoangium and spores), sexual reproduction, male and female gametophytes, fertilization.

UNIT-II:

8 Lectures

1. A brief account of Telome theory, Stellar system and its evolution.
2. Heterospory and seed habit in Pteridophytes.

UNIT-III:

12 Lectures

1. Outlines of classifications as proposed by D.D. Pant and distinguishing features of Gymnosperms. Distribution of Gymnosperms in India.
2. Comparative account of the structure, life history and evolutionary trends and economic importance based on *Cycas* and *Pinus* and *Ephedra*.

UNIT-IV:

6 Lectures

1. Process of fossilization
2. Types of fossils
3. Living and pseudo-fossils.

Lab Course (BBO 20P)

Study of the following types by preparing temporary slides: *Nostoc*, *Chlamydomonas*, *Cladophora*, *Vaucheria*, *Chara*, *Sargassum* and *Polysiphonia*

Study of the external features and internal structures with the help of permanent and/or temporary preparation of scales, rhizoids, gemma cups, archegoniophores, antheridiophores and sporophytes of the following: *Riccia*, *Marchantia*, *Anthoceros* and *Funaria*.

Study of the external features and internal structures of rhizome, leaves, roots, and reproductive structure of *Seleginella*, *Equisetum* and *Marsilea* (Specimen and Permanent Slides only)

Study of the morphological features and anatomical structures of vegetative and reproductive parts of *Cycas*, *Pinus* (Specimen and Permanent Slides only).

Study of fossil specimens.

Books recommended:

Algae and Bryophyta

Khan, M. 1983. Fundamentals of Phycology. Bishen Singh Mahendra Pal Singh, Dehradun.
Parihar, N.S. 1976. The Biology and Morphology of Bryophytes. Central Book Depot, Allahabad.

Puri, P. 1980. Bryophytes. Atma Ram & Sons, Delhi.

Sharma, O.P. 1998. A Text Book of Bryophyta. Pragati Prakashan, Meerut.

Singh, V., Pandey, P.C. and Jain, D.K. 1996. A Textbook of Botany, Rastogi Publ, Meerut.

Vasishta, B.R. 2001. Text Book of Algae. S. Chand & Co. New Delhi.

Rashid, 1996. Pteridophyta

Parihar, N.S. 1996. Biology & Morphology of Pteridophytes. Central Book Depot, Allahabad.

Pandey, S.N. A Textbook of Pteridophyta.

Singh, V., Pandey, P.C. and Jain, D.K. 1996. A Textbook of Botany, Rastogi Publ, Meerut.

Pandey, B.P. 2001. Gymnosperms and Palaeobotany. S. Chand & Co. Ltd., New Delhi



Sharma, O.P. 1998. An Introduction to Gymnosperms, Pragati Prakashan, Meerut.
Vashistha, P.C. 2001. A Textbook of Pteridophyta. S. Chand & Co. Ltd., New Delhi
Vashistha, P.C. 2001. A Textbook of Gymnosperm. S. Chand & Co. Ltd., New Delhi

Semester III : 90 Lectures

Paper I(BBO 301) : Taxonomy of Angiosperms

UNIT-I:

14 Lectures

1. Origin of Angiosperms; Vavilov's concept, some examples of primitive angiosperms.
Angiosperm taxonomy- fundamental taxonomical characteristics.
2. Historical development in plant taxonomy in pre- Linnaeus and post Linnaeus periods.
3. Comparison and evolution of the systems of classification as proposed by Linnaeus, Bentham and Hooker and Hutchinson

UNIT-II:

12 Lectures

1. Nomenclature: International Code of Nomenclature for Algae, Fungi and Plants (ICN), scientific naming of plants, priority, types, validity, *nomina conservanda*
2. Collection and preservation techniques of specimens for herbarium and museum.
3. Botanical Gardens and Herbaria. A brief idea of Botanical Survey of India (BSI)

UNIT-III:

10 Lectures

1. Taxonomy, important distinguishing characters, classification and economic importance of the following families:
 - a. *A. Dicotyledonae*
Polypetalae: Ranunculaceae, Papaveraceae, Caryophyllaceae, Malvaceae, Rutaceae, Fabaceae, Rosaceae, Cucurbitaceae, Apiaceae.

UNIT-IV:

10 Lectures

1. *Gamopetalae*: Solanaceae, Apocynaceae, Asclepiadaceae, Acanthaceae, Lamiaceae
2. *Monochlamydae*: Euphorbiaceae, Moraceae
3. *Monocotyledonae*: Orchidaceae, Poaceae

Paper II(BBO 302) : Anatomy and Embryology

UNIT-I:

8 Lectures

1. The techniques for the study of plant anatomy
2. Meristems- Primary and Secondary meristems, characteristics and functions. Various types of permanent tissues
3. Anatomy of stem, root, leaf (Dicot & monocot)

UNIT-II:

12 Lectures

1. Secretory structures
2. Structure of xylem and phloem including cork cambium, its activity and products.
3. Origin, structure and function of vascular cambium, anomalous secondary growth with special reference to the following taxa: *Salvadora*, *Dracaena*, and *Tinospora* and



Velamen in Orchid and Ficus

UNIT-III:

12 Lectures

1. Structure of anther, microsporogenesis and development of male gametophytes in angiosperms
2. Structure of ovule, megasporogenesis and development of different types of female gametophytes.
3. Mode of different types of Pollination, double fertilization and triple fusion,

UNIT-IV:

12 Lectures

1. Types of endosperm and embryo development in dicots.
2. Polyembryony and apomixis
3. Seed germination and dormancy

Lab Course (BBO 30P)

Identification of locally available plants belonging to the families mentioned in the syllabus, their description in semi technical language

Collection of the plant specimens-herbarium and/or live specimen. Excursion should be organized by the department to acquaint the students with the local flora.

Demonstration of usual techniques of plant anatomy, section cutting, TS, LS of leaf, stem and root.

Normal and abnormal secondary growth in *Boerhavia*, *Salvadora*, *Dracaena*, *Ficus*, and *Tinospora*

T.S. of Anther

Study of various types of pollen grains, placentations, embryosacs, ovules and stages of embryo development using permanent preparations.

Demonstration of pollen germination experiment using hanging drop or other method.

Books recommended:

Agrawal, K.C. 1999. Biodiversity. Agrobotanica, Bikaner.

Gupta, R.K. 1989. Text Book of Systematic Botany, Atma Ram & Sons, New Delhi.

Pandey, B.P. 2001. a Text Book of Angiosperms. S. Chand & Co. Ltd., New Delhi.

Sexena, N.B. 1997. Plant Taxonomy, Pragati Prakashan, Meerut.

Singh, V. and Jain, D.K. 1998. Taxonomy of Angiosperms, Rastogi Publ., Meerut.

Tyagi, Y.D. & Ksheterpal, S. 1996. An Introduction to the Taxonomy of Angiosperms. Ramesh Book Depot, Jaipur.

Vasudeven, R. Taxonomy of Angiosperms

Bhojwani, S.S. and S.P. Bhatnagar. 1994. Embryology of Angiosperms

Maheshwari, P. An Introduction to Embryology of Angiosperms

Singh, S.P. A Textbook of Plant Anatomy

Tayal, M.S. 1996. Plant Anatomy. Rastogi Publ. Meerut.



Semester IV : 90 Lectures

Paper I (BBO 401) : Cytology and Genetics

UNIT-I

10 Lectures

1. Cell structure: Prokaryotic and eukaryotic cells; ultrastructure of eukaryotic cell,
2. Cell wall and plasma membrane (ultrastructure, chemical composition and models of plasma membrane)
3. Structure and Function of Nucleus: Ultrastructure, Nuclear membrane, Nucleolus

UNIT II

8 Lectures

1. Structure and Function of cell Organelles: Vacuoles, Lysosomes, Mitochondria, Chloroplasts,
2. Cell cycle and Cell Division (Mitosis and Meiosis), Their comparison
3. Linkage and Crossing over

UNIT-III

10 Lectures

1. Mendel's Laws of inheritance (Law of dominance, Law of segregation and Independent assortment, Incomplete dominance)
2. Cytoplasmic inheritance
3. Interaction of Genes

UNIT-IV

10 Lectures

1. Sex-linked inheritance, Haemophilia, Colour Blindness,
2. Determination of sex
3. Mutation

Paper II (BBO 402) : Plant Ecology

UNIT-I:

12 Lectures

1. Definition and scope of Ecology
2. Ecosystem; Types, abiotic and biotic components, food chain, food web and ecological pyramids,
3. Energy flow and ecological energetics; Lindemann's Concept of energy flow.

UNIT-II:

12 Lectures

1. Biogeochemical cycles: A brief discussion of concept by giving examples of carbon and nitrogen cycles.
2. Population ecology: Definition, population characters

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3. Community ecology: Community characteristics, structure and composition, quantitative, qualitative and synthetic features, life forms and biological spectrum.

UNIT-III:

14 Lectures

1. Productivity, type, measurement of primary productivity, turn over,
2. ecological succession
3. Bio-geographical regions of India; vegetation types in Uttarakhand.

UNIT-IV:

14 Lectures

1. Applied ecology : Soil erosion and soil conservation,
2. Pollution of air and water, Thermal and radioactive pollution, Prevention and control of pollution.
3. Global warming, ozone depletion and climate change.

Lab Course (BBO 40P):

Study of Cell division Mitosis and Meiosis using smear and squash technique

Problems based on mendel's law and incomplete dominance

To determine the minimum size of quadrat by species area curve method

To determine the minimum number of quadrat to be laid down for the vegetational analysis of the given area

To determine frequency, density and abundance of each species in a community by quadrat method

To prepare frequency diagram and compare it with that of the Raunkier's normal frequency diagram

To determine the main basal cover and total basal cover.

To study the physical character of the soil in terms of temperature, colour texture and pH

To find out the bulk density and porosity of different soil samples.

To estimate the moisture percentage of various soil samples

Books recommended:

Gupta, P.K. 2000. Cytology, Genetics and Evolution, Rastogi Publications, Meerut.

Gupta, P.K. 2000. Genetics, Rastogi Publications, Meerut.

Gupta, P.K. 2001. Elements of Biotechnology. Rastogi Publication, Meerut.

Power, C.B. 1994. Cell Biology. Himalaya Publishing House, Delhi.

Veerbala Rastogi Introductory Cytology. Meerut. Ambasht, R.S. 1992. A Text Book of Plant Ecology, Students Friends & Co. Varanasi.

Jasra, P.K. and Gurudeep Raj, 2000 Biostatistics, Krishna Prakashan Media (P) Ltd. Meerut.

Misra, K.C. 1980. Manual of Plant Ecology. Oxford and IBH Publ. Co. New Delhi.

Odum, E.P. 1983. Basic Ecology. Sounders College Publ, New York.

Ray, M. & Sharma, H.S. 2000. Mathematical Statistics. Ram Prasad & Sons. Agra.

Sharma, P.D. 2001. Ecology and Environment. New Delhi.

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Semester V : 90 Lectures

Paper I (BBO 501): Molecular Biology and Biotechnology

UNIT I

14 Lectures

1. DNA as genetic material : Griffith and Avery Transformation experiment, Harshy and Chase bacteriophage experiment
2. Watson and Crick Model of DNA, Replication of DNA (Semi conservative)
3. Types of RNA (tRNA, rRNA and mRNA) their structure and function.

UNIT II

14 Lectures

1. Eukaryotic chromosome: structure, chemical composition, Karyotype analysis,
2. Ideogram; structure and functions of Polytene and Lampbrush chromosomes

UNIT-III

12 Lectures

1. Definition and scope of biotechnology
2. Theory and techniques of plant tissue culture, storage of gemplasm (cryopreservation)
3. Biology of *Agrobacterium*, vectors for gene delivery and marker genes.

UNIT-IV

14 Lectures

1. Genetic Engineering: Tools and techniques of recombinant DNA technology, cloning vectors, genome and cDNA libraries, transposable elements,
2. Techniques of gene mapping and chromosome walking.
3. Gene Sequencing

Paper II (BBO 502): Plant Breeding and Biostatistics

UNIT-I:

12 Lectures

1. Plant breeding : Aims and objectives, basic techniques of plant breeding
2. Crop improvement method- Plant introduction, selection, acclimatization and hybridization.
3. Mutational breeding and breeding for disease resistance

UNIT-II:

6 Lectures

1. Improved seeds – production, multiplication and distribution.
2. Maintenance and seed testing
3. National Seeds Corporation and Seed Testing Laboratories.

UNIT-III:

10 Lectures

1. Methods of representation of statistical data diagrams.
2. Measurements of central tendencies – Mean, Median, Mode.

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3. Measures of dispersion – range, mean deviation and standard deviation.

UNIT-IV:

8 Lectures

1. Coefficient of correlation.
2. Test of significance-Chi-square test.

Lab Course (BBO 50P):

Study of biotechnological tools and equipments.
Preparation of culture media for plant tissue culture.
Isolation, surface sterilization and inoculation of explants.
Isolation of plant protoplasts.
Preparation of artificial seeds.
Perform the Emasculation in the plant provided.
Determine the Dockage percentage
Determination of Moisture percentage in the soil samples provided.
Study of the Floral Biology of some important plants
Statistical problems of central tendencies, standard deviation, correlation and chi-square test

Books recommended:

Gupta, P.K. 2000. Genetics, Rastogi Publications, Meerut.
Gupta, P.K. 2001. Elements of Biotechnology. Rastogi Publication, Meerut.
Dubey, R.C. 2000. A Text Book of Biotechnology. S.Chand & Company, New Delhi
Aneja, K.R. Experiments in Microbiology, Plant Pathology and Biotechnology. New Age Publication, New Delhi
Chaudhary, H.K. Plant Breeding
Bhandari, M.M. 1979. Practicals in Plant Breeding. Oxford and IBH Publ.Co. New Delhi.
Kapoor, R.L. Plant Breeding and Crop Improvement
Kochhar, S.L. Economic Botany in the Tropics.
Simmonds, N.W. 1988. Evolution of Crop Plants.
Singh, B.D. 2001. Plant Breeding-Principles and Methods, Kalyani Publ. New Delhi.

Semester VI : 90 Lectures

Paper I(BBO 601) : Plant Physiology, Elementary Morphogenesis and Biochemistry

UNIT-I

8 Lectures

1. Cell Physiology, diffusion, permeability, plasmolysis, imbibition, water potential and osmotic potential
2. Active and passive absorption, anatomical features of xylem in relation to path of water transport, ascent of sap.
3. Loss of water from plants, transpiration, factors affecting transpiration, guttation, anatomy of leaf with special reference to loss of water

UNIT-II

12 Lectures

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1. Translocation of solutes, theories and mechanism of translocation, anatomical features of the phloem tissue with reference to the translocation of solutes.
2. Elementary knowledge of the macro and micronutrients.
3. Symptoms of mineral deficiency, techniques of water and sand culture

UNIT-III

14 Lectures

1. Photosynthesis, historical background and importance of the process, role of primary pigments, Concept of two photosystems, Z-scheme, Photophosphorylation, calvin cycle, Factors affecting photosynthesis, chemosynthesis.
2. Respiration, glycolysis, Kreb's cycle, Electron transport mechanism (Chemiosmotic theory), ATP the biological energy currency, Redox potential, oxidative phosphorylation, pentose phosphate pathways, CAM plant, factors affecting respiration, fermentation.

UNIT-IV

14 Lectures

1. Carbohydrates- properties, structures and biological role.
2. Structures and properties of Proteins.
3. Plant growth regulators, Auxin, cytokinins and Abscissic acid
4. Morphogenesis: basic concept of differentiation, morphogenesis, polarity and totipotency, Elementary Plant Movements

Paper II(BBO 602): Economic Botany and Biodiversity

UNIT-I

4 Lectures

1. Importance of plants to mankind
2. Origin of cultivated plants, centres of origin of some important crop plants.

UNIT-II

12 Lectures

1. Origin, history, botanical features and cultivation of wheat, maize and one millet.
2. Legumes- an introduction to the economically important legumes.
3. Oils- Caster oil, linseed oil, mustard oil and mint oil.
4. Sugar and starches (sugar cane)

UNIT-III

14 Lectures

1. General account of fruit (apple, banana, citrus, litchi and mango) and vegetable (root, stem, leaf and fruit vegetable) plants
2. Fibers (Coir, cotton, flax, hemp) and medicinal plants (*Aconitum*, *Atropa*, *Cinchona*, *Ephedra* and *Rauwolfia*) plants
3. Common timber yielding plants (*Chir*, *deodar*, *sal*, *shisham* and *teak*) of western Himalaya
4. Beverages – Tea, coffee and alcohol beverages

UNIT-IV:

12 Lectures

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1. Biodiversity: Basic concept, biodiversity at global and National level, causes of loss of Biodiversity
2. Biodiversity conservation action plan: In situ and Ex-situ conservation, gene bank, introductory account of Biosphere Reserves, national Parks and sanctuaries.

Lab Course (BBO 60P) :

1. Study the path of conduction of water by eosin method
2. Respiratory quotient by Respirometer
3. Estimation of Rate of photosynthesis
4. Rate of transpiration by Ganong's potometer
5. Perform the experiments on Osmosis & plasmolysis
6. Comparison of stomatal & cuticular transpiration
7. Experiments on Paper chromatography, Separation of pigments.
8. Experiments based on use of growth regulators in plants
9. Study of economic importance of Food Crops, Legumes, Oil yielding plants, fruits and vegetable plants.
10. Study of Timber & fire wood yielding plants
11. Study of Fibre yielding & Medicinal Plants
12. Plant based Beverages & Sugars

Recommended Books:

- Devlin, R.M. 1996. Plant Physiology. Indian Print, New Delhi
- Kochhar, P.L. and H.B. Krishnamoorthy. 1998. Plant Physiology.
- Pandey, S.N. 2000. Plant Physiology.
- Srivastva, H.S. 2001. Plant Physiology. Rastogi Publications, Meerut.
- Verma, S.K. 1996. A Textbook of Plant Physiology.
- Zeiger and Tez. 2010. Plant Physiology and Biochemistry
- Plant Wealth of India 1997. Special Issue of Proceedings Indian National science Academy B-63.
- Plucknett, D.L., Smith, N.J.H., William, J.T. and Murti Annishetty, N. 1987. Gene Banks and worlds Food. Princeton University Press, Princeton, New Jersey, USA.
- Rodgers, N.A. and Panwar, H.S. 1988. Planning a Wildlife Protected Area Network in India. Vol. 1. The Report. Wildlife Institute of India, Dehradun.
- Sahni, K.C. 2000. The Book of Indian Trees, 2nd edition. Oxford University Press Mumbai.
- Schery, R.W. 1972. Plants for Man. 2nd ed. Englewood Cliffs, New Jersey. Prentice Hall.
- Sharma, O.P. 1996. Hill's economic Botany (Lata Dr. A.F. Hill, adapted by O.P. Sharma). Tata McGraw Hill Co. Ltd., new Delhi.
- Swaminathan, M.S. and Kocchar, S.L. (Eds) 1989. Plants and Society. Macmillan Publication Ltd., London.
- Thakur, R.S., Puri, H.S. and Husain, A. 1989. Major Medicinal Plants of India. Central Institute of Medicinal and Anomatic Plants, CSIR, Lucknow.

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SRIDEV SUMAN UTTARAKHAND UNIVERSITY, BADSHAHITHAUL, TEHRI
GARHWAL

SYLLABUS: BOTANY COURSE FOR M.Sc. STUDENTS (4 SEMESTERS)

OBJECTIVES OF THE COURSE

To teach the fundamental concepts of Botany and their applications, the syllabus pertaining to M.Sc. (2 Year Degree Course) in the subject of Botany has been prepared as per provision of UGC module and the demand of the academic environment. The syllabus contents are duly arranged unit-wise and contents are included in such a manner that due importance is given to requisite intellectual and laboratory skill. The M.Sc. course of Botany consists of 2 year course with semester system – in all 4 semesters (Two semesters in each year).

Total Marks : 2000 (1000 per year and 500 per semester) of core and elective disciplines

M.Sc. Semester I

Paper No.	Title	Paper Code	Max. Marks (100)	
			Ext.	Int.
I	Microbiology (Bacteria, Viruses and Lichens)	BOT101	80	20
II	Mycology and Plant Pathology	BOT102	80	20
III	Phycology and Bryology	BOT103	80	20
IV	Pteridophyta, Gymnosperms and Palaeobotany	BOT104	80	20
	Lab Course	BOT10P	80	20

M.Sc. Semester II

Paper No.	Title	Paper Code	Max. Marks (100)	
			Ext.	Int.
I	Taxonomy of Angiosperms	BOT201	80	20
II	Cytogenetics and Molecular Biology	BOT202	80	20
III	Economic Botany	BOT203	80	20
IV	Plant Morphology, Anatomy and Embryology	BOT204	80	20
	Lab Course	BOT20P	80	20

M.Sc. Semester III

Paper No.	Title	Paper Code	Max. Marks (100)	
			Ext.	Int.
I	Plant Physiology and Biochemistry	BOT301	80	20
II	Plant Ecology and Remote Sensing	BOT302	80	20
III	Plant Biotechnology	BOT303	80	20
IV	Elective (Any one of the following) (a) Plant Health Management (b) Diversity and Cultivation of	BOT304/E1	80	20

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	Mushrooms: (c) Applied Plant Anatomy (d) Ecosystem Analysis, GIS and Remote Sensing (e) Environmental Management with Reference to Western Himalaya.	BOT304/E2 BOT304/E3 BOT305/E4 BOT305/E5		
	Lab Course	BOT30P	80	20

M.Sc. Semester IV

Paper No.	Title	Paper Code	Max. Marks (100)	
			Ext.	Int.
I	Plant Breeding and Biostatistics	BOT401	80	20
II	Conservation Biology	BOT402	80	20
III	In-vitro Technologies and Industrial Applications	BOT403	80	20
IV	Elective Paper(Any one of the following) (a) Forest Ecology (b) Industrial Microbiology (c) Ethnobotany (d) Palynology and pollination Biology (e) Seed Pathology	BOT404/E1 BOT404/E2 BOT404/E3 BOT404/E4 BOT404/E5	80	20
	Lab Course	BOT40P	80	20

SYLLABUS

SEMESTER I

Paper I (BOT101): Microbiology (Bacteria, Viruses and Lichens)

Unit 1:

1. General account of Microorganisms: History of microbiology, classification of microorganisms- five kingdom classification, characteristic features of bacteria and actinomycetes,

2. Culture Study of Microorganisms: Methods of isolation and culture of microorganisms; measurement of microbial growth; microbial genetics.

Unit 2:

1. Morphology and structure of Bacterial cells: Morphology of Bacterial cells based on size, shape and arrangement, fine structure of bacterial cells (of both Gram-negative and Gram-positive Bacteria) - capsule cell wall, cell appendages (flagella, fimbriae and pili).

2. Structure of plasma membrane, cytoplasmic inclusions- mesosomes, chlorosome.

Unit 3:

1. Morphology and structure of viruses: History, morphology, fine structure, shape and classification of viruses.

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2. Microphages and Prions, Tobacco mosaic virus (TMV), T₄.
3. Bacteriophage and HIV- their fine structure, genome organization and multiplication, bacteriophage therapy.

Unit 4

1. Role of microorganism: Root nodules, *nif* gene organization, role of microorganisms in soil (decomposition and nutrient cycling), water and air; role in industry- production of antibiotics, bio-fertilizers and bio-pesticides.
2. General account of lichens: Occurrence, classification, morphology, anatomy, reproduction and their importance.

SUGGESTED READINGS:

1. Doelle, H.W. and C.G. Heden 1986. Applied Microbiology, Kluwer Academic Press, London
2. Pelczar, M.J., Chan, ECS and Kreig, N.R. 1993. Microbiology, Concept and Applications. Mc Graw Hill, New York
3. Ross, F.C. 1983. Introductory Microbiology. Charles E. Merrill. Publ. Co. Columbus, Ohio.
4. Alexander, M. 1991. Microbial Ecology. John Wiley and Sons, New York.
5. APHA. 1971. Standard Methods for the Examination of water and Waste Water. Washington DC
6. Atlas. R. M. Principle of Microbiology.
7. Buard, R.G. and D.W., Lovelock 1975. Some Method for Microbiological Assay. Acadmic Press, New York
8. Casida, L.E. 1968. Industrial Microbiology. John Wiley and Sons, New York.
9. Clifford, H.T. and W. Stephenson 1975. An Introduction to Numerical Classification, Academic press, New York.
10. Doelle, H.W. and C.G., Heden 1986. Applied Microbiology. Kluwer Acad. Press, London.
11. Kaushik, P. 1996. Introductory Microbiology. Emkay Publ, Delhi.
12. Miller, B.M. and W. Litsky 1976. Industrial Microbiology. Mc Graw Hill New York.
13. Mukherjee, K.G. and Ved Pal Singh, 1997. Frontiers in Applied Microbiology. Rastogi Publ. Meerut.
14. Norris, J.R. and D.W. Ribbons 1970. Methods in Microbiology, Academic Press, London.
15. Power, C.B. and H.F. Dagainawala 1996. General Microbiology 2 Vols. Himalaya Pub. House, New Delhi.
16. Ross, F.C. 1983. Introductory Microbiology. Charles E. Merrill Publ. Co. Columbus. Ohio.

Paper II (BOT102): Mycology and Plant Pathology

MYCOLOGY

Unit 1

1. History of Mycology; India and abroad.
2. General characters of Fungi: Substrate relationship in fungi; Cell ultra-structure; unicellular and multicellular organization, nutrition (saprobic, biotrophic, symbiotic); reproduction (vegetative, asexual, sexual).
3. Recent trends in the classification.

Unit 2

1. Phylogeny of Fungi; General account of *Mastigomycotina*, *Zygomycotina*, *Ascomycotina*, *Basidiomycotina*, *Deuteromycotina*; Fungi in industry, medicine and as food.
2. Mycorrhizae; Fungi as bio-control agents.



3. Symptoms, causal organisms of plant pathogens belonging to various fungal classes i.e. *Mastigomycotina*, *Zygomycotina*, *Acomycotina*, *Basidiomycotina* and *Deuteromycotina*.

PLANT PATHOLOGY

Unit 3

1. History of plant pathology in India: Losses caused by pathogens and pests; types of pathogens; symptoms of different diseases.
2. Plant-microbe interaction: pathogenesis: prepenetration, penetration and post penetration events, and factors affecting disease development (host factors, environmental factors, virulence and susceptibility).
3. Dissemination of pathogens: Means of dissemination (active and passive dissemination)

Unit 4

1. Disease control: Cultural practices, chemical methods (insecticides, systemic and nonsystemic chemical), biological control: introduction, biological control of insects and pests, use of resistant varieties, integrated management for disease control, quarantine.
2. Brief account, structure, importance, disease cycle and control of the following:
(i) Damping off, (ii) Wilt, (iii) Root rot, stem rot and fruit rot, (iv) Mildews (powdery and downy), (v) Rusts, (vi) Smuts, (vii) Leaf spots and leaf blights.
3. General characteristics, importance, disease cycle and control of the following:
(i) Bacterial disease, (ii) viral disease, (iii) mycoplasma disease, (iv) phytoplasma disease.

SUGGESTED READINGS:

1. Ainsworth, G.C. 1971. Ainsworth and Bisby's Dictionary of Genera of Fungi. Central Myco. Inst. Kew, Surrey.UK.
2. Alexopoulos, C.J., Mims, C.W. and Blackwell, M. 1996. Introductory Mycology. John Willey & Sons Inc.
3. Bilgrami, K.S. 1982. Physiology of Fungi. Bishen Singh Mahendrapal Singh, Dehradun.
4. Clifton, A. 1958. Introduction to the Bacteria. McGraw-Hill book Co., New York.
5. Mandahar, C.L. 1978. Introduction to Plant Viruses. Chand & Co. Ltd., Delhi.
6. Mehrotra, R.S. and Aneja, R.S. 1998. An Introduction to Mycology. New Age Intermediate Press.
7. Webster, J. 1985. Introduction to Fungi. Cambridge University Press.

Paper III (BOT103): Phycology and Bryology

PHYCOLOGY

Unit 1

1. Algal habitats.
2. Thallus organization, cell structure and reproduction (vegetative, asexual and sexual).
3. Algal Classification, Criteria for classification of algae: pigments, reserve food and flagella.
4. Phylogeny and interrelationships of algae.

Unit 2

1. Classification and salient features of Chlorophyta, Charophyta, Xanthophyta, Bacillariophyta, Phaeophyta, Rhodophyta and Cyanophyta.
2. A knowledge of algal life cycles; alternation of generations in algae; cytology and sexuality; physiology and biochemistry of algae; nitrogen fixation; parasitic algae.

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3. Economic importance of Algae, Algal blooms, algal biofertilizers, algae as food and feed; uses of algae in industry.

BRYOLOGY

Unit 3

1. Morphology, structure reproduction and life history.
2. Classification and Phylogeny of various groups.
3. General account of Marchantiales, Jungermanniales, Calobryales, Sphaerocarpaceae, and Anthocerotales.

Unit 4

1. General account of Sphagnales, Andreales, Funariales, and Polytrichales.
2. Knowledge of the distribution of bryophytes in the Himalaya.
3. Ecology of bryophytes, their association with other organisms.
4. Fossil bryophytes: General account.

SUGGESTED READINGS:

1. Cavers, F. 1979. The Interrelationships of the Bryophytes Reprint. Bishen Singh Mahendrapal Singh, Dehradun.
2. Fritsch, F.E. 1979. The Structure and Reproduction of Algae. Reprint. Bishen Singh Mahendrapal Singh, Dehradun.
3. Kashyap, S.R. 1968. Liverworts of the Western Himalayas and Punjab Plains. The Chronica Botanic Co. Delhi.
4. Kumar, H.D. 1988: Introductory Phycology. Affiliated East-West Press Ltd., New Delhi.
5. Morris, I. 1986. An Introduction to the Algae. Cambridge University Press, U.K.
6. Parihar, N.S. 1991. Bryophyta. Central Book Depot, Allahabad.
7. Presscott, G.W. Algae: A Review. Bishen Singh Mahendrapal Singh.
8. Puri, P. 1980. Bryophytes. Atma Ram & Sons, Delhi.
9. Ram Udar. Fifty years of Bryology in India. Golden Jubilee Series, IBS, New Delhi
10. Round, F.E. 1986. The Biology of Algae. Cambridge University Press, Cambridge.
11. Smith, G.M. 1955. Cryptogamic Botany. Vol. I and II. Tata Mc Graw Hill, New Delhi.
12. Stewart, W.N. and Rathwell, G.W. 1993. Paleobotany and the Evolution of Plants. Cambridge University Press.

Paper IV (BOT104): Pteridophyta, Gymnosperms and Palaeobotany

PTERIDOPHYTA

Unit 1

1. History, origin, classification, present and past distribution, morphology and life history of the following types.
 - a. Psilophyta: Psilophytales (*Psilophyton*) and Psilotales (*Psilotum*).
 - b. Lycophyta: Lepidodendrales (*Lepidodendron*), Lycopodiales (*Phylloglossum*), Lepidospermales (*Lepidocarpon*) and Isoetales (*Isoetes*).
 - c. Sphenophyta: Salient features of order Hyeniales, Sphenophyllales and Calamitales
 - d. Pterophyta: A general account of Ophioglossales Osmundales Filicales, and Salviniaceae.

GYMNOSPERMS

Unit 2

1. Classification and distribution of Gymnosperms in India with special reference to Himalaya.
2. Study of morphology, structure and life-history as illustrated by the following and indicated in the practical work:

Pteridospermales: Palaeozoic and Mesozoic groups with references to Lyginopteridaceae (*Lyginopteris*) and Medullosaceae (*Trigonocarpus*), A general account of Glossopteridaceae.
3. Bennettitales: A general account of Cycadeoidaceae, Williamsoniaceae and Wielandiellaceae.

Unit 3

1. Cycadales: A detailed account including distribution of living Cycads.
2. A general account of Pentoxylales and Cordaitales.
3. Ginkgoales: *Ginkgo*.
4. A general account of fossil and living Coniferales and Taxales.
5. Ephedrales, Welwitschiales and Gnetales: A general account.
6. Economic importance of Gymnosperms.

PALAEOBOTANY

Unit 4

1. Definition of fossil, different types of plant fossils as per their mode of preservation, concept of form genus.
2. Indian Gondwana Sequence, a general account.
3. Introductory idea of Continental Drift Hypothesis.

SUGGESTED READINGS:

1. Andrews, H.N. 1961. Studies in Palaeobotany. New York.
2. Baker, J.G. 1995. Handbook of the Fern Allies. Reprint. Bishen Singh Mahendra Pal Singh, Dehradun.
3. Bhatnagar, S.P. and Mitra, A. 1996. Gymnosperms. New Age International Pvt. Ltd., New Delhi.
4. Beddome, R.H. 1966. The Ferns of British India. 2 Vols. Oxford and IBH, New Delhi.
5. Chamberlain, C.J. 1955. Gymnosperms: Structure and Evolution. Chicago.
6. Eams, A.J. 1969. Morphology of Lower Vascular Plants.
7. Parihar, N.S. 1996. Biology & Morphology of Pteridophytes. Central Book Depot Allahabad.
8. Raizada, M.B and Sahni, K.C. 1958. Living Indian Gymnosperms.
9. Sahni, K.C. 1996. Gymnosperms of India and Adjacent Countries. Bishen Singh Mahendrapal Singh, Dehradun.
10. Seward, A.C. 1919. Fossil Plants for Students of Botany and Geology. 4 Vols. Cambridge.
11. Sporne, K.R. 1991. The Morphology of Pteridophytes. Hutchinson Library Series London.

Lab Course (BOT10P):

1. Study of representative genera of Zygomycotina, Ascomycotina, Basidiomycotina and Deuteromycotina.
2. Symptomatology of at least one diseased specimen of plant pathogens belonging to various fungal classes i.e. *Mastigomycotina*, Zygomycotina, ascomycotina, basidiomycotina and deuteromycotina, bacteria and viruses.
3. Aseptic methods and demonstration of instruments viz., autoclave, hot air oven, incubator, laminar air flow.
4. Direct examination of root nodule bacteria under microscope and isolation of *Rhizobium* in root nodules.
5. Isolation and enumeration of microbes from natural samples (soil and water) by agar plate technique.
6. Morphological study of representative members of algae: *Microcystis*, *Lyngbya*,

Cylindrospermum, Gloeotrichia, Scytonema, Pandorina, Eudorina, Scendesmus, Pediastrum, Hydrodictyon, Ulva, Enteromorpha, Draperia, Stigeoclonium, Fritschiella, Coleochaete, Bulbochaete, Cosmarium, Caulerpa, Nitella, Dictyota, Gelidium, Gracillaria, Batrachospermum and Polysiphonia.

7. Study and identification with suitable preparations of *Ricciocarpus, Targionia, Cyathodium, Plagioclasma, Asterella (Fimbriaria), Dumortiera, Sewardiella, Peltia, Fossombronia, Porella, Calobryum, Notothylas, Sphagnum, Polytrichum* and *Funaria*.

8. *Psilotum, Isoetes, Ophioglossum, Osmunda, Polypodium, Azolla, Salvinia* and important fossil types.

9. *Cycas, Ginkgo, Abies, Cedrus, Cryptomeria, Cupressus, Podocarpus, Cephalotaxus, Araucaria, Taxus, and Gnetum*

10. Study of available fossil flora through specimens and slides, etc.

SEMESTER II

Paper I (BOT201): Taxonomy of Angiosperms

Unit 1

1. Origin of intra-population variation: Population and the environment; ecads and ecotypes; evolution and differentiation of species- various models.

2. The species concepts; taxonomic hierarchy; species, genus, family and other categories; principles used in assessing relationship, delimitation of taxa and attribution of rank.

Unit 2

3. Salient features of the International Code of Nomenclature for Algae, Fungi and Plants (ICN)

4. Taxonomic evidences and Taxonomic tools: anatomy, palynology, embryology, phytochemistry, histological, cytological, phytochemical, serological, biochemical and molecular techniques.

Unit 3

5. Systems of angiosperm classification: Phenetic versus phylogenetic systems; cladistics in taxonomy; major systems of classification (Bentham and Hooker, Hutchinson, Cronquist) and their relative merits and demerits.

6. Herbaria and Botanical gardens: General account.

7. Plant exploration in India with reference to North-West Himalaya.

8. Status of flowering plant diversity in Garhwal Himalaya.

Unit 4

Distinguishing features and economic importance of Dicot families of

- (i) Polypetalae- Magnoliaceae, Violaceae, Linaceae, Rutaceae, Rhamnaceae, Sapindaceae, Anacardiaceae, Myrtaceae.
- (ii) Gamopetalae- Dipterocarpaceae, Ericaceae, Oleaceae, Rubiaceae, Asteraceae, Acanthaceae.
- (iii) Monochlamydeae- Chenopodiaceae, Amaranthaceae, Urticaceae.
- (iv) Monocots- Orchidaceae, Arecaceae, Liliaceae, Amaryllidaceae, Zingiberaceae, Dioscoreaceae, Cyperaceae, Poaceae.

SUGGESTED READINGS

1. Babu, C.R. 1976. Herbaceous Flora of Dehradun. CSIR, New Delhi.
2. Cole, A.J. 1969. Numerical Taxonomy, Academic Press, London.

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3. Cronquist, A. 1981. An Integrated System of Classification of Flowering Plants. Columbia University Press, New York.
4. Davis, P.H. and Heywood, V.H. 1973. Principles of angiosperms Taxonomy. Robert E. Kreiger Pub. Co., New York.
5. Gaur, R.D. 1999. Flora of District Garhwal: NW Himalaya. Transmedia, Srinagar, Garhwal.
6. Grant, V. 1971. Plant Speciation. Columbia University Press, New York.
7. Grant, W.F. 1984. Plant Biosystematics. Academic Press, London.
8. Harrison, H.J. 1971. New Concepts in Flowering Plant Taxonomy. Hieman Educational Books Ltd., London.
9. Heywood, V.H. and Moore, D.M. 1984. Current Concepts in Plant Taxonomy. Academic Press, London.
10. Hutchinson, J. 1973. The Families of Flowering Plants. 2 Vols. Oxford University Press, Oxford.
11. Jain, S.K. and Rao, R.R. 1977. A handbook of Field and Herbarium methods. Today and Tomorrow, New Delhi.
12. Jones, A.D. and Wilbins, A.D. 1971. Variations and Adaptations in Plant Species. Hieman & Co. Educational Books Ltd., London.
13. Jones, S.B., Jr. and Luchsinger, A.E. 1986. Plant Systematic (2nd edition). McGraw- Hill Book Co., New York.
14. Lawrence, H.W. 1951. Taxonomy of Vascular Plants. Reprint Oxford and IBH, New Delhi.
15. Naithani, B.D. 1985. Flora of Chamoli. 2 Vols, BSI, Calcutta.
- Nordenstam, B., El Gazaly, G. and Kassas, M. 2000. Plant Systematic for 21st Century. Portlant Press Ltd., London.
16. Radford, A.E. 1986. Fundamentals of Plant Systematics. Harper & Row Publications, USA.
17. Singh, H. 1978. Embryology of Gymnosperms. Encyclopaedia of Plant Anatomy X. Gebruder Borntraeger, Berlin.

Paper II (BOT202): Cytogenetics and Molecular Biology

Unit 1

1. The dynamic cell: Structural organization of the plant cell; specialized plant cell.
2. Cell wall: structure and functions; biogenesis, growth.
3. Plasma membrane: structure, models and functions; sites for ATPases, ion carriers, channels and pumps, receptors.
4. Mitochondria and chloroplast: Structure, genome organization, gene expression.

Unit 2

1. Nucleus: structure, nuclear pores, nucleosome organization.
2. Ribosomes: Structure, cytoprotein synthesis.
3. Chromatin organization: Chromosome structure and packaging of DNA, molecular organization of centromere and telomere, euchromatin and heterochromatin, specialized types of chromosomes; polytene, lampbrush, B-chromosomes and sex chromosomes.

Unit 3

1. Principles of inheritance: Mendelian laws along with molecular explanations, Exceptions to Mendelian laws, lethal alleles and Gene Interactions.
2. Structural and numerical alterations in chromosomes: Origin, occurrence, production and meiosis of haploids, aneuploids and euploids, induction and characterization of trisomics and monosomies.

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3. Genetics of prokaryotes and eukaryotic organelles: genetic recombination of phage; genetic transportation, conjugation and transduction in bacteria, cytoplasmic male sterility.

Unit 4

1. Gene structure and expression: Genetic fine structure, cis-trans test; fine structure analysis of eukaryotes, introns and their significance, regulation of gene expression in prokaryotes and eukaryotes. DNA damage and repair mechanism, defects in DNA repair; Initiation of cancer at cellular level, proto-oncogenes and oncogenes.

2. Genetic recombination and genetic mapping: Recombination; independent assortment and crossing over, linkage groups, genetic markers, construction of molecular maps.

3. Mutations: Spontaneous and induced mutations; physical and chemical mutation, molecular basis of gene mutation; mutations induced by transposons.

4. Nuclear DNA content; C-value paradox; Cot curves.

SUGGESTED READINGS:

1. Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, K. and Watson, J.D. 1989. Molecular

2. Biology of the Cell (2nd edition). Garland Publishing Inc., New York.

3. Atherly, A.G., Girton, J.R. and McDonald, J.F. 1999. The Science of Genetics. Saunders College Publishing, Fort Worth, USA.

4. Burnham, C.R. 1962. Discussions in Cytogenetics. Burgess Publishing Co., Minnesota.

5. Busch, H. and Rothblum, L. 1982. Volume X. The Cell Nucleus rDNA Part A. Academic Press.

6. Barry, J.M. and Barry, B.M. 1973. Molecular Biology. Prentice Hall Of India New Delhi.

7. Buchanan, B.B., Gruissem, W. and Jones, R.L. 2000. Biochemistry and Molecular Biology of Plants. American Society of Plant Physiologists, Maryland, USA.

8. De, D.N. 2000. Plant Cell Vacuoles: An Introduction. CSIRO Publication, Collingwood, Australia.

9. Gupta, P.K. 1998. Cytogenetics. Rastogi Publications. Meerut.

10. Hartl, D.L. and Jones, E.W. 1998. Genetics: Principles and Analysis (4th edition). Jones & Bartlett Publishers, Massachusetts, USA.

11. Kleinsmith, L.J. and Kish, V.M. 1995. Principles of cell and Molecular Biology (2nd Edition).

Harper Collins College Publishers, New York, USA.

12. Krishnamurthy, K.V. 2000. Methods in Cell wall Cytochemistry. CRC Press, Boca Raton, Florida.

13. Lewin, B. 2000. Genes VII. Oxford University Press, New York.

14. Lodish, H., Berk, A., Zipursky, S.L., Matsudaira, P., Baltimore, D. and Darnell, J. 2000. Molecular Cell Biology (4th Edition). W.H. Freeman and Co., New York, USA

15. Malacinski, G.M. and Freifelder, D. 1998. Essentials of Molecular Biology (3rd edition). Jones and Bartlet Publishers, Inc., London.

Paper III (BOT203): Economic Botany

ECONOMIC BOTANY

Unit 1

1. Plant resources: Concept, status, utilization and concerns.

2. World Centers of Primary Diversity of domesticated plants

Amruth

Arjun
Arjun

3. Origin, evolution, botany, cultivation, cytotaxonomy and uses of (i) Cereals and millets (wheat, paddy, maize), (ii) Legumes (soybean, black gram and cowpeas), (iii) Sugar cane and starches (sugarcane, beetroot, potato, sweet potato, cassava), (iv) Forage and fodder crops.

Unit 2

1. Fiber crops, medicinal and aromatic.
2. Important firewood and timber yielding plants and non-wood forest products (NWFPs) such as bamboos, gums, tannins, dyes, resins, beverages.

INTELLECTUAL PROPERTY RIGHTS

Unit 3

1. Intellectual Property Rights, Concept, History, Protection of IPR.
2. Patent- requirements, procedures and limitations; International convention on Biological Diversity.

ETHNOBOTANY

Unit 4

1. Concept, linkage with other sciences, tools of ethnobotanical studies, world and Indian perspective with special reference to the Himalayas.
2. Green revolution: Benefits and adverse consequences.
3. Plants used as ornamentals and avenue trees.
4. Principles of conservation: Extinction; Status of plants based on International Union for Conservation of Nature (IUCN).

SUGGESTED READINGS:

1. Ayensu, E.S., Heywood, V.H. and Lucas G.L. 1984. Our green and living world: The wisdom to save it. Cambridge Univ. Press. Cambridge.
2. Baenzinger, S.P., Kleese, R.A. and Barns, R.F. 1993. Intellectual Property Rights, Protection of plant materials; executive summary and work group reports. CSSA Publication No. 21. Crop Science Soc. of America, Wisconsin, Madison.
3. Bellamy, R. 1993. Ethnobotany in Tropical forests: expedition in field techniques, Royal Geographic Society of London.
4. Berlin, B. 1992. Ethnobiological Classification: Principles and categorization of plants and animals in traditional societies. Princeton Univ. Press, Princeton.
5. Chandel, K.P.S., Shukla, G. and Sharma, N. 1996. Biodiversity in Medicinal and Aromatic Plants in India: Conservation and Utilization. National Bureau of Plant Genetic Resources, New Delhi.
6. Conway, G. and Barbier, E. 1994. Plants, Genes and Agriculture. Jones and Bartlett Publishers, Boston.
7. Council of Scientific & Industrial Research 1986. The Useful Plants of India. Publications and Information Directorate, CSIR, New Delhi.
8. Council of Scientific & Industrial Research (1948-1976). The Wealth of India: A Dictionary of Indian Raw Materials and Industrial Products. New Delhi. Raw Materials I-XII, Revised Volume I-III (1985-1992) Supplement (2000).
9. Densmore, F. 1974. How Indians use wild plants for food, medicine and crafts, Dover Publication Inc. New York.
10. WWF INDIA 1993. Directory of Indian Wetlands, New Delhi and AWB, Kuala Lumpur.
11. Falk, D.A., Olwell, M. and Millan, C. 1996. Restoring Diversity. Island Press, Columbia, USA.
12. Frankel, O.H., Brown, A.H.D. & Burdon, J.J. 1995. The Conservation of Plant Diversity.

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J. K.

Cambridge University Press, Cambridge, U.K.

13. Gadgil, M. and Guha, R. 1996. Ecology and Equity: Use and Abuse of Nature in Contemporary India. Penguin, New Delhi.

14. Gangulee, P. 1998. Gearing up for patents- the Indians Scenario. Univ. Press. Hyderabad.

15. Hill, A.F. 1952. Economic Botany. McGraw Hill., New York.

16. Kochar, S.L. 1998. Economic Botany in the Tropics. Mac Millan India Ltd. Delhi

17. Kothari, A. 1997. Understanding Biodiversity: Life Sustainability and Equity. Orient Longman.

18. Kohli, R., Arya, K.S., Singh, P.H. and Dhillon, H.S. 1994. Tree Directory of Chandigarh. Lovedale Educational, New Delhi.

19. Nair, M.N.B. *et al.* (Eds) 1998. Sustainable Management of Non-Wood forest Products. Faculty of Forestry, Universiti Putra Malaysia. 434004 PM Serdang, Selangor, Malaysia

20. Paroda, R.S. and Arora, R.K. 1991. Plant Genetic resources conservation and Management. IPGRI (Publication) South Asia Office, C/o NBPGRI, Pusa Campus. New Delhi.

21. Rodgers, N.A. and Panwar, H.S. 1988. Planning a Wildlife Protected Area Network in India. Vol. 1, The Report. Wildlife Institute of India, Dehradun.

22. Sahni, K.C. 2000. The Book of Indian Trees, 2nd edition. Oxford University Press Mumbai.

23. Sharma, O.P. 1996. Hill's economic Botany (Lata Dr. A.F. Hill, adapted by O.P. Sharma). Tata McGraw Hill Co. Ltd., new Delhi.

24. Swaminathan, M.S. and Kochar, S.L. (Eds.) 1989. Plants and Society. Macmillan Publication Ltd., London.

25. Thakur, R.S., Puri, H.S. and Husain, A. 1989. Major Medicinal Plants of India. Central Institute of Medicinal and Aromatic Plants, CSIR, Lucknow.

26. Walter, K.S. and Gillet, H.J. 1998. IUCN Red List of Threatened Plants. IUCN The World Conservation Union. IUCN, Gland, Switzerland, and Cambridge, U.K.

Paper IV (BOT204): Plant Morphology, Anatomy and Embryology

PLANT MORPHOLOGY

Unit 1

1. Shoot Development: Organization of the shoot apical meristem (SAM); control of cell division and tissue differentiation especially xylem and phloem; secretory ducts and laticifers; wood development in relation to environmental factors and wood anatomy. Leaf growth and differentiation (structural development and classification of stomata and trichomes).

2. Root development: Organisation of root apical meristem (RAM); vascular tissue differentiation; lateral roots; root hairs.

3. Morphology of flower, stamen and carpel. Plant adaptations and their morphological nature.

EMBRYOLOGY

Unit 2

1. Male gametophyte: Structure of anther; microsporogenesis; pollen germination, pollen allergy; pollen embryos.

2. Female gametophyte: Ovule development; megasporogenesis; development and organization of the embryo sac.

3. Pollination, Pollen-pistil interaction and fertilization: Floral characteristics, pollination mechanism and vectors; commercial consideration: structure of the pistil; pollen stigma interactions; sporophytic and gametophytic self-incompatibility (cytological, biochemical and molecular aspects); double fertilization; in vitro fertilization.

Unit 3

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1. Seed development and fruit growth: Endosperm development during early, maturation and desiccation stages; embryogenesis, cell lineages during late embryo development;
2. Polyembryony; apomixis, embryo culture.
3. Latent Life-dormancy: Importance and types of dormancy; bud dormancy.

ANATOMY

Unit 4

1. Tissue - General account
2. Stem anatomy - Dicot and Monocot
3. Root anatomy - Dicot and Monocot
4. Anamalous Secondary Growth - *Boerhaavia*, *Draceena*, *Nyctanthes*, *Mirabilis*, *Salvadora*, Periderm formation

Suggested Readings:

1. Bhojwani, S. S. and Bhatnagar, S. P. 2000. The embryology of Angiosperms. Vikas Publ. House, New Delhi.
2. Aghwan, V. 1997. Molecular embryology of flowering plants. Cambridge Univ. Press, Camp.
3. Shivanna, K. R. and Sawhney, V. K. 1997. Pollen biotechnology for crop production and improvement Cambridge Univ. Press.
4. Shivanna, K. R. and Sawhney, V. K. Pollen Biology.
5. Fonkot De. 1994. Plant growth and Development, A molecular approach, Academic Press, San Diego.
6. Howell, S. H. 1998. Molecular genetics of plant Development. Cambridge Univ. Press.
7. Leins, P., Tucker, Sc & Endress, P. K. 1988. Aspects of floral development, J. Cramer. Germany.
8. Lyndon, R. F. 1990. Plant development: The cellular basis. Unnin Hyman, London.
9. Raghavan V. 1999. Developmental Biology of flowering plants. Springer velag, New York.
10. Singh, S.P. A Textbook of Plant Anatomy.
11. Tayal, M.S. 1996. Plant Anatomy. Rastogi Publ. Meerut.

Lab Course (BOT20P):

1. Identification and description of locally available plants belonging to families included in the syllabus from fresh specimens, herbarium or preserved materials. After identification up to family level any suitable regional Flora may be provided for generic identification if required.
2. Description of a species based on various specimens to study intra specific variation.
3. Studies to find out the location of key characters and preparation of keys at generic level.
4. Field trips, compilation of field notes, the preparation of herbarium sheets and submission of herbarium and museum specimens and/or live potted specimens of taxonomic interest and submission of the excursion report.
5. Study of alternate and distichous, alternate and superposed, opposite and superposed opposite and decussate leaf arrangement. Examination of rosette plants (*Launaea*, *Mollugo*, *Raphanus*, *Hyoscyamus*, etc.) and induction of bolting under natural conditions as well as GA treatment.
6. Microscopical examination of vertical section of leaves, such as that of *Camabis*, *Nicotiana*, *Zea mays* and *Triticum* to understand the internal structure of the tissue and trichomes, glands, etc. Also to study the anatomy of C₃ and C₄ plants.
7. Study of epidermal peels of leaves to study the development and final structure of stomata and

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prepare stomatal index.

8. Study of microsporogenesis and gametogenesis in sections of anthers.

9. Examination of modes of anther dehiscence and collection of pollen grains for microscopic examination (maize, grasses, *Cannabis sativa*, *Crotolaria*, *Tradescantia*, *Brassica*, *Petunia*, *Solanum melongena*, and locally available flowers).

10. Tests for pollen viability using stains and *in vitro* germination. Pollen germination using hanging drop and sitting drop cultures.

11. Pollen storage, pollen-pistil interaction, self-incompatibility, *in vitro* pollination.

12. Food crops: wheat, rice, maize, chickpea, potato, tapioca, sweet potato, sugarcane; morphology, anatomy and micro chemical tests for stored food materials.

13. Forage/fodder plants: Study of ten important fodder crops of the locality.

14. Plant fibers: Textiles fibers (cotton, jute, sun hemp, cannabis, *Grewia*, etc.), Cordage fibers (coir), Stuffing fibers (silk cotton). Morphology, anatomy, microscopic study of whole fibers using appropriate, staining procedures.

15. Medicinal and aromatic plants including narcotics and antibiotics.

16. Vegetable oils: Mustard, groundnut, soybean, coconut, sunflower and castor. Morphology, microscopic structure of oil yielding tissues, test for oil and iodine number.

17. To prepare a water extract of vegetable tannins (*Acacia*, *Terminalia*, *Camellia*, *Cassia*) and dyes (*Curcuma longa*, *Bixa orellana*, *Indigofera*, *Butea monosperma*, *Lawsonia inermis*, etc.).

18. Study of mitotic chromosomes in root tips and leaf buds and meiotic chromosomes in floral buds.

19. Isolation of chloroplasts and SDS-PAGE profile of proteins to demarcate the two subunits of Rubisco.

20. Restriction digestion of plant DNA, its separation by agarose gel electrophoresis and visualization by ethidium bromide staining.

21. Isolation of RNA and quantitation by spectrophotometric method.

22. Southern blot analysis using a gene specific probe.

23. Northern blot analysis using a gene specific probe.

24. Western blotting and ELISA.

25. Genetical problems on Mendelian and post-Mendelian ratios, gene interactions, sex-linked inheritance, chromosomal mapping, etc.

SEMESTER III

Paper I (BOT301): Plant Physiology and Biochemistry

Unit 1

1. Functional aspects of plant cell structure: colloidal systems, concept of water potential, diffusion, osmosis and imbibition: Life giving unique properties of water.

2. Energy flow: Principles of thermodynamics, free energy and chemical potential, redox reactions, structure and functions of ATP.

Unit 2

1. Biologically important molecules: Carbohydrates, Amino acids, Proteins and Lipids.

Fundamentals of enzymology: General aspects of enzymes, allosteric mechanism, regulatory and active sites, isozymes, kinetic catalysis, Michaelis-Menton equation and its significance.

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2. Membrane transport and translocation of water and solutes: Plant-water relations, mechanism of water transport through xylem and transport in cells. Absorption and transpiration of water.

Unit 3

1. Photophysiology and photosynthesis: General concepts and historical background, evolution of photosynthetic apparatus, photosynthetic pigments and light harvesting complexes, photo-oxidation of water, light reaction, Z scheme and photophosphorylation, mechanism of electron transport, carbon assimilation – the Calvin cycle, photorespiration and its significance, the C4 cycle, the CAM pathway, factors of photosynthesis.

2. Respiration and lipid metabolism: Overview of plant respiration, glycolysis, the TCA cycle, electron transport and ATP synthesis, pentose phosphate pathway, glyoxylate cycle, alternative oxidation system, photorespiration.

Unit 4

1. Nitrogen fixation, nitrogen and sulphur metabolism: Overview, biological nitrogen fixation, nodule formation and nod factors, mechanism of nitrate uptake and assimilation, sulfur uptake, transport and assimilation.

2. Phytohormones and Sensory photobiology: History of discovery of phytochromes and cryptochromes, and their photochemical and biochemical properties, photophysiology of light-induced responses, molecular mechanism of action of photomorphogenic receptors, signaling and gene expression.

SUGGESTED READINGS:

1. Buchanan, B.B., Gruissem, W. and Jones, R.L. 2000. Biochemistry and Molecular Biology of Plants. American Society of Plant Physiologists, Maryland, USA.
2. Dennis, D.T., Turpin, D.H., Lefebvre, D.D. and Layzell, D.B. (eds) 1997. Plant Metabolism (Second edition). Longman, Essex, England.
3. Hooykaas, P.J.J., Hall, M.A. and Libbenga, K.R. (eds) 1999. Biochemistry and Molecular Biology of Plant Hormones. Elsevier, Amsterdam, The Netherlands.
4. Hopkins, W.G. 1995. Introduction to Plant Physiology. John Wiley & Sons, Inc., New York, USA.
5. Lodish, H., Berk, A., Zipursky, S.L., Matsudaira, P., Baltimore, D. and Darnell, J. 2000. Molecular Cell Biology (4th edition). W.H. Freeman and Company, New York, USA.
6. Moore, T.C. 1989. Biochemistry and Physiology of Plant Hormones (second edition). Springer-Verlag, New York USA.
7. Nobel, P.S. 1999. Physicochemical and Environmental Plant Physiology (Second edition). Academic Press, San Diego, USA.
8. Noggle, G.R. and Fritz, G.F. 1977. Introductory Plant Physiology. Prentice Hall, New Delhi.
9. Salisbury, F.B. and Ross, C.W. 1992. Plant Physiology (4th edition). Wadsworth Publishing Co., California, USA.
10. Singhal, G.S., Renger, G., Sopory, S.K., Irrgang, K.D. and Govindjee 1999. Concepts in Photobiology: Photosynthesis and Photomorphogenesis. Narosa Publishing House, New Delhi.
11. Taiz, L. and Zeiger, E. 1998. Plant Physiology (2nd edition). Sinauer Associates, Inc., Publishers, Massachusetts, USA.
12. Thomas, B. and Vince-Prue, D. (1997) Photoperiodism in Plants (Second edition). Academic Press, San Diego, USA.

Corwin

Pravin

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Paper II (BOT 302): Plant Ecology and Remote Sensing

PLANT ECOLOGY

Unit 1

1. Climate, soil and vegetation patterns of the world: Major biomes and vegetation types and environmental factors.
2. Population dynamics: Characters, r- and k- strategies.
3. Vegetation organization: Concepts of community and continuum; community characteristics, concept of ecological niche, ordination.
4. Ecological succession: Causes, mechanism and types, concepts of climax.

Unit 2

1. Ecosystem: Structure and functions; primary production (methods of measurement, global pattern, controlling factors); energy dynamics (Trophic organization, energy flow pathways, ecological efficiencies); litter fall and decomposition (mechanism, substrate quality and climatic factors);
 2. Global biogeochemical cycles of C, N, P and S: (pathways, processes, in terrestrial and aquatic ecosystems; nutrient use efficiency, hydrological cycle.
 3. Ecosystem stability: Concept (resistance and resilience); ecological perturbation (natural and anthropogenic) and their impact on plants and ecosystems; ecology of plant invasion; environmental impact assessment; ecosystem restoration.
 4. Biological diversity: Concept and levels; species richness, diversity indices, concept of α and β diversity, phytogeographical regions of India, role and application of biodiversity in ecosystem function; speciation and extinction; IUCN categories of threat; distribution and global patterns of biodiversity, hot spots; inventory.
- Environmental pollution: Kinds; sources, quality parameters; effects on plants and ecosystems and remedies.

Unit 3

1. Climate change: Greenhouse gases sources, trends and role; ozone layer and ozone hole; consequences of climate change (CO₂ sequestration, global warming, sea level rise, UV radiation).
2. Fire as an ecological factor: Types, role of fire, extent and causes of fire in forest, grasslands and in tropical savanna, fuel load, controlled burning, fire in different forest types in Uttaranchal; fire as management tool

REMOTE SENSING

Unit 4

1. Remote Sensing: Concepts and stages in the acquisition of remote sensing data; Spectral signature
2. Photographic and non-photographic sensors, Space Platforms.
3. Basic principles of Photogrammetry and Photo-interpretation.
4. Application of remote sensing in ecological research.

SUGGESTED READINGS:

1. Barbour, M.G., Burk, J.H. and Pitts, W.D. 1987. Terrestrial Plant Ecology. Benjamin/Cummings Publication Company, California
2. Begon, M., Harpor, J.L. and Townsend, C.R. 1996. Ecology. Blackwell Science, Cambridge, U.S.A.
3. Chapman, J.L. and Reiss, M.J. 1988. Ecology: Principles and Applications. Cambridge University Press, Cambridge, U.K.

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4. Heywood, V.H. and Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge University Press.
5. Kershaw, K.A. Quantitative and Dynamic Ecology. Oxford and IBH. Kormondy, E.J. 1996. Concepts of Ecology. Prentice-Hall of India Pvt. Ltd., New Delhi.
6. Odum, E.P. 1983. Basic Ecology. Saunders, Philadelphia
7. Smith, R.L. 1996. Ecology and Field Biology. Harper Collins, New York.

Paper III (BOT303): Plant Biotechnology

Unit 1

1. Biotechnology: Principle and scope, bio-safety guidelines.
2. Plant cell and tissue culture: Concept of cellular differentiation and totipotency, principle of root and shoot generation in vitro, applications of cell and tissue culture.
3. Callus culture, cell suspension culture, cryopreservation, clonal propagation, organ culture, protoplast culture, organogenesis, somatic embryogenesis, somatic hybridization, artificial seed, hybrids and cybrids; somaclonal variation.

Unit 2

1. Recombinant DNA technology: Tools of genetic engineering: enzyme, vectors; plasmids, cosmids, lambda phage vectors, shuttle vectors. BACs and YACs. Cloning strategies, genomic libraries, CDNA libraries, single gene cloning.
2. Detection and characterization of transformants: Screening and selection for transformants:

Unit 3

1. Hybridizations - colony, Southern, Northern, Western. DNA sequencing techniques, expression vectors in bacteria and eukaryotes; expression of industrially important products.
2. Genetic engineering of plants: Aims, tools, strategies for development of transgenic plant with suitable example, alien gene transfer and applications.

Unit 4

1. Elementary Knowledge of next generation sequencing, intellectual property rights, genomics and proteomics.
2. Biological databases (gene and protein). DNA restriction map analysis, DNA and protein sequence alignment. BLAST and FASTA.

Suggested Readings:

1. Bhojwani, S.S. and Razdan, M. K. (1996). Plant Tissue Culture: Theory and Practice. Elsevier Science Publisher, New York (U.S.A).
2. Bhojwani, S.S. (1990). Plant Tissue Culture: Applications and Limitations. Elsevier Science Publisher, New York (U.S.A).
3. Collins, HA and Edwards, S. (1998). Plant Cell Culture. Bios Scientific Publisher, Oxford (UK).
4. Glazer, A.N. and Nikido, H. (1995). Microbial Biotechnology. W.H. Freeman and Company, New York (USA).
5. Shantharam, S. and Montgo Mery, J.F. (1999). Biotechnology, Biosafety and biodiversity. Oxford and IBH Publishing Company. Pvt. Ltd. New Delhi.
6. S.B. Primrose and R. M. Twyman. Principles of Gene Manipulation and Genomics.
7. Brown TA; Gene Cloning and DNA Analysis 5th Ed, 2006.
8. Sambrook & Russel Cold Spring Harbour Laboratory press N 2001. Molecular Cloning; 3rd Ed; D. W. Mount Bioinformatics; 2nd Ed; Cold Spring Harbor Laboratory Press; 2004.



9. Arthur Lesk. Introduction to Bioinformatics.

ELECTIVE PAPERS:

Paper IV (a) (BOT304/E1): Plant Health Management

Unit 1

1. Basic procedure in diagnosis of plant diseases: Significance of plant diseases.
2. Seed Pathology: Seed borne fungi. Disease transmitted through seeds. Bio-deterioration of seed in storage. Control of seed borne fungi.

Unit 2

1. Nursery disease: Important disease of nursery plants.
2. Plantation disease: Plantation disease of *Chir pine, Eucalyptus, Sal, Teak, Shisam, Populus, Acacia*.

Unit 3

1. Important disease of cash crops: Sugarcane, Potato and Ginger. How plants defend themselves against pathogen. Control of crop and forest disease. Treatment of wounds.
2. Introduction and various forms of Mycorrhiza. Role of Mycorrhiza in Forestry.

Unit 4

1. Diseases of cereals and Millets.
2. Diseases of vegetables and fruit trees.

Lab Course

1. Isolation and inoculation of mycorrhiza.
2. Study of seed borne pathogen. Description of pathogen, symptoms and section cutting.
3. Isolation of some important pathogens.
4. Procedure of equipments uses.
5. To establish a plant disease clinic in the department for advise to local people.

SUGGESTED READINGS:

1. Bilgrami, K.S. 1985. Text Book of Modern Plant Pathology. Bishen Singh Mahendra Pal Singh Dehradun.
2. Butler, E.J. 1973. Fungi and Disease in Plants, Intern, Book Distributers. Dehradun.
3. Singh, R.S. 1983. Plants Diseases. Oxford and IBH Publ. Co. New Delhi.
4. Singh, R.S. Principle of Plants Pathology. Oxford and IBH Publ. Co. New Delhi
5. Strobil, G.A. and D.E., Mathre 1970. Outlines of Plant Pathology. Van Nostrand Reinhold Co. New York.
6. Tarr, S.A.J. 1972. The Principle of Plants Pathology. Winchester Press, New York.
7. Western, J.H. 1971. Diseases of Crop Plants. Mc Millan Press London

Paper IV (b) (BOT304/E2): Diversity and Cultivation of Mushrooms

Unit 1

1. General characteristics and life history: Reproduction, spore print, dissemination, growth size, colour and surface textures, odour, taste, Exudation and fairy rings; Bioluminescence and economic importance.
2. Biodiversity of Mushrooms.
3. Status of Mushroom research in India.
4. Ethnomycological approach of mushrooms. especially in Uttarakhand Himalaya.

5. Edible and poisonous mushrooms. Mushroom recipes, mushroom toxins, disease and pests of mushrooms.

Unit 2

1. Introduction to mushroom groups.

2. Taxonomic study of order Agaricales- Systematics of dark spored families viz., Boletaceae, Bolbitaceae, Boudarzewiaceae, Cortinariaceae, Coprinaceae, Crepidotaceae, Entomataceae, Gomphideaceae, Paxillaceae, Russulaceae; Systematics of light spored families. Agaricaceae, Amanitaceae, Hygrophoraceae, Pluteaceae, Tricholomataceae.

3. Order Aphyllophorales: Introduction and Systematics of Cantharelloid forms, Thelephoroid forms, Cupuloid forms, Clavarioid forms, hydroid forms and poroid forms.

4. Gasteromycetes: Introduction and Systematics of order Hymenogasterales, Lycoperdales, Nidulariales, Phallales, Podaxales and Sclerodermatales.

Unit 3

1. DNA isolation, amplification and ITS; RELP, RAPD Analysis; DNA Primers and markers; PCR machine and working knowledge; Gel Electrophoresis, Use of Geldoc, Sequence and Phylogenetic data analysis.

2. Computer application in Mushroom Science, Formation of clade, dendrograms and sequence alignment; Knowledge to submit mushroom sequence data online, NCBI, MEGA4 and Muttalign.

3. Ecology of mushrooms. Role of mushrooms in forest ecosystem.

4. Mycorrhiza ; endomycorrhiza (arbuscular mycorrhiza), Ectendomycorrhiza (arbutoid mycorrhiza), Ericoid mycorrhiza, Monotropoid mycorrhiza and orchid mycorrhiza.

Unit 4

1. Tissue culture in wild mushrooms.

2. Preparation of compost- paddy straw, saw dust.

3. Cultivation of edible and medicinal mushrooms: *Agaricus*, *Calocybe*, *Flammulina*, *Ganoderma*, *Hericium*, *Lentinus*, *Pleurotus*.

Lab Course

1. Collection, preservation and identification of wild mushrooms

2. Morphological features: field notes, chemical spot tests, photography, sporeprint, colour change, smell, taste, etc.

3. Anatomical features: Microscopic studies, Mycorrhizal studies.

4. Ecological Observation.

5. Tissue culture techniques: Media preparation, solid and liquid culture media preparation. Pure culture techniques, Sub culturing, Lyophilization, Maintenance of mushroom culture.

6. Cultivation of *Agaricus*, *Calocybe*, *Flammulina*, *Ganoderma*, *Lentinus* and *Volvariella*.

7. DNA Isolation, amplification and ITS, RELP, RAPD analysis, DNA primers and markers. PCR and Gel electrophoresis.

SUGGESTED READINGS:

1. Allen, M.F. 1991. The Ecology of Mycorrhiza. Cambridge Univ. Press, Cambridge.

2. Bakshi, B.K. 1974. Mycorrhiza and its role in forestry, FRI, Dehradun.

3. Chang, S.T. and W.A. Hayes. 1978. *The Biology and Cultivation of Edible Mushrooms*. Academic Press.

4. HacsKaylo, E. 1971. Mycorrhizae, USDA Forest Service Publ. No. 1189. US Govt. Printing Office, Washington, DC.

5. Hawksworth, D.L.; Sutton, B.C. and Ainsworth G.C. 1983. Dictionary of the Fungi. Kew, Surrey, England.
6. Krieger, L.C.C. 1967. The Mushroom Handbook. Dover Publications. INC New York.
7. Largent, D.L. 1977. How to identify Mushrooms to genus? I Macroscopic features. Mad River Press, Inc. Eureka.
8. Miller, O.K. Jr. 1981. Mushrooms of North America. EP Dutton, New York.
9. Singer, R. 1986. The Agaricales in Modern Taxonomy. BSMPS, Dehradun.
10. Stamets, P. and J.S. Chilton 1983. The Mushroom Cultivator, Agarikon Press, Olympia, Washington.

Paper IV (c) (BOT304/E3): Applied Plant Anatomy

Unit 1

1. Different types of microscopes, their principles, working and utility.
2. Sources of Timber. Importance of knowledge of wood structure.
3. How wood is formed: Cambium and its derivations, secondary growth, juvenile wood and mature wood.

Unit 2

1. Physical features of wood visible on the cross surface of log, sapwood and heart wood, growth rings and growth marks, colour, luster, odour and taste, weight, grain, texture.
2. Gross features of wood visible on longitudinal surface of wood.

Unit 3

1. Ultra structure of wood and techniques: Electron microscope, ultra structure of cell wall, microfibril angle.
2. Natural defects of wood: Reaction wood, Knots, Silica content and other defects due to stress.

Unit 4

1. Defects of timbers to utilization.
2. Wood structure in relation to properties and uses.
3. Criteria and methods of assessment of wood quality in plantation grown timbers, viz: *Eucalyptus* and *Populus* for pulp and timber.

Lab Course

1. Different types of Microscopes, their working and utility, Research, Polarized and Electron Microscopes.
2. Juvenile wood and mature wood: Maceration techniques.
3. Section cutting and mounting of different types soft and hard woods (locally available). Microscopic and anatomical features of wood viz: bamboo, canes and coconut.
4. Ultra structure of the wood and techniques. Study of cell wall, microfibril angle and proportion of tissues.
5. All physical features visible on cross surface of log.
6. Gross features of wood visible on longitudinal surface.

SUGGESTED READING

1. Wilson and Whyte Text Book of Wood Technology. HP Brown, McGraw Hill, New York.
2. Indian Forest Utilization. FRI Vol. I and II. Comparative Wood Anatomy. Sherwin Carlquist.
3. Ramesh Rao, K and Junija. Field Identification of 50 important timbers of India, FRI.
4. Tieman Pitman. Wood Technology, New York.
5. Foster, AS, Nostrand, D Van. Practical Plant Anatomy. New York.

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6. Gupta, S. Atlas of Indian Heartwoods- their anatomical features and photomicrographs.
7. Fahn, A. Plant Anatomy. Pergamon Press.

Paper IV (d) (BOT304/E4): Ecosystem Analysis, GIS and Remote Sensing

Unit 1

Aerial Photography and Photogrammetry (AP&P):

1. Fundamentals of Aerial Photography, History, Aerial film processing, Procurement, and Security of Aerial photographs, Energy source and atmospheric effects in aerial photography. Principles of Aerial Photos (flight planning).
2. Introduction to Photogrammetry, Geometry of Aerial photos, Stereoscopic photography, Measurement of Height, Aerial Triangulation.
3. Principles and fundamentals of Aerial photo interpretation, Basics of Cartography.

Unit 2

Remote Sensing (RS):

1. Introduction to Remote Sensing. The electromagnetic spectrum, Energy interaction with atmosphere and earth surface, satellite and sensors, Remote sensing data acquisition.
2. Principles and basic concepts of Multispectral, Thermal and hyperspectral Scanning: Across-track and Along Track multispectral Scanning, History of Space Imaging
3. Image Interpretation: Type of Imagery, elements of Interpretation, Techniques of Visual Interpretation, Role of remote sensing in ecological research.

Unit 3

Digital Image Processing (DIP):

1. Fundamentals of digital image processing, Image rectification, Restoration and Enhancement.
2. Image classification: Supervised classification, unsupervised classification; Hybrid classification, Post-classification smoothing and Classification accuracy assessment.
3. Principles of microwave sensing, Geometric characteristics, Spatial resolution. Space-borne Radar System, Application of passive microwave sensing.

Unit 4

Geoinformatics (GIS):

1. Basics of Computer, Hardware and software,
2. Principles and basics of Geographic Information System: Raster and Vector GIS, Database creation and management, Network Analysis, Spatial data integration and Modelling.
3. Basics of Global Positioning System, GPS Satellites and GPS utility.

Lab Course

1. Stereo test and study of different types of aerial photos. Orientation of Stereo model for interpretation and mapping.
2. Determination of Scale, Determination of Height and Slope.
3. Visual interpretation of aerial photos and satellite data on different scales, Study of different types of satellite data products.
4. Study of Multispectral data, Study of Image Processing Systems, Display of raw data, Histogram analysis.
5. Digital classification and Enhancement of satellite data, Information extraction using DIP techniques.
6. Study of Geographic Information System, Geo-referencing, designing GIS database, Editing spatial and attribute, data output presentation.



Suggested Readings:

1. Lillesand & Kieffer, Remote Sensing and Image Interpretation. John Wiley & Sons, New York.
2. Sabins, F.F., Jr. Remote Sensing: Principles and interpretation.
3. Bhatia, S.C. Fundamentals of Remote Sensing.
4. Chanda, Datta, Majumdar, Digital Image Processing & Analysis.
5. Chang, K.T. Introduction to Geographic Information Systems.
6. Rao, et al., Geographic Information System.
7. Johnston C.A. Geographic Information Systems in ecology.
8. Ahmed, E. I & Rabbany. Introduction to Global Positioning System.
9. Aronoff, S. 1991. Geographic Information Systems: A Management Perspective. Ottawa WDL Publ.
10. Barrett, E.C. 1982. Introduction of Environmental Remote Sensing. Chapman and Hall.
11. Burrough, P.A. 1986. Principle of Geographic Information System for Land Resources Assessment. Oxford University Press.
12. Colwell, R.N. 1983. Manual of Remote Sensing. Vol. I,II American Society of Photogrammetry.
13. Curran, P.J. 1985. Principle of Remote Sensing. Longman Group.
14. Dary, S.A. 1990. A Guide to Sensing. Interpreting Image of Earth. Wiley and Sons.
15. Horv, R.M. 1986. Remote Sensing: Method and Application, John Wiley and Sons.
16. Jenson, J.R. 1996 Introductory Digital Image Processing, Prentice Hall, New Delhi.
17. Johnson, P.I. 1969. Remote Sensing in Ecology, Univ. Georgia Press, Athens.
18. Rampal, K.K. 1982. Text Book of Photogrammetry. Oxford and IBH Press.,
19. Rees, W.G. 1990. Physical Principles of Remote Sensing, Cambridge University Press.
20. Schander, E. 1976, Remote Sensing for Environmental Sciences. Springer Verlag.
21. Ulaby, F.T. Moor, R.K. and Fung, A.K. 1982. Microwave Remote Sensing Active and Passive. Vol. I and II Wesley Pub.

Paper IV (c) (BOT304/E5): Environment Management with Reference to Western Himalaya.

Unit 1

1. Introduction to the Environmental Management, Major Environmental Problems, Environmental ethics; Resource and conflicts, Environmental Laws; Stockholm Conference, The Earth summit, The Copenhagen Conference, Environmental Protection and Fundamental rights, Environmental Governance in India, Man and Environment, Trade and Environment; the WTO, and GATS, Environment Concerns and WTO.
2. Introduction to the Environmental Impact Assessment; Planning and Significance, EIA practices and future trends in India; Legal frame work for EIA. Impact of forest fires, Forest Fire

Unit 2

1. Assessment and Risk Zonation. Thermal power stations, Power line and roads, River valley projects, Urbanization and Industrialization, Mining activities, GHGs, CFCs, fossil fuels etc., Flood monitoring, Snow melt and Glaciers, Ozone Layer Depletion. Principles of Environmental Analysis, Role of remote sensing in EIA.
2. Environmental Management and Natural Resources, Air Pollution, Water Pollution and its

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Management, Environmental Pollution Act; Waste disposal and management, Integrated solid waste management, Recycling, Incineration, Sanitary landfill, Sewage disposal and sewage treatment; Hazardous wastes.

Unit 3

1. Environmental policy and environmental management system, Audit items and audit procedures, ISO Certification.
2. Watershed management: Definition and basic concepts, Aims and Principles, Importance of integrated watershed management, Principal watershed problems of India.

Unit 4

1. Basic concept of ecosystem and community, Biological populations and communities, Ecological niches, interaction among species, Key stone species, Species diversity and edge effects, Major terrestrial and aquatic biomes, Energy Flow, Food webs and trophic levels, Ecosystem diversity, Climate shifts, Species movements.
2. Biodiversity and conservation, *In-situ* and *ex-situ* conservation, Indigenous knowledge and biodiversity conservation, Loss of biodiversity- causes and its impact; Convention on biodiversity, Major Biodiversity resources. Global trends of invasive species, threats and managing invasive plants.
3. Biofuel plants- *Jatropha*, sugarcane and oil crops, Biofuel plantation, energy criteria for species selection, achievement of sustainable Biofuel production; Bioconversion, utilization of biomass sources, Incineration of organic wastes for energy. Alien invasive species and bioenergy production; Bioenergy and food production controversies. Carbon sequestration and carbon pools.

Lab Course

1. Field surveys to study various types of natural resources in Uttarakhand Himalaya.
2. Study on the pressures impinging on the natural resources.
3. Observations on the Environment Impact Assessment of Hydroelectric Power Project in Uttarakhand Himalaya.
3. Observations on Natural disasters viz., floods, landslides, forest fires frequent in Himalayas
4. Visits to National Parks, Wild life Sanctuaries and Biosphere Reserves.

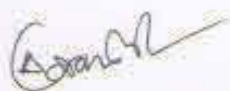
SUGGESTED READINGS

1. FAO Conservation Guide Nos. 12, 13/1, 13/3, 13/4, 13/6, 14. Rome.
2. Heywood, H.V. 1995. Global Biodiversity Assessment.
3. Lochwood, M., Worboys, G.L. and Ashish, K. 2006. Managing Protected Areas: A Global Guide.
4. Ramakrishnan, P.S., Saxena, K.G. and Chandrashekara, U.M. 1998. Conserving the sacred for Biodiversity Management. Oxford and IBH Publ. Co. New Delhi
5. Richard, P.P. 1998. Essentials of Conservation Biology. Boston University.

Lab Course: BOT30P*

Plant Physiology and Biochemistry

1. To study the effect of temperature upon the permeability of the cytoplasmic membrane.
2. To determine the osmotic pressure (potential) of cell saps of living cells by plasmolytic method
and also by using KNO₃ and sugar solution and to calculate the isotonic coefficient of sugar.



3. To determine the diffusion pressure deficit of plant cells.
4. To set up a Wilmott's bubbler and to study the effect of the following on the rate of photosynthesis
(a) varying CO₂ concentration and (b) different wavelengths of light.
5. To extract the four pigments i.e. chlorophyll a & b, carotene and xanthophylls from the green leaves and preparation of their absorption spectrum.
6. To separate the four pigments i.e. chlorophyll a & b, carotene and xanthophylls from the green leaves by paper chromatography and column chromatography.
7. To separate the amino acids by paper chromatography.
8. Principles of colorimetry, spectrophotometry and fluorimetry.

Plant Ecology and Remote Sensing

1. To determine the minimum size of the quadrat by species area curve method and minimum number of quadrats to be laid down in the field under study.
2. To determine the frequency, density and abundance of each species present in community.
3. To calculate relative frequency and relative density of each species in a given area.
4. To calculate mean basal cover and total basal cover of each species in a given area.
5. To compute the relative dominance and IVI (Importance Value Index) of each species in a given area.
6. To calculate the Alpha (α) diversity, Beta (β) diversity and total diversity of given community.
7. To calculate water holding capacity of three samples of various soil types and to find the percolation percentage of water in the given soil.
8. To find out the bulk density and porosity of different soil types
9. To test the pH and the buffering properties of soils.
10. Study of types of aerial photos and satellite data products.
11. Orientation of stereo model under mirror stereoscope.

Biotechnology:

1. Tissue culture activities
2. Growth characteristics of *E. coli* using plating and turbidimetric methods.
3. Isolation of plasmid of *E. coli* by alkaline lysis method and its quantitation spectrophotometrically.
4. Restriction digestion of plasmid and estimation of the size of different DNA fragments.
5. Cloning of a DNA fragment in a plasmid vector, transformation of the given bacterial population and selection of recombinants.
6. Demonstration of DNA sequencing by Sanger's dideoxy method.
7. Demonstration of protoplast fusion employing PEG.
8. Organogenesis and somatic embryogenesis using appropriate explants and preparation of artificial seed.
9. Co-cultivation of the plant material (e.g. leaf discs) with *Agro bacterium* and study GUS activity histo-chemically.

*Additional Lab course of selected elective paper.

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SEMESTER IV

Paper I (BOT401): Plant Breeding and Biostatistics

PLANT BREEDING

Unit 1

1. The role of plant breeding – historical aspects and genetic basis; mode of reproduction in relation to breeding methods, breeding techniques; method of plant breeding in relation to self-pollinated and cross pollinated plants.
2. Hybridization: Interspecific and inter generic; pure line; back cross hybridization; self incompatibility system.
3. Heterosis: Its genetic and physiological basis.

Unit 2

1. Breeding for resistance to diseases, physiological races.
2. Role of mutation in crop improving and evolution.
3. Plant breeding work done in India with special reference to potato, paddy, wheat and sugarcane.
4. Maintenance of collection, registration of varieties, seed production, testing, certification and distribution.

BIOSTATISTICS

Unit 3

1. Biostatistics and its application in life sciences.
2. Methods of representation of statistical data and measurements of central tendencies.

Unit 4

1. Correlation, regression, curve fitting and ratio of variation.
2. Probability and use of binomial trials.
3. Test of significance, χ^2 , 't' and 'F' tests.

SUGGESTED READINGS:

Plant Breeding:

1. Harihar, Ram, 1997. Vegetable Breeding: Principles and Practices. Jagminder Book Agency, New Delhi
2. Hill, J. 1997. Quantitative and Ecological Aspects of Plant Breeding, Jagminder Book Agency, New Delhi.
3. Kapoor, R.L. 1997. Plant Breeding and Crop Improvement. 2 Vols
4. Mc Donald, M.B. 1997. Seed Production: Principles and Practices.
5. Poehlman, J.M and D. Borthakur, 1969. Asian Field Crops. Oxford and IBH Publ. New Delhi.
6. Poehlman, J.M and Sleeper, D.R. 1995. Breeding Field Crops. Panima Publ. House, New Delhi.
7. Sharma, J.R. 1994. Principles and Practice of Plant Breeding. Tata McGraw Hill Publ. Co. Ltd., New Delhi.
8. Singh, B.D. 2002. Plant Breeding Principles and Methods. Kalyani Publ. New Delhi.

Biostatistics:

1. Bliss, C.I. 1967. Statistics in Biology. 2 Vols. Mc Graw Hill, New York.
2. Downey, N.M and Heath, R.W. 1960. Basic Statistical Methods, Harper International.
3. Rayner, A.A. 1969. A first Course in Biometry for Agriculture Students. Peitermaritzburg. University of Natal Press.
4. Singh, R.K. 1994. Biometrical Techniques in Breeding and Genetics. Bishen Singh Mahendra

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Pal Singh, Dehradun.

5. Watt, T. 1993. Introductory Statistics for Biology Students. Narosa, New Delhi.

6. Winer, B.J. 1962. Statistical Principles in Experimental Design. Mc Graw Hill, New York.

Paper II (BOT402): Conservation Biology

Unit 1

1. Conservation: The basic concept, History of conservation biology.
2. The origin and evolution of organism; genetic plasticity a factor in evolution; the invasion of unoccupied ecological niches.
3. Patterns of biodiversity: Global and regional patterns of biodiversity, Distribution, Gradients, Magnitude of biodiversity, Hotspots, keystone species, effects of species deletion and addition on maintenance of biodiversity.
4. Uses of biodiversity: food, fodder, timber, fibre, medicine, etc.; biodiversity based products and industries; wild relatives of cultivated plants; scientific role of biodiversity.

Unit 2

1. Threats to biodiversity: Habitat loss and fragmentation, Genetic drift, Inbreeding, Disturbance, Pollution, Climate Change, Overexploitation, Invasive Species, Disease.
2. Global environmental problems: Global warming, ozone depletion, desertification.
3. Extinction to species: Susceptibility to extinction causes of species extinction, endangered species, Red and Green Data Books.

Unit 3

1. Environmental Impact Assessment (EIA) origin and development, development in India, Purpose and aims of EIA, Core values and principles, EIA process, components of EIA, Participants in EIA process, Impact identification methods.
2. Conservation of Biological diversity: Genetic principles in conservation, biodiversity assessment and inventory.
3. Survey and monitoring of biological resources: sampling population for biological conservation; Collection and analysis of inventory data, criteria on choice of species for conservation. People participation, biodiversity registers and their maintenance.

Unit 4

1. Conservation of energy resources; conservation and maintenance of non-renewable fossil fuel resources; Conservation of biodiversity based renewable energy resources.
2. Protected Area Network, PAN with special reference to Uttarakhand and India.
3. Indian biodiversity and its conservation: International efforts for conserving biodiversity viz., CITES, CBD, IUCN, MAB, UNEP, UPOV (Union for the Protection of New Plant Varieties), WTO etc.), International treaty on Plant Genetic Resources, International Agreement for conserving marine biodiversity, Wetland conservation, Rangeland management.
4. Ecosystem restoration, Strategies and plans for restoration, Passive restoration (natural recovery) and active restoration.
5. Wildlife (Protection) act 1975, Forest (Conservation) Act 1980, Environment (Protection) Act 1986, Wildlife (Protection) Amendment Act 1991, Biodiversity Act 2003, etc.

SUGGESTED READINGS

1. Cain, M.L., Bowman, W.D. & Hacker, S.D. 2008. Ecology. Sinauer Associates, Inc.
2. Dhar, U. 1993 (Ed.). Himalayan Biodiversity: Conservation Strategies, Gyanodaya Prakashan, Nainital

3. Groombridge, B. and Jenkins, M.D. 2000. Global Biodiversity. Earth's living resources in the 21th century, UK. World conservation Monitoring Center. Pp 246.
4. Hunter, M.L.J. 1990. Wildlife, forest and forestry: Principals of Managing forests for biological diversity. Prentice Hall, Englewood, Cliffs, New Jersey. 370 pp.
5. Hunter, Jr, M.L. & Gibbs, J.P. 2006. Fundamentals of Conservation Biology. Wiley Blackwell.
6. Pullin, A Conservation Biology. Cambridge University Press, The Edinberg Building, Cambridge CB22RU, UK.
7. Primack, R.B. 2006. Essentials of Conservation Biology. Sinauer Associates, Inc.
8. Primack, R.B. 2008. A Primer of Conservation Biology. Sinauer Associates, Inc.
9. Singh, J.S., Singh, S.P. & Gupta, S.R. 2007. Ecology, Environment and Resource Conservation. Anamaya Publishers, New Delhi.
10. Western, D. and Pearl, M.C. 1989. Conservation for twenty-first century. Oxford University Press, Oxford UK. Pp 109-120.

Paper III (BOT403): In-vitro technologies and industrial applications

Unit 1

1. Micropropagation (via organogenesis and embryogenesis) of floricultural, agricultural and pharmaceutical crops: Orchids, Chrysanthemum, Gerbera, Carnation, Anthurium, Bamboos, Spilanthes, Stevia, Psoralea, Chickpea and elite tree species of national importance.
2. Production of virus free plants through meristem culture in orchids and fruit trees.
3. Germplasm conservation in vitro.

Unit 2

1. Variations: Somaclonal and gametoclonal variations; spontaneous, genetic and epigenetic variations.
2. Culture systems: Differentiated, undifferentiated, physiological, biochemical and molecular role of minerals and growth regulators in understanding differentiation of organs under in vitro conditions.
3. Problems in Plant Tissue Culture: contamination, phenolics, recalcitrance.
4. Problems in establishment of regenerated plants in nature: hardening, association of mycorrhiza and rhizobia.

Unit 3

1. Factors responsible for in vitro and ex vitro hardening.
2. Use of bioreactors in secondary metabolite production and scale up automation of plant tissue culture.

Unit 4

1. Recent applications of tissue culture techniques and biotechnology in the introduction of economically important traits in horticultural, agricultural and medicinal plants.
2. Interactions, training and workshops in Biotech industries and placements.

SUGGESTED READINGS:

1. Herman EB (2008) Media and Techniques for Growth, Regeneration and Storage 2005-2008. Agritech Publications, New York, USA.
2. Pierik RLM (1999) In Vitro Culture of Higher Plants. Kluwer Academic Publishers.
3. Prakash J & Pierik RLM (1991) Horticulture - New Technologies and Applications (Current Plant Science and Biotechnology in Agriculture). Kluwer Academic Publishers.

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4. George EF, Hall MA and Geert-Jan De Klerk (2008). Plant Propagation by Tissue Culture (3rd Edition), Springer, Netherlands.
5. Journals: Plant Cell, Tissue and Organ Culture, Plant Cell

Lab Course:

1. Development of regeneration protocols employing direct and indirect organogenesis / somatic embryogenesis in economically important horticultural and/or medicinal plants.
2. Control of phenolics in recalcitrant tissues under culture conditions.
3. Study of various physico-chemical factors (pH, light, hormones, etc.) on invitro growth and development of tissues or organs, rooting of regenerants, in vitro and ex vitro hardening, potting and acclimatization in natural conditions.
4. Shoot-tip meristem culture for raising virus-free plants in tomato / tobacco.
5. Agrobacterium rhizogenes mediated development of hairy root cultures.
6. Isolation of bioactive compounds from medicinal plants using column chromatography and TLC.
7. Preparation of synthetic seeds for germplasm conservation using somatic embryos or other propagules.

ELECTIVE PAPERS

Paper IV (a) (BOT404/E1): Forest Ecology

Unit 1

1. Forests, forestry and man: Definition, forests in geological ages, forests in prehistoric era, shifting cultivation, forests in historical time, scientific forestry, forest policy, natural forest policy, private forest policy, planned forest development, forestry education in India.
2. Essential elements of forest ecology: Extent and boundaries, physical features, geology, river system, soil, land-use pattern, role in country's economy, forests and wild land.

Unit 2

1. Forests and trees: Locality factors of the forests, forest influences, forest composition, stand structure, dynamics and growth, classification, forest types and their distribution, species diversity
2. Wild Life: Species and distribution, Sanctuaries, Biosphere reserves, wild life and recreation.
3. Forest conservancy and Potential Productivity: Soil, Water relation and nutrition, soil erosion and conservation, potential productivity of forests, site quality evaluation.

Unit 3

1. Forest Conservation and Management:
 - i) Impact of deforestation on soil and water, Role of fire: type, extent and cause of fire, fuel load, fire and different forest types of Himalaya.
 - ii) Forest resource management and forest resource information system.

Unit 4

1. Forest cover in India-State of Art, Ground inventory. Application of Remote Sensing and Geographic Information System (GIS) in Land cover mapping, Vegetation and forest type maps.
2. Environmental Impact Assessment: Maintenance and conservational policies such as Joint Forest Management (JFM) and Agroforestry in the region.

Lab Course:

1. To undertake studies on stand analysis, dominance, diversity and similarity coefficient.

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2. To make studies on gradient analysis.
3. To identify different forest types of the locale.
4. Calculate the Pateron week index of any natural forest stand.
5. Study ordination and continuum of different forest stands.
6. Study interspecific Association in forest stands using Plot less technique.
7. Calculate analytical and synthetic characters of different forest stands.
8. Prepare profile diagram of forest stands using Single Plot Method.

SUGGESTED READINGS:

1. Bir, S.S. and Chatha, G.S. 1988. Forest Vegetation Characteristics of Indian Hills. Today and Tomorrow's Printers & Publ., New Delhi.
2. Dwivedi, A.P. Forestry in India. Jugal Kishor and Company, Dehradun.
3. Misra, R. Ecology Work Book. Oxford & IBH Publishing Co. New Delhi.
4. Mishra, R. and Gopal, B. Recent Advances in Tropical Ecology: Part I & II. International Society for Tropical ecology, Varanasi.
5. Negi, S.S. 1983. Forest Ecology. Bishen Singh Mahendra Pal Singh, Dehradun.
6. Puri, G.S., Gupta, R.K., Meher-Homji, V.M. and Puri, S. 1989. Forest Ecology: Plant Form, Diversity, Communities and Succession. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi.
7. Puri, G.S., Meher-Homji, V.M., Gupta, R.K. and Puri, S. Forest Ecology: Vol I & II. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi.
8. Singh, G. 1987. Forest Ecology of India. Rawat Publications, Jaipur
9. Singh, J.S. and Singh, S.P. 1992. Forests of Himalaya. Consul Book Depot. Gyanodaya Prakashan, Nainital, India.
10. Singh, J.S. Singh, S.P. and Gupta, S.R. 2005. Ecology, Environment and Resource Conservation. Anamaya Publ., F-154/2 Ladosarai, New Delhi- 110 030
11. Singh, M.P. and Vishwakarma, V. 1997. Forest Environment and Biodiversity. Daya Publ. House, Delhi.
12. Wareing, R.H. and Schlesinger, W.H. 1985. Forest Ecosystems: Concepts and Management. Academic Press, New York.

Paper IV (b) (BOT404/E2): Industrial Microbiology

Unit 1

1. Introduction to industrial microbiology-Range of fermentation processes, microbial biomass, microbial enzymes, microbial metabolites and transformation processes.
2. Selection and strain improvement strategies - Isolation of industrially important microorganisms - primary and secondary screening. Detection and assay of fermentation products - physical-chemical, biological assays. Preservation of microbes -storage at reduced temperature, storage in dehydrated forms.

Unit 2

1. Types of fermentation - Solid state fermentation and submerged fermentation; batch, continuous and fed batch fermentation, Homo- and heterofermentation. Aerobic and anaerobic fermentation. Static and stirred fermentations. Media for microbial growth and fermentation - Typical media, media formulation; water, energy and carbon source, nitrogen sources, minerals and vitamins, buffers, precursors, metabolic regulators, oxygen requirement.
2. Bioreactors - Brief study on stirred tank fermenter, air-lift fermenter, packed tower fermenter, tray fermenter, rotary drum fermenter. Microbial fermentation- Sterilization -

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media, fermenter, air. Inoculum preparation, inoculation. Aeration, agitation, pH control, temperature control, antifoam agents. Process parameter optimization: One factor at a time and statistical optimizations (brief study only). Scale up of fermentation (lab scale, pilot plant, industrial scale).

Unit 3

1. Downstream processing- Separation of microbial cells - Filtration, precipitation, centrifugation.
2. Cell disruption - liquid shear, freezing-thawing, ultrasonication, osmotic shock, enzyme treatment. Concentrating and purifying the products - ultrafiltration, crystallization, solvent precipitation, reverse osmosis, chromatography. Production of industrially important products

Unit 4

1. Antibiotics - Penicillin, Streptomycin. Amino acids - Lysine, Glutamic acid. Enzymes - Amylase, Cellulase, Pectinase. Organic acids - Lactic acid, Acetic acid, Gluconic acid. Biofuels - Bio-ethanol, Bio-butanol. Biopolymers - PHB, PLA. Alcoholic beverages - Wine, Beer. Microbial cells - SCP.
2. Baker's yeast. Immobilization of cells and enzymes- Methods of cell and enzyme immobilization. Applications of immobilized cells and enzymes.

Lab Course

1. Screening and isolation of microbes for production of organic acids and enzymes.
2. Preparation and maintenance of stock cultures (Bacteria and Fungi).
3. Preparation of bacterial inoculum by measuring OD and enumeration of bacterial cells by serial dilution and pour plate (or spread plate) method.
4. Solid state and Submerged fermentation for amylase (or any other enzyme) production and quantification of product by suitable assay methods.
5. Optimization of process parameters for enzyme production in submerged fermentation.
6. Partial purification of amylase (or any other enzyme) produced by microbial fermentation using acetone precipitation.
7. Immobilization of yeast cells and sugar fermentation using immobilized cells.

Suggested readings:

1. Madigan, M.T., J.M. Martink and J. Parker (1997). Brock Biology of Microorganism, Printice hall International, Inc., New, Jersey.
2. Prescott (2000). Microbiology.
3. Cruzezer, W. and A. Cruzezer (1990). A Textbook of Industrial Microbiology.
4. Alexander, M. (1977). Soil Microbiology. John Wiley and Sons, New York.
5. Dubey, R.C. and D.K. Maheshwari (2010). A Textbook of Microbiology. S. Chand and Co. Pvt. Ltd. New Delhi.

Paper IV (c) (BOT404/E3): Ethnobotany

Unit 1

1. Introduction, concept, scope and objectives. Linkage of Ethnobotany with other sciences and disciplines in biology - food and nutrition, medicine, sociological and cultural practices, religions and social costumes and economic relations.
2. Ethnic groups and Ethnobotany: Major and minor ethnic groups of Uttarakhand and their life styles. Forest v/s Ethnic groups.

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Unit 2

1. Methodology of Ethnobotanical studies: Field work, Herbarium, Ancient Literature, Archaeological findings, Temples and sacred places. Protocols. Plants and Tribal medicine: Significance of *Curculigo orchoides*, *Costus speciosus*, *Gloriosa superba*, *Butea monosperma*, *Wrightia tinctoria* and *Pongamia pinnata* in Ethno-medical practices along with a brief note on their habitat and morphology.
2. Medico-ethnobotanical research in Uttarakhand.

Unit 3

1. Different systems of indigenous medicine (Traditional medicine, Ayurveda, Siddha, Unani), Homeopathy and Allopathy. Role of Phytomedicine in modern systems of medicine.
2. Classification of drugs: analytical methods – drug adulteration, drug evaluation, anatomical and phytochemical analysis of crude drugs; preliminary screening, fractionation and separation of different groups of biodynamic compounds and biological evaluation.

Unit 4

1. Phytopharmaceuticals: Drugs of alkaloids, coumarins, volatile oils, tannins, resins and gums. Natural pesticides, antibiotics, allergens and poisonous plants. Economic potential of phytomedicine: potential drug yielding plants and their marketing avenues. IPR and patenting of active principles.
2. Ethnobotany and conservation of plants with special reference to Uttarakhand – mythology and conservation of ecosystems, conservation of selected plant species: sacred groves, forestry and unique ecosystems and their ethnobiological values, plants and animals in art, tradition and ethnography: methodologies in ethno-botanical research

Lab Course:

1. Preparation of the herbarium specimen medicinally important plants.
2. Listing of plants used by villagers and on the basis of their local use to place them in the field of the study of ethnobotanical research.
3. Study of Economic potential of Phytomedicine and role of phytomedicine in modern system of medicine.

Suggested Readings:

1. S.K. Jain, Manual of ethnobotany, scientific publishers, Jodhpur, 1995.
2. S.K. Jain (ed.) Glimpses of Indian Ethnobotany, Oxford and I B H, New Delhi, 1981.
3. S.K. Jain, (ed.) Methods and approaches in ethnobotany. Society of Ethnobotanists, Lucknow, India, 1989.
4. S.K. Jain, Contributions of Indian ethnobotany. Scientific Publishers, Jodhpur, 1990.
5. Colton C.M. Ethnobotany-Principles and applications. John Wiley and sons-Chichester, 1997.
6. Rama R. N. and A.N. Henry, The ethnobotany of Eastern Ghats in Andhra Pradesh, India. Botanical Survey of India, Howrah, 1996.
7. Rajiv K. Sinha, Ethnobotany-the renaissance of traditional Herbal Medicine-I N A- Shree publishers, Jaipur, 1996.

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Sinha

Paper IV (d) (BOT404/E4): PALYNOLOGY AND POLLINATION BIOLOGY

Unit 1

1. General Introduction, microsporogenesis, microspore tetrads and polarity of spores and pollen grains.
2. Pollen wall development and pollen chemistry, Chemical nature of sporopollenin, development of pollen wall, Ubisch body, pollen wall proteins, origin and formation exineless pollen grains; pollen expressed and pollen specific genes.

Unit 2

1. Spore-pollen morphology: Symmetry, shape, size, aperture patterns, NPC System for numerical expression of apertural details, exine stratification, surface structures and sculptures of sporoderm; LO-analysis and edge-analysis.
2. Paynotaxonomy: Systematic palynology, identification key and evolutionary trends among pollen grains based on palynotaxonomical works.
3. Aeropalynology with reference to allergy: Aeroallergens, introductory idea of Immune System with special reference to IgE. Study of airspora, identification of allergic taxa by *in vivo* and *in vitro* tests with spore-pollen extracts, chemical nature of exine-borne allergens, allergic taxa of North-West Himalaya.

Unit 3

1. **Melissopalynology:** Indian species of honey bees, importance of pollen grains as constituent of bee-bread, pollen-collecting mechanism of honey bees, analysis of pollen load and honey sample in understanding bee forage, objectives of melissopalynological studies, important bee plants of North- West Himalaya.
2. **Palaeopalynology:** Introductory idea about palaeopalynological remains, significance of palaeopalynology.

Unit 4

1. Forensic palynology: Definition and significance, a few well-known case studies.
2. Pollination Biology: Pollen dispersal units; pollination types, contrivances for cross- and self-pollination; pollen vectors, pollination modes and flora organization, Pollen viability and storage, evolutionary trends in pollination modes. Breeding systems, incompatibility and compatibility control with reference to pollen-pistil interactions and pollen biotechnology.

Lab Course

1. Pollen morphological studies of some pterodophytes, gymnosperms, and angiosperms representing different morphological types using acetolysis / alkali maceration method.
2. Extraction of pollen grains from honey sample and study of the frequency of different morpho-types.
3. Study of *in vivo* and *in vitro* germination of pollen grains.
4. Morpho-anatomical study of stigma and style.
5. Study of the growth of pollen tube through stigma and style.
6. Study of allergy producing pollen morpho-types.

SUGGESTED READINGS:

1. Crane, Eva; Walker, Penelope and Day Rosemary. 1984. Directory of Important World Honey Sources: International Bee Research Association, London.
2. Erdtman, G. 1952. Pollen Morphology and Plant Taxonomy, Angiosperms; Almquist and Wiksell, Stockholm.

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3. Knut Segrel, Johnson Iverson. 1975. Text book of pollen analysis 3rd edition. Blackwell Publ.
4. Nair, P.K.K. 1966. Essentials of Palynology; Asia Publication House Lucknow.
5. Woodhouse, R.P. 1935. Pollen Grains; Hafner Publication Co.

Paper IV (c) (BOT404/E5): Seed Pathology

Unit 1

1. Introduction, terminology and historical development, seed health and its importance.
2. Kinds of seed borne pathogens: fungi, bacteria, viruses, viroides and nematodes.
3. Types of damage caused by the seed borne fungi to seeds and crops.

Unit 2

1. Nature of seed infection. Systemic infection through flower, fruit and seed stock. Penetration through seed coat, natural openings and inflicted openings.
2. Longevity of seed borne pathogens. Factors influencing longevity.

Unit 3

1. Epiphytology of seed borne diseases, monocyclic and polycyclic diseases
2. Detection of seed borne pathogens, objectives of seed health testing. Testing methods for seed borne fungi, seed borne bacteria, seed borne viruses and seed borne nematodes.

Unit 4

1. Study of seed borne diseases of certain specific crops, cereals, millets, pulses, oil crops, fibre crops, and vegetable and timber crops
2. Control of seed borne pathogens: selection of seed production areas, crop management, seed treatment, certification, plant quarantine and disease resistance.

Lab Course

1. Isolation and inoculation of mycorrhiza.
2. Study of seed borne pathogen. Description of pathogen, symptoms and section cutting.
3. Isolation of some important pathogens.
4. Procedure of equipments uses.
5. To establish a plant disease clinic in the department for advise to local people.

SUGGESTED READINGS

1. Neegard P, 1977. Seed Pathology Vol I and II. MacMillan Press, London
2. Suryanarayan, D. 1978. Seed Pathology. Vikas Publ. House, Pvt. Ltd. New Delhi.
3. Jha, D.K. 1995. A Text Book of Seed Pathology. Vikas Publ. House. Pvt. Ltd. New Delhi.
4. Agarwal, V.K. 1978. Principles of Seed Pathology. In (ed.) James B.S. Sindair. CRC Press, II Edition.
5. Desai, B.B. Seed Handbook. CRC Press.
6. Singh, Gurnam, Seed Pathology. Pointer Publisher, Jaipur.
7. Singh, T. Seed Technology and Seed Pathology. Pointer Publisher, Jaipur.
8. Nene, Y.L. and Agarwal, V.K. 1978. Some seed borne diseases and their control. ICAR, New Delhi

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Lab Course : BOT40P*

1. Emasculation, bagging and hand pollination techniques to study pollen germination.

Application of common plant breeding techniques

2. Floral biology of local food, pulse, vegetable and horticultural crop

3. To test the goodness of fit and independent assortment using Chi-square method.

4. To study the pattern of regional biodiversity.

5. To study the Hot spots and key stone species.

6. Survey of biological resources.

7. Study of habitat loss with respect to plant species. To observe factors expediting habitat loss viz., floods, forest fires, landslides, natural and anthropological activities.

8. Visits to national parks, sanctuaries and biosphere reserves of Uttarakhand.

9. Visit to ecosystem restoration sites in mined areas in Uttarakhand Himalayas.

10. PTC – Laboratory organization, different sterilization/aseptic technique.

11. Preparation and sterilization of media

12. Callus culture (morphological and internal structure) and suspension cultures (growth curve)

13. Shoot tip, axillary bud, nodal explant culture.

14. Root tip and leaf culture.

15. Protoplast isolation and fusion

16. Somatic embryogenesis and production of artificial seeds.

17. Anther, pollen, ovule culture.

*Additional lab course of selected elective paper.

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04-07-2018



**Sri Dev Suman Uttarakhand University,
Badshahithaul (Tehri Garhwal)**

Department of Zoology

B.Sc. (Zoology)

Course Contents & Syllabus

Agarwal

**Sri Dev Suman Uttarakhand Vishwavidhyalay,
Badshahithaul, Tehri Garhwal, Uttarakhand 249 199.**

B.Sc. Course in Zoology

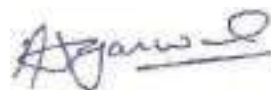
Sri Dev Suman Uttarakhand Vishwavidhyalay, Badshahithaul,
Tehri Garhwal, Uttarakhand 249 199.

Syllabus: Theory

The B.Sc. examination will be spread over three years (six semester). There shall be two theory papers and one practical examination every semester. Each theory paper has been divided into four units. Each paper will be of 100 marks (Theory-80, Sessional-20). Likewise, each practical will be of 50 marks (Theory-40, Sessional-10).

Course Contents & Teaching Schedules:

	No. of Lectures	MM
B.Sc. First Year		
1st Semester		
Paper 1 : Non-Chordata	36	100
Paper 2 : Cell Biology & Genetics	36	100
Practical: Based on paper 1 and 2	72	50
2nd Semester		
Paper 3: Chordata	36	100
Paper 4: Taxonomy, Evolution	36	100
Practical: Based on paper 3 and 4	72	50
B.Sc. Second Year		
3rd Semester		
Paper 5: Physiology & Biochemistry	36	
Paper 6: Developmental Biology & Endocrinology	36	
Practical: Based on paper 5 and 6	72	
4th Semester		
Paper 7: Ecology and Environment	36	100
Paper 8: Animal Behaviour & Conservation Biology	36	100
Practical: Based on paper 7 and 8	72	50
B.Sc. Third Year		
5th Semester		
Paper 9: Molecular Biology and Biotechnology	36	100
Paper 10: Microbiology and Immunology	36	100
Practical: Based on paper 9 and 10	72	50
6th Semester		
Paper 11: Economic Zoology	36	100
Paper 12: Biostatistics and Computer	36	100
Practical: Based on paper 11 and 12	72	50

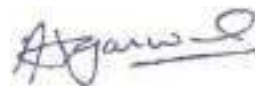


B.Sc. 1st Year (Zoology)-1st Semester
Paper I: Animal Diversity (Non-Chordata)

	No. of Lectures
UNIT-I Protozoa: General characters and classification up to classes; locomotion and nutrition in Protozoa. Porifera: General characters and classification up to classes; Canal system in sponges.	9.0
UNIT-II Coelenterata: General characters and classification up to classes; Polymorphism in Coelenterates; Corals and coral reefs. Helminthes: General characters of Nematelminthes and Platyhelminthes; Life history of <i>Ascaris lumbricoides</i> and <i>Taenia solium</i> and their parasitic adaptations.	9.0
UNIT-III Annelida: General characters and classification up to classes; Metamerism in Annelida; Trochophore larva and its significance. Arthropoda: General characters and classification up to classes; Zoological importance of <i>Peripatus</i> and <i>Limulus</i> . Metamorphosis in Insects.	9.0
UNIT-IV Mollusca: General characters and classification up to classes; Torsion in Gastropoda; Pearl formation Echinodermata: General characters and classification up to classes; Water vascular system in star fish; Echinoderm larvae and their significance.	9.0

Books Recommended:

1. Kotpal, Agrawal & Khetrapal: Modern Text-book of Zoology, Invertebrates.11/E. Rastogi publication.
2. Marshall & William: Text book of Zoology, Vol I (Parker & Haswell, 7th ed.) Macmillan,.
3. Nigam: Biology of Non-Chordates, Nagin Chand,.
4. B.Sc. Zoology Series -Animal Diversity ,Tata McGraw Hill Edu Pvt. Ltd. N.Delhi
5. Jordan E.L. et al.: Invertebrate Zoology. S.Chand & Company Ltd.
6. Barnes: Invertebrate Zoology (4th ed.), Holt-Saunders.
7. Barrington: Invertebrate Structure and Function, Nelson.
8. Iyer: A Manual of Zoology, Part I. Visawanathan,



**B.Sc. 1st Year (Zoology)-1st Semester
Paper 2: Cell Biology and Genetics**

	No. of Lectures
UNIT-I Generalized structure of Pro- & Eukaryote cell. Elementary knowledge of the structure & function of plasma membrane. Introduction to the organelles constituting endo-membrane system (Endoplasmic reticulum, Golgi complex, Lysosome).	9.0
UNIT-II Nucleus & nucleolus; Ribosome; Mitochondria. Introduction to cytoskeleton. Cell Division-Mitosis & Meiosis. Basic features of Cell cycle; Elementary idea of cell transformation and cancer.	9.0
UNIT-III Mendel's law; Exceptions to Mendel's law. Incomplete dominance and Co-dominance, Multiple alleles, Lethal alleles, Epistasis. Sex-linked inheritance; Extra chromosomal inheritance.	9.0
UNIT-IV Linkage & Crossing over. Sex determination. Chromosome structure; Euchromatin; Heterochromatin; Histones. Polytene & lampbrush chromosomes, Eugenesis,	9.0

Books Recommended

1. Alberts et al.: Molecular Biology of the Cell, Garland Pub., New York, 1989.
2. Strickberger: Genetics, Prentice Hall, 1996.
3. DeRobertis & DeRobertis: Cell & Molecular Biology, 1996
4. Gupta P.K. : Cell And Molecular Biology, Rastogi Publications
5. Sarkar B : Cell Structure and Function, Medtech
6. Verma & Agarwal: Cell Biology, genetics, Molecular Biology. S.Chand & Company

PRACTICAL SYLLABUS B.Sc. 1st SEMESTER (Zoology)

A. Non-Chordata:

- Kingdom Protista: Amoeba, Euglena, Plasmodium, Paramecium
Phylum Porifera: Sycon (including T.S. and L.S.), Hyalonema, and Euplectella
Phylum Cnidaria: Obelia, Physalia, Aurelia, Tubipora, Metridium
Phylum Platyhelminthes: Liver Fluke, Taenia solium and Study of its life history stages
Phylum Nematelminthes: Male and female Ascaris lumbricoides
Phylum Annelida: Aphrodite, Nereis, Pheretima, Hirudinaria
Phylum Arthropoda: Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra, Julus, Apis, Peripatus
Phylum Mollusca: Chiton, Dentalium, Pila, Unio, Loligo, Sepia, Octopus
Phylum Echinodermata: Pentaceros, Ophiura, Echinus, Cucumaria and Antedon

An "animal album" containing photographs, cut outs, with appropriate write up about the above mentioned taxa.

B. Cell Biology and GENETICS:

1. Cell Structure and Cell Division- Prepared slides/photographs
2. Preparation of giant chromosome
3. Preparation of onion root tip for the stage of mitosis
4. Using suitable examples of Mendelian Inheritance and gene interactions verify the results through Chi-square test.
5. Study of Linkage, recombination, gene mapping using the data.
6. Study of Human Karyotypes (normal and abnormal).

Distribution of marks:

Duration 4 hrs.

1. Spotting (10) (Protozoa to Echinodermata)	20
2. Exercise on Cell Biology	05
3. Exercise on Genetics	05
4. Record and Collection	05
5. Viva Voice	05
6. Sessional Marks	10
Total	50

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**B.Sc. 1st Year (Zoology)-2nd Semester
Paper 3: Chordata**

	No. of Lectures
UNIT- I Protochordates: General features and Phylogeny of Protochordates. Body organization of <i>Balanoglossus</i> , <i>Herdmania</i> and <i>Amphioxus</i> .	9.0
UNIT- II Agnatha: General features of Agnatha and classification of cyclostomes up to Classes, Comparison between Lampreys and Hagfishes. Pisces: General features and Classification up to orders; Scales and fins of fishes, Hill stream adaptations	9.0
UNIT- III Amphibia: General features and Classification up to orders; Parental care; Neoteny Reptiles: General features and Classification up to orders; Poisonous and non-poisonous snakes; Biting mechanism in snakes; Venum and antivenum.	9.0
UNIT- IV Aves: General features and Classification up to orders; Feathers in Birds; Adaptations for aerial mode of life; Mammalia: Origin of mammals; General organization, distribution and affinities of Prototheria, Metatheria and Eutheria; Aerial and aquatic adaptations in mammals.	9.0

Books Recommended:

1. Pandey B.N. and Mathur V. Biology of Chordates, PHI Learning, 2018
2. R.L. Kotpal: Modern Text-book of Zoology, Vertebrates. Rastogi Publication.
3. E.L. Jordan and P.S. Verma: Chordate Zoology. S. Chand & Co. Ltd.
4. Hildebrand: Analysis of Vertebrate structure.
5. Romer & Parsons: The Vertebrate Body, Saunders.

B.Sc. 1st Year (Zoology) - 2nd Semester
Paper 4: Taxonomy and Evolution

	No. of Lectures
UNIT-I Taxonomy: Definition & scope; relationship with Systematic Zoological nomenclature: Binominal & Trinominal; ICZN. Components of classification: Linnaean hierarchy. Concepts of species: Typological, Nomenclistic & Biological	9
UNIT-II Geological distribution of animals, period of evolution and extinction of major groups. Direct Evidences of Evolution: Type of Fossils & fossilization. Dating of fossils. Significance of fossil record. Evolution of Horse.	9
UNIT- III Evolutionary theories: Lamarckism, Darwinism, Neo-Darwinism; Processes of Evolutionary Change: Organic variations; Isolating Mechanisms; Natural selection (Example: Industrial melanism); Types of natural selection (Directional, Stabilizing, Disruptive), Artificial selection	9
UNIT-IV Species Concept: Biological species concept (Advantages and Limitations); Modes of speciation (Allopatric, Sympatric), Macro-evolutionary principles (example: Darwin's Finches), Role of extinction in evolution	9

Books Recommended:

1. Ashok Verma - Animal Taxonomy
2. Ernst Mayr- Principals of Systematic
3. Simpson- Principals and Practices of Animal Taxonomy
4. Kapoor- Theory and Practices of Animal Taxonomy, Oxford & Ibh
5. Strickberger: Evolution, CBS Publ. 1994.
6. Douglas, J. Futuyma. *Evolutionary Biology*. Sinauer Associate (1997)
7. Jain P.C. : Paleontology, Vishal Publ. Co.
8. Arora M.P.: Organic Evolution, Himalaya Publ.

PRACTICAL SYLLABUS B.Sc. 2nd SEMESTER (Zoology)

A. Chordata:

Protochordata: *Balanoglossus*, *Herdmania*, *Branchiostoma*, *Agnatha*: *Petromyzon*
Pisces: *Sphyrna*, *Pristis*, *Torpedo*, *Labeo*, *Exocoetus*, *Anguilla*, *Tor putitora*, Hill stream fishes
Amphibia: *Ichthyophis/Ureotyphlus*, *Salamandra*, *Bufo*, *Hyla*, *Axolotal larva*
Reptilia: *Chelone*, *Hemidactylus*, *Chamaeleon*, *Draco*, *Vipera*, *Naja*, *Crocodylus*, *Gavialis*
Key for Identification of poisonous and non-poisonous snakes
Aves: Study of six common birds from different orders
Mammalia: *Sorex*, *Bat*, *Funambulus*, *Loris*,

An "animal album" containing photographs, cut outs, with appropriate write up about the above mentioned taxa.

B. COMPARATIVE ANATOMY

1. Osteology:

- a. Disarticulated skeleton of fowl and rabbit
- b. Carapace and plastron of turtle /tortoise
- c. Mammalian skulls: One herbivorous and one carnivorous animal.

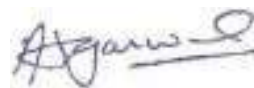
C. EVOLUTION:

1. Study of fossil evidences from plaster cast models and pictures
2. Study of homology and analogy from suitable specimens/ pictures and charts:
3. Phylogeny of horse with diagrams/ cut outs of limbs and teeth of horse ancestors
4. Darwin's Finches with diagrams/ cut outs of beaks of different species
5. Visit to Natural History Museum, submission of report

Distribution of marks:

Duration 4 hrs.

1. Spotting (10) (Protochordate to Mammals, Bones)	20
2. Exercise on Evolution	05
3. Permanent slide making (Fish scale,)	05
4. Record and Collection	05
5. Viva Voice	05
6. Sessional Marks	10
Total	50



Paper-5 Animal Physiology and Biochemistry

	No. of Lectures
UNIT- I	
Digestion: Intracellular and Extracellular digestion. Digestion and absorption of Carbohydrates, Lipids and Proteins. Respiration: Pulmonary ventilation, Respiratory volumes and capacities,. Transport of Oxygen and Carbon dioxide in Blood. Dissociation of oxyhaemoglobin,	9
UNIT- II	
Circulation: Composition of blood; Blood coagulation; Structure of Heart; Origin and conduction of the cardiac impulse, Cardiac cycle. Excretion: Structure of nephron; Physiology of urine formation.	9
UNIT- III	
Nervous system: Types of neurons; Myelinated and non-myelinated nerve fibres. Initiation and conduction of nerve impulse; Resting and action potential; Synapse and chemical transmission. Muscles: Types of muscles; Ultrastructure of skeletal muscles; Molecular and Chemical basis of muscle contraction; Brief idea of tetanus and fatigue.	9
UNIT – IV	
Carbohydrates Metabolism: Glycolysis, Kreb's Cycle, Gluconeogenesis, Glycogenesis and Glycogenolysis; Lipids: Biological significance, structure and classification. Proteins: Transamination, Deamination and Urea Cycle Enzymes: Mechanism of enzyme Action, Kinetics, Inhibition and Regulation.	9

Books recommended:

1. Singh & Neeraj: Graduate Animal Physiology & Biochemistry, Vishal Publ
2. Prosser and Brown: Comparative Animal Physiology, Wiley.
3. Nielson: Animal Physiology, Cambridge.
4. Jain A.K: Textbook Of Physiology 6/E, Avichal Publishing Company
5. Conn and Stumpf: Outlines of Biochemistry. John Wiley.
6. Pandey B N: B.Sc. Zoology Series-Biochemistry, Physiology, Endocrinology; Tata McGraw Hill Edu Pvt. Ltd. N. Delhi

B.Sc. 2nd Year (Zoology)- 3rd
Semester
Paper-6 Developmental biology and Endocrinology

	No. of Lectures
UNIT- I Gametogenesis: Spermatogenesis in mammals, Morphology of mature mammalian spermatozoon: Oogenesis in mammals, Vitellogenesis in birds. Fertilization: external (amphibian), Internal (mammals), Block to polyspermy.	9
UNIT- II Early Development of Frog and Human: types of egg; patterns of cleavage; role of yolk during cleavage; Morphogenetic movements; Development up to formation of gastrula. Fate Map, Fate of germ layers. Neurulation in frog embryo, Extra embryonic membranes,	9
UNIT- III Implantation of embryo in human; Types of placenta on the basis of histology; Formation of human placenta and its functions. Fundamental process in development (brief idea): gene activation, determination, Elementary concept of primary organizer; Induction. Differentiation and organogenesis of vertebrate eye. Metamorphic events in frog life cycle and its hormonal regulation	9
UNIT – IV Basic idea of endocrine, paracrine & autocrine secretion. Mechanism of action of hormones. Structure and function of Pituitary, Thyroid, Adrenal, Pancreas, Testes and ovary. Hormonal control of menstrual cycle	9

Books recommended:

1. Jain P C . Development Biology.
2. Gilbert, Developmental Biology. 3rd ed. Sinauer, 1991.
3. Berril: Developmental Biology, McGraw-Hill. Indian ed. 1974.
4. Laycock, J.F. and Wise, P.H.: Essential Endocrinology. Oxford University Press.
5. Hadley, M.E.: Endocrinology. Pearson Education Pvt. Ltd. Singapore.

**PRACTICAL SYLLABUS of B.Sc. 3rd SEMESTER
(Zoology)**

A. Physiology

1. Preparation of hemin crystals
2. Estimation of Haemoglobin percentage
3. Blood group test
4. Examination of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage etc.

B. BIOCHEMISTRY

1. Identification of unknown carbohydrates in given solutions (Starch, Sucrose, Lactose, Galactose, Glucose, Fructose)
2. Colour reactions to identify functional group in the given solution of proteins
3. Study of activity of salivary amylase under optimum conditions

C. DEVELOPMENTAL BIOLOGY and Endocrinology

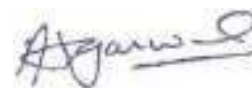
1. Frog - Study of developmental stages - whole mounts and sections through permanent Slides- cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole-external and internal gill stages.
2. Study of the different types of placenta- histological sections through permanent slides or photomicrographs.
3. Study of placental development in humans by ultrasound scans.
4. Examination of gametes -sperm and ova (frog/mammals) through permanent slides or photomicrographs.
5. Examination of histological section of Pituitary, Thyroid, Parathyroid, Pancreas, Adrenal, Testes, Ovary.

Distribution of marks:

Duration 4 hrs.

7. Spotting (10) (Histology, Endocrine glands and Embryology)	20
8. Exercise on Physiology	05
9. Exercise on Biochemistry	05
10. Record and Collection	05
11. Viva Voice	05
12. Sessional Marks	10

Total **50**



**B.Sc. 2nd Year (Zoology)- 4th
Semester
Paper 7: Ecology and environment**

	No. of Lectures
UNIT-I Ecology: Definition, scope and importance, Introduction to laws of Limiting factors: Liebig's law of the minimum, Shelford's law of tolerance. Factor interaction. Biogeochemical cycles: Concept and types of biogeochemical cycle (Water, Carbon, Nitrogen and Phosphorus cycle)	9
UNIT-II Ecosystem concept: Component & types (Grassland, Forest, Pond, River); Abiotic, biotic & edaphic factors and their interdependence, Energy flow in ecosystem. Primary and secondary productivity. Food chains, food web and ecological pyramids,	9
UNIT-III Population: Definition; Biotic potential; Density, Natality, Mortality & population growth curves; Carrying capacity. Community: Definition, concept and characteristics; Density, Dominance; Diversity and stratification.	9
UNIT-IV Environmental pollution: Definition, Types, Sources & effect (Air, Water, solid waste & Radioactive pollution). Green house effect, Climate change, Acid rain, Ozone layer depletion, Environmental Impact assessment	9

Books recommended:

1. Odum, E.P.: Fundamentals of Ecology, Saunders Co. Publ. 1971/1993 Indian ed.
2. Chapman & Reiss: Ecology.
3. Smith, R.L.: Ecology & Field Biology.
4. Singh & Kumar: Ecology and Environmental Science, Vishal Publ. Co., 2004.

B.Sc. 2nd Year (Zoology)- 4th
Semester
Paper 8: Animal Behaviour & Conservation Biology

	No. of Lecture s
UNIT I: The science of behaviour: History, scope and terminology. Proximate and ultimate causes of behaviour. Instinct: Definition and Characteristics (sign stimuli and Fixed Action Pattern). Learning behaviour: Definition. Spatial learning. Associative learning, classical conditioning, operant conditioning, language learning. Imprinting. Kin recognition. Instinct versus learning behaviour.	9
UNIT II: Biological rhythms. The Biological Clock. Circadian rhythms and their Synchronization. Seasonal rhythms. Photoperiodism. Communication: Visual, olfactory, accoustic. Chemoreception: Chemicals (pheromones) as signals in insects, fish and mammals. Hormonal Control of behaviour. Cooperation and conflict. Evolution of altruism.	9
UNIT III Conservation Biology: Definition & scope. Concept of biodiversity; Biodiversity as a resource; Biodiversity loss and its Causes. Conservation & Management of Biodiversity. Concept of Protected Areas: <i>Ex-situ</i> & <i>In-situ</i> Conservation. Biodiversity hot spots.	9
UNIT IV India's wildlife: Habitats & Distribution; Protected areas: National Parks & Sanctuaries. National Organizations involved in wild life conservation; Wild life Legislation: Wild life Protection act - 1972, its amendments and implementation; Zoogeography of India. Vertebrate fauna of Garhwal Himalaya (Distribution, habitat preference, adaptive features).	9

Recommended Books:

1. Alcock : Animal behaviour Sinaur Associates, Inc. 1989.
2. Drickamer & Vessey: Animal Behaviour: Concepts, Processes and Methods (2nd ed.)1986
3. Goodenough et al.: Perspectives on animal behaviour. Wiley & Sons, New Youk. 1993.
4. Grier : Biology of animal behaviour, Mosby 1984.
5. M P Arora. Anilam behaviour. Himalayan Publishing house
6. Negi: An introduction to Wildlife Management, 1983.
7. Negi: Himalayan Wildlife: Habitat and Conservation. 1992. Indus Publ. Com., New Delhi.
8. Pullin: Conservation Biology, Cambridge, 2002.
9. Rawat & Agarwal : Biodiversity: Concept, threats and conservation.
10. Sharma, High Altitude Wildlife of India. Oxford 7 IBH Publ. Co. Pvt. Ltd. 1994.

**PRACTICAL SYLLABUS of B.Sc. 4th SEMESTER
(Zoology)**

A. Ecology & Environment

1. Models Based on different aspects of ecology.
2. Population study of available terrestrial and aquatic animals
3. Physico-chemical study of soil and water (pH, DO, Free CO₂, Turbidity etc)
4. Study of an ecosystem, its biotic components and food chains

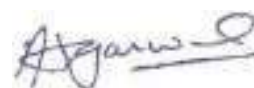
B. Animal Behavior & Conservation Biology

1. Models Based on different aspects of animal behavior.
2. Identification of flora, mammalian fauna, avian fauna, herpeto-fauna through photographs/models
3. Study of Birds Nest showing Nesting Behaviour
4. Experiments related to learning behaviour/conditional learning.

Distribution of marks:

Duration 4 hrs.

13. Spotting (05) (Ecological adaptation, Wildlife, Animal behaviour)	15
14. Exercise on Ecology/ Conservation Biology	10
15. Exercise on Animal Behaviour	05
16. Record and Collection	05
17. Viva Voice	05
18. Sessional Marks	10
Total	50



**B.Sc. 3rd Year (Zoology)- 5th
Semester
Paper-9: Molecular Biology and Biotechnology**

	No. of Lectures
UNIT I Structure of DNA: nucleosides, nucleotides, polynucleotide chain, Watson and Crick DNA double helix model. DNA as genetic material, Packaging of DNA, Types of DNA.	9
UNIT II Enzymes involved in prokaryotic and eukaryotic DNA replication; Mechanism & Type of replication. DNA damage and repair: causes and types of DNA damage, mechanism of DNA repair:	9
UNIT III RNA: Structure and types of RNA, Clover leaf model of tRNA, Transcription in prokaryotes: Prokaryotic RNA polymerase, role of sigma factor, promoter, Initiation, elongation and termination of RNA chains. Processing of pre-mRNA: 5' cap formation, polyadenylation, splicing, rRNA and tRNA splicing.	9
UNIT IV Biotechnology: Definition and scopes; Enzyme used in genetic engineering, Recombinant DNA technology, DNA fingerprinting. A Brief knowledge of PCR and its significance. Biotechnological innovations in the area of medical, agriculture, industrial and forensic sciences.	9

Books recommended:

1. Alberts et al.: Molecular Biology of the cell. Garland Publ., New York.
2. De Robertis- Cell and Molecular Biology
3. Friefelder: Molecular Biology. Narosa Publ. House.
4. Smith: Biotechnology. Cambridge.
5. Verma, P.S. and Agrwal, V. K. Cell Biology, Genetics, Molecular biology, Evolution and Ecology (S. Chand & Co.)

**B.Sc. 3rd Year (Zoology)- 5th
Semester
Paper-10: Microbiology and Immunology**

	No. of Lectures
UNIT – I General account of different groups: Cyanobacteria, fungi, yeast, viruses, Bacteria: Structure, classification, nutrition and reproduction.	9
UNIT-II Microbiology Techniques: Media preparation, sterilization, pure culture and staining techniques. General structure and multiplication of Viruses; General characteristics of bacteriophages.	9
UNIT-III Overview of the immune system- Introduction to basic concepts in immunology, Components of immune system, principles of innate and adaptive immune system; Cells and organs of the immune system: Haematopoeisis, primary and secondary lymphoid organs.	9
UNIT-IV Antigens- Basic properties of antigens, B and T cell epitopes, haptens and adjuvants; Antibodies- Structure, classes and function of antibodies, monoclonal antibodies.	9

SUGGESTED READINGS

1. Delves, Martin, Burton, Roitt, 2006. Roitt's Essential of Immunology. XI Ed., Blackwell Publi.
2. Kindt, Goldsby, Osborne, Kuby, 2006. Immunology. VI Ed. W.H. Freeman and Company.
3. Parija- Text book of Microbiology
4. Tortora- Microbiology: an Introduction

**PRACTICAL SYLLABUS of B.Sc. 5th SEMESTER
(Zoology)**

A. Molecular biology and Biotechnology:

1. Study of Watson & Crick Model of DNA through model/photographs
2. Study of Clover leaf structure of tRNA through model/photographs
3. Isolation of chromosomal DNA from bacterial cells.
4. Agarose gel electrophoresis of genomic DNA & plasmid DNA
5. Preparation of restriction enzyme digests of DNA samples

B. Microbiology and Immunology:

1. Media preparation and sterilization,
2. Inoculation
3. Gram's staining of Bacterial Cell
4. Study of lymphoid organs- Thymus, Spleen etc (by slides or photo micrographs)
5. Study of different classes of antibodies through photographs
6. ABO blood group determination
7. Demonstration of immunoelectrophoresis

Distribution of marks:

Duration 4 hrs.

1. Spotting (05)	15
2. Exercise on Molecular Biology/Biotechnology	05
3. Exercise on Immunology	05
4. Exercise on Microbiology	05
5. Record and Collection	05
6. Viva Voice	05
7. Sessional Marks	10
Total	50

Agarwal

Paper 11: Economic Zoology

	No. of Lectures
UNIT I Elementary knowledge of Sericulture, Apiculture and Lac culture. Elementary knowledge of Poultry Keeping.	9
UNIT II Elementary Knowledge of Fish culture; Genetic improvements in aquaculture industry; Induced breeding and transportation of fish Seed. Elementary knowledge of Animal Husbandry, Preservation and artificial insemination in cattle.	9
UNIT III Parasitic protozoa and human diseases (Life history and pathogenicity of <i>Plasmodium vivax</i> and <i>trypanosoma gambiense</i>), Parasitic helminthes and human diseases (Life history and pathogenicity of <i>Schistosoma</i> , and <i>Wuchereria bancrofti</i>)	9
UNIT IV Life cycle, medical importance and control of <i>Anopheles</i> , <i>Aedes</i> , and <i>Xenopsylla cheopis</i> . Biology, Control and damage caused by <i>Helicoverpa armigera</i> and <i>Pyrilla perpusilla</i> , Safe storage of stored grains. Integrated Pest Management (IPM)	9

Books Recommended:

1. Arora and Arora: *Medical Parasitology*. II Edition. CBS Publications and Distributors.
2. Atwal (1986). *Agricultural Pests of India and South East Asia*, Kalyani Publishers.
3. Dunham (2004). *Aquaculture and Fisheries Biotechnology Genetic Approaches*. CABI publications, U.K.
4. Hafez (1962). *Reproduction in Farm Animals*. Lea & Fabiger Publisher
5. Jabde.: *Text Book of Applied Zoology: Vermiculture, Apiculture, Sericulture, Lac Culture, agricultural Pests and their Control*. Discovery Publishing House.
6. Park :*Preventive and Social Medicine*. XVI Edition. B.B Publishers.
7. Pedigo (2002). *Entomology and Pest Management*, Prentice Hall.
8. Ravindranathan: *Economic Zoology*. Vedant eBook (P) Ltd. New Delhi.
9. Shukla & Upadhyay: *Economic Zoology*. 4th Ed. Rastogi Publ., Meerut.
10. Sobti: *Medical Zoology*. Sobhan Lal Nagin Chand & Co. Jallendhar.

**B.Sc. 3rd Year (Zoology)- 6th
Semester
Paper 12: Biostatistics & Computer**

	No. of Lectures
UNIT-I Biostatistics as a tool in research. Data collection: Random & non-random sampling. Data tabulation; Data presentation (Graph, Frequency Polygon, Histogram, Bar diagram, Scatter diagram).	9
UNIT-II Measures of central tendency- Calculation of Mean, Mode, Median, Geometric mean, Harmonic mean	9
UNIT-III Measure of dispersion- Variability and statistics of dispersion, Range, Mean deviation, Standard deviation, Coefficient of variation, Standard error of means.	9
UNIT-IV Capabilities and limitations of computers; Components of computer (Input unit, Memory, Central Processing Unit, Output unit). Problem solving with computers. Elementary idea of memory (RAM, ROM). Uses of computers in different fields. e.g. Biology, Medical, Environment etc.	9

Books Recommended:

1. D. Rajaraman & V. Rajaraman: Computer Primer (2nd ed.) Prentice Hall of India, New Delhi.
2. Mahajan: Methods in Biostatistics, (4th ed.) Jaypee Bros. 1984.
3. Roger Hunt & John Shelley; Computer and Commonsense, Prentice Hall of India, New Delh
4. Zar: Biostatistical Analysis, Pearson Education (3rd Indian Reprint) 2005

**PRACTICAL SYLLABUS of B.Sc. 6th SEMESTER
(Zoology)**

A. Economic Zoology

1. Study of permanent slides/photomicrographs and specimens of *Plasmodium vivax*, *Entamoeba histolytica*, *Trypanosoma gambiense*, *Schistosoma haematobium*, *Ancylostoma duodenale* and *Wuchereria bancrofti*
2. Study of arthropod vectors associated with human diseases: *Pediculus*, *Culex*, *Anopheles*, *Aedes* etc
3. Study of insect damage to different plant parts/stored grains through damaged products/photographs.
4. Identifying feature and economic importance of *Helicoverpa (Heliothis) armigera*, *Papilio demoleus*, *Pyrilla perpusilla*
5. Visit to poultry farm or animal breeding centre. Submission of visit report
6. Maintenance of freshwater aquarium

B. Biostatistics

Practical application of statistics- Data presentation (Bar diagram, Histogram, Frequency distribution curve and scattered diagram), Measures of central tendency and dispersion.

C. Computer application

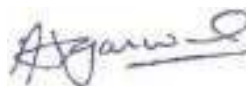
Practical demonstration –preparation of Power Point presentation, Spread sheet, Chart and Design etc.

Distribution of marks:

Duration 4 hrs.

1. Spotting (10) (Economic zoology)	20
2. Exercise on Biostatistics	05
3. Exercise on Computer Application	05
4. Record and Collection	05
5. Viva Voice	05
6. Sessional Marks	10

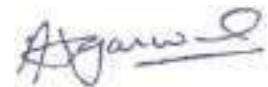
Total **50**



Department of Zoology

M. Sc. (Zoology)

Course Contents & Syllabus



**Sri Dev Suman Uttarakhand Vishwavidhyalay,
Badshahithaul, Tehri Garhwal, Uttarakhand 249 199.**

M.Sc. Course in Zoology

Sri Dev Suman Uttarakhand Vishwavidhyalay,
Badshahithaul, Tehri Garhwal, Uttarakhand 249 199.

The M.Sc. course will be spread over two years (four semesters). There shall be Four theory papers and one practical examination every semester. Each theory paper has been divided into four units.

Course Contents & Teaching Schedules:

M.Sc. Ist Semester (July to November)				
Paper	Paper Title	Lectures/ week	Teaching hours/week	MM
Theory Paper C01	Animal Diversity (Invertebrate)	3	03	100
Theory Paper C02	Cell Biology	3	03	100
Theory Paper C03	Genetics, Evolution & Taxonomy	3	03	100
Theory Paper C04	Developmental Biology	3	03	100
Lab Course LC01	Based on Theory Papers	12	12	100
M.Sc. 2nd Semester (December to April)				
Theory Paper C05	Microbiology & Parasitology	3	3	100
Theory Paper C06	Animal Physiology	3	3	100
Theory Paper C07	Immunology	3	3	100
Theory Paper C08	Molecular biology and Elementary Biotechnology	3	3	100
Lab Course LC02	Based on theory papers	12	12	100
M.Sc. 3rd Semester (July to November)				
Theory Paper C09	Animal Diversity (Chordata)	3	3	100
Theory Paper C10	Ecology & Wildlife	3	3	100
Theory Paper E01	Methods & Techniques / Dissertation (Fish Biology/ Entomology/ Environmental Biology)	3	3	100
Theory Paper E02 Special Paper E02 a Special Paper E02 b Special Paper E02 c	Fish Biology I Entomology I Environmental Biology I	3	3	100
Lab Course LC03	Lab Course Based on Theory papers	12	12	100
M.Sc. 4th Semester (December to April)				
Theory Paper C11	Endocrinology & Animal Behaviour	3	3	100
Theory Paper C12	Biochemistry	3	3	100
Theory Paper E03 Special Paper E03 a Special Paper E03 b Special Paper E03 c	Fish Biology II Entomology II Environmental Biology II	3	3	100
Theory Paper E04 Special Paper E04 a Special Paper E04 b Special Paper E04 c	Applied Fish Biology Applied Entomology Applied Environmental Biology	3	3	100
Lab Course LC04	Lab Course Based on Theory papers	12	12	100
* Students securing Minimum 70% marks in I & II Semester together can opt for dissertation in place of Theory paper C11				

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M.Sc. Zoology 1st Semester
Paper C01: Animal Diversity

No. of Lectures / week
(3 lectures of 60 minutes each)

UNIT I

Protozoa: Comparative morphology of all classes. Locomotor organelles and locomotion. Nutrition: holophytic, holozoic, saprozoic, myxotrophic and parasitic. Reproduction: sexual and asexual reproduction,

UNIT II

Porifera: Comparative morphology of all classes. Types of canal system, Reproduction: Asexual and sexual reproduction, regeneration in sponges.

Coelenterata: Comparative morphology of all classes. Polymorphism in Coelentrates, Coral reefs & its formation, Affinities of Ctenophora-

Helminthes: Comparative external and internal morphology of platyhelminthes and Aschelminthes,

UNIT III

Minor Group: Characters and Affinities of Phoronida and Rotifera-

Annelida: Comparative morphology of all classes, Coelom, Segmental organs. Parasitic adaptations in Hirudinaria.

Arthropoda: Appendages & Mouth parts in insects, Larval forms in Crustacea, Arachnida. Organization and taxonomic importance of Onychophora.

UNIT IV

Mollusca: Comparative morphology of all classes, Major features of the Respiratory and Reproductive Systems, Larval forms, Torsion in gastropods, Pearl formation.

Echinodermata: Water vascular system, Larval forms and affinities.

Recommended Books:

1. Barnes: Invertebrate Zoology (4th ed.), Holt-Saunders, 1980.
2. Barrington: Invertebrate Structure and function, Nelson, 1987.
3. Hickman, Roberts & Hickman: Integrated principles of Zoology (7th ed) Times-Mirror, Mosby
4. Kotpal R.L: Modern Text Book of zoology: Invertebrates. Rastogi
5. Nigam : Biology of Non-Chordates, Nagin Chand, 1985.
6. Parker TJ & Haswell WA: A Text book of Zoology Vol I & II, McMillan
7. Hyman L: Invertebrate Series, Academic Press
8. Starr et al: Biology, The Unity and Diversity of Life
9. Twenhofel et al: Principles of Invertebrate Palaeontology

M.Sc. Zoology 1st Semester
Paper C02: Cell Biology

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Ultra structure of pro-and eukaryotic cells.

Plasma membrane: Structure - organisation, lipid bilayer, proteins & glycoconjugates, liposomes. Function- Ionic transport, transporter proteins, types of transport (symport, antiport, active & passive, endocytosis, exocytosis).

Endomembrane system: Intracellular compartments/organelles involved in protein sorting, secretory and endocytic pathways.

Cytoskeleton: Components, functions & derived organelles (cilium, flagellum).

UNIT II

Mitochondria: Structure, function & genetic organisation.

Ribosome: Biosynthesis & formation in nucleolus.

Cell cycle: Molecular events during interphase, genetic regulation of cell cycle (including yeast as model system).

UNIT III

Cellular communication: general principles of cell communication, cell adhesion and roles of different adhesion molecules, gap junctions, extracellular matrix, integrins,

Cellular transformation and malignancy. Retroviruses, Apoptosis and Necrosis, Causes of cancer. Nuclear cytoplasmic interaction.

UNIT IV

Mechanisms of signal transduction; Endocrine, Exocrine & Synaptic signaling, Surface and intracellular receptors, G Proteins & generation of second messengers, mode of action of cAMP & Ca⁺⁺Calmodulin, Signal transduction pathways, regulation of signaling pathways,

Recommended Books:

1. Lodish-et al, Molecular Cell Biology 6th ed 2007 Free Man
2. Pollard and Earnshaw, Cell Biology 2002 Saunders
3. Karp: Cell and Molecular Biology 2007, Wiley
4. P.K. Gupta: Cell Biology and Genetics, Rastogi

M.Sc. Zoology 1st Semester
Paper C03: Genetics, Evolution & Taxonomy

No. of Lectures /week
(3 lectures of 60 minutes each)

Genetics

UNIT I

Mendelian Laws along with molecular explanations. Exceptions to Mendelian Laws. Lethal alleles. Multiple alleles. Gene interactions (Modification of Dihybrid Ratios) and their biochemical basis. Pedigree analysis in man. Sex linked inheritance and genetic disorders. Cytoplasmic inheritance & Extrachromosomal inheritance.

UNIT II

Linkage, genetic mapping techniques (Three point test cross). Gene maps in some organisms. Hardy-Weinberg law & its applications. Mutation (including Molecular basis). Chromosomes: Structure, chemical composition, (histones, DNA. Nucleosome) classification, karyotype, euchromatin and heterochromatin. Giant chromosomes: Polytene and Lampbrush chromosomes

Evolution

UNIT III

An overview of the concepts of organic evolution and evolutionary theories. Origin of life (including aspects of prebiotic environment and molecular evolution); Variations. Natural selection: Concept; Types of selection and selection coefficient. Role of mutation in evolution. Speciation: Isolating mechanisms; Modes of speciation (allopatric, sympatric, parapatric). Micro and macroevolution. Animal distribution: Zoogeographical divisions of the world (characteristics & fauna). Insular fauna. Fossils and fossilization. Geological distribution of animal. Evolution of Horse and Man; Extinctions.

Taxonomy

UNIT IV

History of animal taxonomy. Introduction and scope of Systematics. Species concepts (Typological, Nominalistic, Biological and Evolutionary). Principles of classification, functions, systems of classification; Linnean hierarchy. Nomenclature: ICZN; Taxon, Rank and Categories. Methodologies in taxonomy. Preparation of Keys, Techniques of museum preparation.

Recommended Books:

1. Lewin: Genes, Vol. VII Oxford, 1998, Inded.
2. Straehan & Read: Human Molecular Genetics 1999, John Wiley & Sons Pte. Ltd.
3. Snustad et al: Principles of Genetics 1997, John Wiley & Sons,
4. Strickberger: Genetics, 1996, Prentice Hall
5. Friefelder: Molecular Biology (2nd ed.), 1996 Narosa Publ. House,
6. Moody : Introduction to evolution (Indian Edition) Kalyani Publ., 1978.
7. Strickberger : Evolution, (Indian Edition). CBS Publ., 1994.
8. Richard Swann Lull: Organic Evolution Seema Publications, 1976
9. Simpson G.G.: Principles of Animal Taxonomy, Columbia Univ. Press, 1961.
10. Mayr, E. Systematics and the Origin of Species, Columbia Univ. Press, 1942.

M.Sc. Zoology 1st Semester
Paper C04: Developmental Biology

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Development and differentiation of sperm and oocytes, capacitation, vitellogenesis.

Fertilization: Mechanism of fertilization, acrosomal reaction, cortical reaction and formation of fertilization membrane. Blocks to polyspermy, Parthenogenesis.

UNIT II

Concept of organiser and embryonic inductions: primary, secondary & tertiary cellular interactions. Development of Eye and limb.

UNIT III

Development in Drosophila: Cleavage, gastrulation; Molecular basis of development, maternal-effect genes, segmentation genes and homeotic selector genes.

Teratogenesis: Genetic and environmental Teratogenesis, phenocopies, developmental mechanisms of teratogenesis

UNIT IV

Regeneration and Metaplasia: Distribution of regenerative ability, polarity in regeneration, mechanism of regeneration of amphibian limb and lens, metaplasia, super-regeneration and heteromorphosis

Metamorphosis: Kind of metamorphosis. Amphibian metamorphosis. Physiological and biochemical changes during metamorphosis, hormonal control of metamorphosis.

Recommended Books:

1. Gilbert: Developmental Biology 1997 Sinauers Ass. Publ. Massachusetts
2. Wolpert: Principles of Development 3rd ed 2007, Oxford
3. Kolthoff: Analysis of Biological development 1996 McGrawHill
4. Balinsky: Introduction to Embryology Saunders co. Philadelphia and London
5. Berill: Developmental Biology Tata McGraw Hill

M.Sc. Zoology 2nd Semester
Paper C05: Microbiology & Parasitology

No. of Lectures /week
(3 lectures of 60 minutes each)

Microbiology

UNIT I

Bacteria - classification, staining techniques, pathological significance. Physiology, genetics & reproduction of viruses of plants and animals, Bacteriophage, lysogenic & lytic cycle, Bacterial genetics. Microbial culture techniques & media enrichment techniques. Microbial fermentation: Microbes in decomposition and recycling processes. Microbes as pathological agents in plants, animals and man.

UNIT - II

Laboratory facilities, culture media for animal cell culture, Primary culture, cell lines and cloning, Tissue and organ culture, minisatellites, microsatellites. Application of animal cell culture.

Parasitology

UNIT III

Parasitism and evolution of parasitism. Protozoan parasites: Biology, life cycle and diseases caused by selected pathogenic protozoans of man their preventive and control measures (*Entamoeba histolytica*, Trypanosomes, *Leishmania donovani*, *Trichomonas vaginalis*, *Giardia intestinalis* & *Plasmodium*).

UNIT IV

Parasitic adaptations in Platyhelminthes and Aschelminthes. Common trematode, cestode and nematode parasites. Biology, life history and preventive measures of economically important helminth parasites of man and domesticated animals (*Ascaris*, *Schistosoma*, *Fasciola*, *Wuchereria*) Taenia. Introduction to arthropods and vectors of human diseases (mosquitoes, lice, flies & ticks). Parasitism in Crustacea

Recommended Books:

1. Pelczar: Microbiology, Tata McGraw Hill, 1993
2. Davis: Microbiology (3rd ed.) Harper & Row, Publ. Inc., 1980
3. Chandler and Read: Introduction to Parasitology 1970, Wiley
4. Marr et al : Molecular Medical Parasitology 2003, Elsevier
5. Noble and Noble: Parasitology 1996, Cambridge University press
6. Schmidt and Roberts: Williams and Wilkins Foundations Parasitology (4th ed), 1989
7. Ash and Orihel: Parasites, A guide to laboratory procedures and identification, Raven press

M.Sc. Zoology 2nd Semester
Paper C06: Animal Physiology

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Physiology of respiration: Exchange of respiratory gases at the pulmonary surface. Transport of respiratory gases by blood. Factors affecting oxyhaemoglobin dissociation. Neural and chemical control of respiration.

Physiology of digestion & absorption: Functional anatomy of the gastrointestinal tract. Gastrointestinal motility and its regulation. Secretions of the gastrointestinal tract. Liver and biliary system. Digestion and absorption of proteins, fats and carbohydrates.

Physiology of excretion: Formation of urine: Functional anatomy of the kidney. Glomerular filtration and its control. Reabsorptions & secretions in the tubules. Mechanisms of active transport. Excretion and control of urea, sodium, potassium and other ions.

Functions of aldosterone, antidiuretic hormone and renin-angiotensin system in renal physiology. Osmoregulatory mechanisms.

UNIT II

Physiology of cardiovascular system: Characteristics of vertebrate cardiac muscle. Initiation, conduction and regulation of heart beat. Cardiac cycle and cardiac output. Regulation of cardiac amplitude and frequency. ECG and myocardial infarction. Blood pressure and its regulation. Circulation (open and closed, blood composition and function). Blood groups.

The cascade of biochemical reactions involved in coagulation of blood. Lymphatic systems.

UNIT III

Nervous system: Neuron - the basic functional unit, the sensory & motor divisions. Ionic basis of resting and action potentials of neurons, significance of myelinated nerve fibers and velocity of conduction. Physiologic anatomy of the synapse. Mechanism of synaptic transmission, transmitters (acetylcholine, norepinephrine, histamine, GABA). Reflexes and types of reflexes.

Neuromuscular physiology: Structural proteins of muscle cells, actin myosin complex and source of energy for contraction. Sliding filament theory of muscle contraction. Excitation-contraction coupling.

UNIT IV

Sensory physiology: The eye and visual processes - Functional anatomy of the structural elements of the retina. Photochemistry of vision. Extra-retinal photoreception. Visual adaptations in vertebrates.

The ear and auditory processes - Tympanic membrane and the ossicular system. Conduction of sound from tympanum to cochlea. Functional anatomy of cochlea. Sound transmission in cochlea.

Mechanism of thermoregulation in poikilotherms, homeotherms and heterotherms. Aestivation and hibernation.

Recommended Books:

1. Ganong: Review of Medical Physiology 22nd ed 2005. Lang Medical Publ.
2. Guyton and Hall: Text book of Medical Physiology 11th ed 2006 WB Saunders.
3. Keel et al: Samson Wright's Applied Physiology 13th ed 1989 Oxford Press
4. C.C. Chatterjee: Human Physiology
5. Nielson: Animal Physiology, Cambridge.
6. Jain A.K: Textbook Of Physiology 6/E, Avichal Publishing Company
7. Singh H R & Kumar N : Animal Physiology.

M.Sc. Zoology 2nd Semester
Paper C07: Immunology

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Historical aspects of immunology, scope and applications, recent advancements and future prospects. Ontogenetic and Phylogenetic developments of immune system in animals including human beings.

UNIT II

Overview of the Immune System. Hematopoiesis – formation of B-lymphocytes and T-lymphocytes and its regulation. Cells of the immune system- NK Cells, B-lymphocytes, T-lymphocytes, Granulocytic cells, Dendritic cells. Primary lymphoid organs and their functional role- Bone marrow, Thymus. Secondary lymphoid organs and its functional role- Lymph nodes, Spleen, Mucosal-Associated Lymphoid Tissue [MALT], Intraepithelial Lymphocytes [IEL], Cutaneous-Associated Lymphoid Tissue [CALT]

UNIT III

Antigens, Antigenicity versus Immunogenicity, Haptens and Adjuvants.

Basic structure of immunoglobulin. Classes of immunoglobulins and its biological activities. Major Histocompatibility Complex [MHC] - Structure, types and function. Antigen processing and presentation. Structure and functions of BCR & TCR.

UNIT IV

Cytokines. The Complement System. Cell mediated cytotoxicity: Mechanism of T cell & NK cell mediated lysis. Ab-dependent cell mediated cytotoxicity (ADCC) Overview of Hypersensitivity and Autoimmunity. Introduction to Transplantation.

Vaccines: Active and Passive Immunization.

Introduction to Monoclonal Antibodies and Hybridoma technology. Antigen-Antibody Interactions: Precipitation Reaction, Agglutination Reactions, Immuno precipitation, Immuno-fluorescence.

Recommended Books:

1. Kuby's immunology- Goldsmith et al, 6th Ed, WH Freeman, New York, USA.
2. Basic immunology: functions and disorders of immune system- Abbas, Litchman. Saunders Publications, Philadelphia, USA
3. Janeway's Immunology- Kenneth Murphy, 8th Ed, Garland Science, Pennsylvania, USA.
4. Roitt's Immunology- Delves et al, 12th Ed, Willey-Blackwell Science, Oxford, UK.
5. History of Immunology, 2nd Ed- Silverstein [2009], Academic Press, New York, USA.
6. Exploring immunology: Concepts and Evidence- Macpherson and Austyn, Willey-Blackwell Science.

M.Sc. Zoology 2nd Semester
Paper C08: Molecular Biology & Elementary Biotechnology

No. of Lectures /week
(3 lectures of 60 minutes each)

Molecular Biology

UNIT I

The central Dogma of Molecular Biology. DNA: Structure and conformation, supercoiling, packing of DNA into chromosomes. Structural polymorphism of DNA & RNA. Three dimensional structure of t-RNA.

UNIT II

DNA replication – Prokaryotic and eukaryotic DNA replication, Enzymes and accessory protein involved in DNA replication. Genetic code. Transcription and translation in prokaryotes and eukaryotes. RNA processing. Mutations & DNA repair systems (excision repair, mismatch repair and SOS repair)

Regulation of Gene expression in Prokaryotes and Eukaryotes: Operon concept (*E. coli* lac operon, trp operon, ara operon),

Biotechnology

UNIT III

History, definition & Scope. General steps of Gene cloning-cutting, ligation, transformation and analysis of clones, genomic & C-DNA library. A general idea of cloning vectors based on plasmid & phages, blotting techniques, DNA-sequencing, polymerase chain reaction.

UNIT IV

Gene therapy, DNA finger printing, Transgenic animals and plants. Potential hazards of recombinant DNA technology. Products of recombinant DNA technology, Human genome project and its applications,

RIA, ELISA, Northern Blotting, Western Blotting, Southern Blotting.

Recommended Books:

1. De Robertes & Robertis: Cell & Molecular Biology, 1987, Lee & Fabiger Philadelphia
2. Friefelder: Molecular Biology (2nd ed.), 1996 Narosa Publ. House,
3. Alberts et al: Molecular biology of the cell (4th ed.) 1994, Garland Publ. New York.
4. Elliott & Elliott: Biochemistry and Molecular Biology, 1996, Oxford

M.Sc. Zoology 3rd Semester
Paper C09: Animal Diversity (Chordata)

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

General Characters development of Urochordata and Cephalochordata.

Affinities of Hemichordata, Urochordata & Cephalochordata.

UNIT II

Characters and affinities of Cyclostomata

Salient features of different groups of fishes; comparison between Chondrichthyes and osteichthyes; Dipnoi.

Origin and evolution of Amphibia. Parental care in Amphibia

UNIT III

Origin of Reptilia and adaptive radiation in Reptilia.

Characters and affinities of Chelonia and Rhynchocephalia

Origin and ancestry of birds, Characters and affinities of Ratitae. Origin and mechanism of flight in birds. Palate in birds. Migration in birds.

UNIT IV

Origin of mammals.

Characters and affinities of Prototheria and Metatheria. Dentition in mammals. Aquatic and flying adaptations in mammals, Adaptive radiation in mammals.

Recommended Books:

1. Pandey B.N. and Mathur V. Biology of Chordates, PHI Learning, 2018
2. Parker T.J. & Haswell WA: A Text Book of Zoology, Vol II, ed. 7th, Macmillan & Co. Ltd, London, 1962.
3. Young JZ: The Life of Vertebrates, Oxford, 1950.
4. R.L. Kotpal: Modern Text-book of Zoology, Vertebrates. Rastogi Publication.
5. E.L. Jordan and P.S. Verma: Chordate Zoology. S. Chand & Co. Ltd.
6. Hildebrand: Analysis of Vertebrate structure.
7. Romer & Parsons: The Vertebrate Body, Saunders.

M.Sc. Zoology 3rd Semester
Paper C10: Ecology & Wild Life

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Ecology: Definition, Scope, Importance, Application. Limiting Factors: Liebig's law of the minimum, Shelford's law of tolerance. Combined concept of limiting factor, Factor interaction. Homeostasis. Biogeochemical cycle: Concept & Types of biogeochemical cycle (nitrogen, phosphorus, carbon & water cycle). Ecosystem. Concept; Energy flow; Food chains & Ecological pyramids. Habitat Ecology: Concept of habitats & ecological niche.

UNIT- II

Population: Concept & attributes: Biotic potential, Density, Natality, Mortality; Intrinsic rate of natural increase, survivorship curves. Population growth forms; Carrying capacity; Population regulation (Density dependent and independent). Cycles and fluctuations. Community: Concept & characteristics: Density, Dominance, Diversity & Stratification. Ecotones & Edge effect; Succession of communities; Key stone species.

UNIT III

Biodiversity: Endemism, Genetic, Species and ecosystems diversity; Factors influencing biodiversity Economic valuation of biodiversity: Concepts & Importance. Environmental pollution (Air, water, solid waste, Radioactive); Environmental Impact Assessment. Cumulative Impact Assessment of hydropower development; Environmental flows: need, methodologies, DRIFT, BBM

UNIT IV

Techniques in wildlife: Identification by natural marking, pug marks, calls, behavioural idiosyncrasies etc. Passive marking (collars, tags, branding, rings etc). Dynamic marking (radiotelemetry, satellite telemetry, radioisotopic tracers). Population estimation techniques: Absolute versus relative density, total count versus estimates. Census methods (Drive count, aerial count, point count). Indices (pug marks, droppings, nests, burrows, dens, calls). Biogeography of India: Topography & Climate. Patterns of distribution of biota. Wildlife Conservation and Management: Wildlife as a resource; Principles of wildlife management. Habitat management; General introduction to Sanctuaries, National Parks and Biosphere Reserves of India; Captive breeding; Conservation of germ plasma (frozen zoo). Endangered species: IUCN categories for conservation. Endangered fauna of Himalaya (distribution, habitat, habits).

Recommended Books.

1. Kendeigh : Animal ecology, Prentice Hall 1961.
2. Odum: Fundamentals of ecology, Saunders Co. Publ., 1993 Indian ed.
3. Faabourg: Ornithology. An ecological approach Prentice Hall.
4. Krebs: Ecology (4th ed.) Harper Collins College Publisher
5. Negi: An Introduction to Wildlife Management, 1983.
6. Majupuria T C: Wildlife Wealth of India Tecpress Service, Bangkok, 1986.
7. Saharia: Wild life of India Nataraj Publishers, Dehradun.
8. Robert H. Giles: Wildlife Management Techniques (3rd ed.) Natraj Publishers, Dehradun,
9. Negi: Handbook of National Parks, Sanctuaries and Biosphere Reserves in India, 1995.
10. Negi: Himalayan Wildlife: Habitat & Conservation, 1992. Indus Publi. Comp., New Delhi.
11. Sharma: High Altitude Wildlife of India Oxford & IBH Publishing Co. Pvt. Ltd.1994.
12. Richard D. Teague: A Manual of Wildlife Conservation Nataraj Publishers, 1989.
13. Smith RL: Ecology and Field Biology, Harper Collins Publ. 1996.
14. Dodson: Ecology Oxford
15. Dash MC: Fundamental of Ecology, Tata Mc Graw Hill 2001, New Delhi

M.Sc. Zoology 3rd Semester
Paper 11: Methods and Techniques

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Microscopic Techniques: Visualization of cells and sub cellular components by microscopy; Microscopy of living cells; measuring cell size, Scanning and transmission microscopy,

Histochemical and Immunotechniques: Microtomy; Localization of Protein, lipids and carbohydrates in tissues. Antibody generation; Detection of molecules using ELISA, RIA; Western Blot; Fluo- cytometry and Immunofluorescence.

Biophysical Methods: Molecular analysis using UV/visible; Fluorescence; Spectrophotometry; NMR and ESR Spectroscopy;

UNIT II

Molecular Biology and Recombinant DNA Methods: Isolation and purification of RNA, DNA and proteins. Analysis of RNA, DNA and proteins by one or two dimensional gel electrophoresis. Molecular cloning of DNA or RNA fragments in bacterial and eukaryotic systems. DNA sequencing methods, strategies for genome sequencing.

Radio labeling techniques: Detection and measurements of different types of radio isotopes normally used in biology; incorporation of radioisotopes in biological tissues of cells; molecular imaging of radioactive material; safety guidelines.

UNIT III

Methods in field biology: Methods of estimating population density of animals and plants; ranging patterns through direct, indirect and remote observation. Estimation of Physico-chemical Parameter- pH, Free CO₂, D.O., Turbidity in water samples; Estimation of Nitrates, base deficiency in different soil samples.

UNIT IV

Statistical methods: Measures of central tendency and Dispersal; Probability distributions (Normal, Binomial and Poisson); Sampling distribution; difference between Parametric and Non parametric statistics; Confidence interval; Errors; Correlation and Regression analysis; t-test; Anova and X² test.

Recommended Books:

1. Sharma, V.K.: Techniques in Microscopy and Cell Biology Tata McGraw Hill, 1991.
2. Alberts et al.: Molecular Biology of the cell (2nd ed.), Garland, 1989.
3. Biochemical Technique: Theory & Practical J.F. Robyt & B.J. White \$ 30.95 Waveland Press, Inc.
4. Wilson & Walker: Practical Biochemistry (4th ed) Univ. of Hertfordshire Cambridge Univ. Press
5. Jayraman: Laboratory Manual in Biochemistry
6. Arnold L. Demain & Julian E. Davies: Manual of Industrial Microbio. & Biotech. 2nd ed.

M.Sc. Zoology 3rd Semester
Paper E02 a : Fish Biology I

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Systematics and Phylogeny: Introduction and History of Ichthyology. Zoogeographical distribution Origin, evolution, and phylogeny of fishes. Schemes of classification of fossil and recent fishes. General Characters of Teleost and Elasmobranch fishes. Agnatha: Characters, basic biology and affinities of Cyclostomes and Ostracoderms. Placoderms: General characters and affinities. Holocephali: Salient features external and internal morphology and affinities. Dipnoi: Salient features and affinities.

UNIT II

Comparative Morphology of Telesosts and Elasmobranchs: Morphometric and meristic study of fishes. Integuments (Teleosts and Elasmobranchs), colouration and its significance, mechanism of colour change. Exoskeleton: Structure and development of placoid and nonplacoid scales. Fins and their origin. Skeletal system : Vertebrae, Girdles, Opercular bones, Pharyngeal bones

UNIT III

Alimentary canal and associated glands. Modifications based on different feeding behaviour. Structure of heart, afferent and efferent branchial arteries. Structure of a Gill and Pseudobranch. Brain and cranial nerves in fishes. Urino-genital system of a teleost and an elasmobranch fish. Techniques for the study of histology, histochemistry and biochemistry.

UNIT IV

Fish Physiology Respiration: Functional organization of Gill lamellae, Blood supply of gill, Mechanism of gas exchange, Counter current mechanism. Physiology of excretion and osmo-regulation, Mechanism of water- salt balance in freshwater, marine and estuarine fishes. Reproductive physiology: Spawning patterns and stimulating factors, Follicular atresia. Haemopociesis: Composition of Blood, haemopoietic tissues, synthesis of Haemoglobin. Physiology of Thermo-regulation in fishes.

Recommended Books:

1. Srivastava: Fish Biology, Narendra Publication House, 2008.
2. Ojha: Biology of Hill Stream Fish, Narendra Publication House, 2002.
3. Kyle: The Biology of Fishes, 2007.
4. Singh: Advances in Fish Biology, Hindustan Publishing Corp., 1994.
5. Munshi & Munsil: Fundamental of Freshwater Biology, Narendra Publ. House, 1995.
6. Carlander: Handbook of Freshwater Fishery Biology, vol. 2, Iowa State Univ. Press, 1977.
7. SS Khanna & H.R. Singh: Fish & Fisheries

M.Sc. Zoology 3rd Semester
Paper E02b : Entomology I

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Introduction to external morphology: body wall, segmentation. The head: structure of head; appendages, and antennae. The thorax: pro, meso and metathorax; legs. The wings: origin, structure and articulation. The abdomen: structure, appendages; external female and male genitalia.

UNIT II

Classification of insect with special reference to that of different orders. General characters, habits, habitats, importance of the insect orders-Collembola, Protura, Diplura, Thysanura, Ephemerida, Placoptera, Odonata. General characters, habits, habitats, importance of the insect orders-Embioptera, Orthoptera, Phasmida, Dermaptera, Blattaria, Menteodea, Isoptera, Zoraptera.

UNIT III

General characters, habits, habitats, importance of the insect orders-Psocoptera, Thysanoptera, Heteroptera, Homoptera, Anoplura, Neuroptera, Megaloptera, Trichoptera.

UNIT IV

General characters, habits, habitats, importance of the insect orders-Coleoptera, Strepsiptera, Hymenoptera, Lepidoptera, Diptera.

Recommended Books.

1. Mani MS: An Introduction to Entomology, National Book Trust, 1971.
2. Mani MS, Introduction to High Entomology, Mathuen & Coy. Ltd. 1962.
3. Snodgrass RE: Arthropod Anatomy, Comstock Publ. Associates, NY, 1952.
4. Wigglesworth VB: Insect Physiology, Cambridge University Press, 1954.
5. Essig EO: College Entomology, Satish Book Enterprise, Agra, 1982.
6. Fox RM & Fox JW: Introduction to Comparative Entomology. Affiliated East-West Press Pvt. Ltd. New Delhi, 1968.
7. Little VA: General & Applied Entomology, Oxford & IBH Publ. Copy, 1963.
8. Imms AD: Insect Natural History, Collinns St. James's Place London, 1947.
9. Elzinga RJ: Fundamentals of Entomology, Prentice Hall of India Pvt. Ltd., 1978.
10. Comstock JH: An Introduction to Entomology, Comstock Publ. Coy. INC., 1950.
11. Richard DW and Davies RG: A General Text Book of Entomology, Mathuen & Coy., Ltd.

M.Sc. Zoology 3rd Semester
Paper E02c : Environmental biology I

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Introduction to Environmental biology, its multidisciplinary nature and scope. Components of Environment: atmosphere, lithosphere & hydrosphere. Climate (micro, regional and global); Hydrological cycle; Soil profile. Changing interactions between man and environment (cultural, political, ecological).

UNIT II

Terrestrial biomes of the world their characteristics and major biota (Grassland, Desert, Forest, Tundra). Aquatic biomes (lotic, lentic, marine, estuaries, coral reef), their status. Wetlands of India. Environmental adaptations: Aquatic, Aerial, Desert, Arboreal, Fossorial, Defensive.

UNIT III

Island biogeography theory. Habitat fragmentation, Habitat selection, Corridors, Community patterns (gradients and Continuum), Community indices. Ecological niche. Population cycles and fluctuations; Dispersal. Intra & Inter specific relationship. Models of succession; Pioneer & climax concept.

UNIT IV

Concept of biological indicators; biological monitoring; Indicator organisms. Invasive species and its impact. Biological control: Biomagnification, Bioassimilation & Bioaccumulation. Xenobiotics: Carcinogenic (heavy metals, pesticides).

M.Sc. Zoology 4th Semester
Paper C11: Endocrinology and Animal Behaviour

No. of Lectures /week
(3 lectures of 60 minutes each)

Endocrinology

UNIT I

Endocrine messengers: hormones, neurohormones, hormone like substances (neuronal peptides, autocoids, pheromones, neurosecretion). Hormones and Physiological actions of the following endocrine glands in vertebrates: Thyroid, Parathyroid, Pancreas, Gastro-intestinal tract, Adrenal cortex and Medulla, Thymus & Pineal. Hormone biosynthesis: Protein peptide hormones (gonadotrophins, thyrotrophin, corticotrophin, Steroids and catecholamines). Mechanism of action of Protein hormones and Catecholamines: membrane bound receptors, G-protein and control of adenylylate cyclase, Cyclic nucleotide cascade.

UNIT II

Mechanism of action of Steroid and Thyroid hormones: Cytosolic receptors, effect on transcriptional and translational processes. Organisation & physiological actions of the Testis: Androgen binding protein (ABP), Inhibin. Neuroendocrine control of testicular functions (Gn RH regulation, FSH- effects on germinal epithelium, LH-effects on Leydig cells, negative feed back regulation). Organisation & physiological actions of the Ovary: Folliculogenesis, Ovulation, Luteinization, Ovarian cycles; Seasonal reproductive cycles; sexual dysfunctions in man.

Animal Behaviour

UNIT III

The science of behaviour: History, scope and terminology. Proximate and ultimate causes of behaviour. Instinct: Definition and characteristics (sign stimuli and Fixed Action Pattern). Learning behaviour: Definition. Spatial learning. Associative learning, classical conditioning, operant conditioning, language learning. Imprinting. Kin recognition. Instinct versus learning behaviour. Timing of behaviour: Biological rhythms. The Biological Clock. Circadian rhythms and their synchronisation seasonal rhythms. Photoperiodism.

UNIT IV

Communication: Visual, olfactory, acoustic. Bird songs. Amphibian calls. Communication in bats. (echolocation in bats, electrolocation in fish) Chemoreception: Chemicals (pheromones) as signals in insects, fish and mammals. Role of olfaction in communication behaviour (territorial, sex recognition, feeding etc) in fish and mammals. Neural control of behavior: Components of brain involved in various behaviours. Neural control of drinking, learning, eating, activity & rest, sleep, aggression, sexual behaviour. Hormonal Control of behaviour. Hormone brain relationships. Sexual behaviour in mammals (eg. rat). Sociobiology: Elements of sociality and social grouping in animals. Grouping versus predation. Grouping vs foraging. Evolutionary and ecological aspects of animal behaviour. Territoriality. evolution of migratory behaviour, costs and benefits of migration. Ecology of foraging behaviour: Prey detection. Prey capture. Antipredator behaviour. Cooperation and conflict: Evolution of altruism. Evolution of cooperative breeding in birds and mammals.

Recommended Books:

1. Alcock : Animal behaviour Sinaur Associates, Inc. 1989.
2. Goodenough et al.: Perspectives on animal behaviour. Wiley & Sons, New Youk. 1993.
3. Grier : Biology of animal behaviour, Mosby 1984.
4. Krebs & Davies : An introduction to behavioural ecology (3rd ed.) Blackwell 1993.
5. Lehner : Handbook of ethological methods, Garland STPM Press, New York, 1979.
6. Halliday, T.R.: Animal Behaviour Vol. 1 & 2 Communication, 1983.
7. Saunders : Insect Clocks Pergamon Press. 1982.
8. Palmer: An Introduction to Biological Rhythms Academic Press New York.1976
9. Ross & Salisbury: Plant Physiology, Indian ed. (FOR BIOLOGICAL RHYTHMS)
10. Mac E. Hadley: Endocrinology, Prentice-Hall International ed.1988/1992.
11. G J Goldsworthy et al: Endocrinology, Blackie, 1981.

**M.Sc. Zoology 4th Semester
Paper C12: Biochemistry**

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Enzymes: Classification (rationale, overview and specific example) Zymogens and their activation (protease and Prothrombin). Enzyme substrate complex : concept of E-S complex, binding sites, active site, specificity, Lock and Key Hypothesis, Induced -Fit Hypothesis, Michaelis- Menten equation and its derivation, Different plots for the determination of K_m and V_{max} .

UNIT II

Carbohydrate Metabolism I: Pathway and regulation of Glycolysis, Gluconeogenesis, Glycogenolysis, Glycogenesis. Carbohydrate Metabolism II: Citric acid cycle and its regulation, electron transport chain and oxidative phosphorylation, pentose phosphate pathway and its regulation.

Amino Acid Metabolism: Overview of Amino acid degradation, Urea cycle (conversion of ammonia into urea, linkage between urea cycle and citric acid cycle) and its regulation. Conversion of nitrogen to ammonia by microorganisms, overview of amino-acid biosynthesis.

UNIT III

Fatty Acid Metabolism: Fatty Acid Oxidation and regulation β -oxidation, Oxidation of unsaturated fatty acids and odd chain fatty acids. β -oxidation in peroxisomes, ketone bodies and their overproduction. Fatty Acid Biosynthesis and Regulation. Reactions of fatty acid synthase, synthesis of triglycerols, membrane phospholipids & prostaglandins. Cholesterol biosynthesis and regulation.

UNIT IV

Nucleic Acid Metabolism: Purine biosynthesis and its regulation, pyrimidine biosynthesis and its regulation. Formation of deoxyribonucleotides. Salvage pathway for purine & pyrimid in nucleotides, Degradation of purines and pyrimidines into uric acid and urea. Integration of Metabolism.

Recommended Books

1. Lehninger: Principles of Biochemistry, 4th ed., Nelson & Cox, WH Freeman and Co., 2007
2. Voet & Voet: Biochemistry, 2nd ed., Wiley & Sons.
3. Berg, Tymoczko, Stryer: Biochemistry, 5th ed., WH Freeman and Company, 2003.
4. Garrett & Grisham: Biochemistry, 4th ed., Brooks/Cole Cengage learning, 2010.
5. Murray, Granner, Rodwell: Harper's Illustrated Biochemistry, 27th ed. McGraw Hill, 2006
6. Conn & Stumpf: Outlines of Biochemistry, 5th ed., Willey India, 2007.

M.Sc. Zoology 4th Semester
Paper E03a : Fish biology II

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Specialized Characters: Accessory Respiratory organs in fishes. Swim Bladder and its modifications, Blood supply of Air bladder, Gas secreting complex, Functions Weberian ossicles: Structure and arrangement, Working mechanism and functions. Electric organs: Structure, Mechanism of electric discharge, Functions. Bioluminescence: Luminiscent organs, Mechanism of light emission, Significance. Sound production in fishes

UNIT II

Fish Behaviour Fish behavior: Social, ecological, reproductive, migratory, foraging behavior. Parental care in fishes. Receptor organs: Eye, Acoustico-Lateralis system, olfactory organs and Taste buds Migration in fishes: Pattern, Causes and Factors influencing. Parental care and viviparity in fishes. Pheromones and their role in sexual behavior of fish

UNIT III Fish Embryology Fertilization and development of fish egg (Teleost). Cleavage, Blastulation, Gastrulation and fate map. Hatching and post-embryonic development.

UNIT IV Endocrine and Biochemistry Pituitary gland: Micro-anatomy, Hormones of Pituitary and their physiological actions. Thyroid gland: Structure and function Structure and functions of Pancreatic islets in fishes. Location and functions of Corpuscles of Stannius, Pineal and Urophysis in fishes.

Recommended Books

1. Agarwal N K : Fish Reproduction, APH Publication
2. Srivastava CBL: Fish Biology, Narendra Publication House, 2008.
3. Carlander: Handbook of Freshwater Fishery Biology, vol. 2, Iowa State Univ.Press,1977.
4. Ojha J: Biology of Hill Stream Fish, Narendra Publication House, 2002.
5. Singh H R: Advances in Fish Biology, Hindustan Publishing Corp., 1994.
6. Munshi & Munsu: Fundamental of Freshwater Biology, Narendra Publ. House, 1995.
7. Kyle: The Biology of Fishes, 2007.
8. Khanna & Singh: Fish & Fisheries

M.Sc. Zoology 4th Semester
Paper E03b : Entomology II

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Digestive system: structure, physiology of digestion and absorption of different types of food. Structure of circulatory system: haemolymph its composition and function. Physiology of respiration; the tracheal system, spiracles, respiration in aquatic insects. Nervous system: structural basis, Excretion: structure and physiology of malpighian tubules and its secondary functions. Reproduction: male and female gonads.

UNIT II

Structure of compound eye, mosaic vision. Production and reception of sound. Light producing organs. Hormones: neurosecretion and co-ordination, Metamorphosis: types, hormonal control of metamorphosis, Pheromones.

UNIT III

Structure of the insect egg, maturation, cleavage, formation of blastoderm, gastrulation, blastokinesis, germ layers, Various types of larvae and pupae, moulting, diapauses, Oviparity, viviparity, ovo-viviparity in insects.

UNIT IV

Abiotic factors: effect of temperature, light and humidity on growth of insect population; biotic potential, Malthusian principle and dynamics of population fluctuation, hibernation, aestivation. Biotic factors: parasitism, predation and social life in insects, phase theory of locust, parental care.

Recommended Books.

1. Mani MS: An Introduction to Entomology, National Book Trust, 1971.
2. Mani MS, Introduction to High Entomology, Mathuen & Coy. Ltd. 1962.
3. Snodgrass RE: Arthropod Anatomy, Comstock Publ. Associates, NY, 1952.
4. Wigglesworth VB: Insect Physiology, Cambridge University Press, 1954.
5. Essig EO: College Entomology, Satish Book Enterprise, Agra, 1982.
6. Fox RM & Fox JW: Introduction to Comparative Entomology. Affiliated East-West Press Pvt. Ltd. New Delhi, 1968.
7. Little VA: General & Applied Entomology, Oxford & IBH Publ. Copy, 1963.
8. Imms AD: Insect Natural History, Collinns St. James's Place London, 1947.
9. Elzinga RJ: Fundamentals of Entomology, Prentice Hall of India Pvt. Ltd., 1978.
10. Comstock JH: An Introduction to Entomology, Comstock Publ. Coy. INC., 1950.
11. Richard DW and Davies RG: A General Text Book of Entomology, Mathuen & Coy., Ltd.

M.Sc. Zoology 4th Semester
Paper E03c : Environmental Biology II

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Natural Resources: Management & conservation; Renewable & non-renewable resources; Concept and currencies of Sustainable development. Biodiversity & its conservation. Environment Protection laws. Earth Summit, Rio+20.

UNIT II

Concept of Protected areas: Sanctuary, National Parks & Biosphere Reserves. IUCN. Categories Biodiversity hot spots, conventions on biodiversity. International efforts in biodiversity conservation (UNFP, IUCN, WWF); CITES; UNESCO's World heritage mission; Convention on Biological Diversity (CBD).

UNIT III

Global Environmental Problems: Climate change, Green house effect; Acid rain; Ozone layer depletion; Deforestation; Desertification; Marine pollution; Urbanization.

UNIT IV

Environmental Problems/Hazards in Hills: Earthquake; Land slide; Soil erosion; Sedimentation; Cloud burst; Flash floods; Glacial retreat. Application of Remote sensing & Geographical Information Systems (GIS) in environment management

M.Sc. Zoology 4th Semester
Paper E04a : Applied Fish Biology

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Aquaculture: Scope, importance and present status. Concept of different culture systems: Extensive and intensive fish culture, Fish culture in ponds and reservoirs. Culture in rice fields, bheries, Cage culture, Pen culture, Monoculture and polyculture. Preparation and maintenance of fish farm: Fertility and pH maintenance. Role of fertilizers, required water quality and its maintenance. Control of aquatic weeds, insects and predatory fishes. Fish nutrition: Development of natural food and supplementary feeding. Culture techniques Procurement of stocking material from natural sources, Induced breeding and use of new generation drugs, ovaprim, different hatching techniques, Transport of fish seed.

UNIT II

Culture Practices: Culture of Common carp and Exotic Trouts. Prawn culture. Sewage – fed Fisheries and Integrated fish farming Common fish diseases and their control. Mahseer and Schizothoracid fishery. Current status, problems and perspectives. Culture of Larvicidal fishes. Characters and importance

UNIT III

Harvesting and Post harvesting Fishing gears used in inland waters and seas. Fish preservation and processing techniques. Fish by-products and their uses. Fish spoilage: Causes of rigor mortis, precautions to control rancidity, microbial spoilage. Nutritive value of fish, biochemistry of fish flesh of Indian major carps. Storage, transportation and marketing.

UNIT IV

Capture and Ornamental Fishery: Rivers, Lakes, Dams / Reservoir fishery- Problems and perspectives in Capture fisheries. Estuarine fishery. Characteristics and species dynamics. Marine fishery: Coastal, Off shore and deep sea fishery. Exclusive Economic Zone. (Hilsa, Oil sardine, mackerel, Bombay duck, Sole, Ribbon, Shark and Rays). Recreational fishery and Cooperative movements. Fish Farmers Development Agencies (FFDA). Climate change and fishery. Major, Marine and freshwater ornamental fishes, their food & breeding needs. Health management of ornamental fishes. Specific diseases and their cure. Setting and maintenance of aquaria.

Recommended Books

1. Singh & Lakra: Cold Water Aquaculture and Fisheries, Narendra Publication House, 2000.
2. S.K. Gupta, P.C. Gupta: General and Applied Ichthyology, S. Chand & Comp., 2006.
3. Vadapalli Satyanarayana: Fish Culture, Narendra Publ. House, 2002.
4. R.K. Rath: Freshwater Aquaculture, 2nd ed., Scientific Publishers, 2000.
5. Singh & Mittal: Dictionary of Aquaculture, Daya Publishing House, 1963.
6. Tor G. Heggberget: The Role of Aquaculture in World Fisheries, Oxford Univ. Press, 1996.
7. Jhingran: Fish and Fisheries of India.
8. Thomas P.C., Rath, S.C. and Mohapatra, Kanta Das. Breeding and Seed Production of Fin Fish and Shell Fish.

M.Sc. Zoology 4th Semester
Paper E04b : Applied Entomology

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT I

Insects in relation to man: sericulture, apiculture and lac culture and its parasites, predators and diseases. Insect of veterinary importance; sand fly, horse fly, sucking louse, fleas.

UNIT II

Brief knowledge of important household, vegetable, store grain and fruit pests with special reference to distribution, habits, habitat, nature of damage, life history and control. Cut worm (*Agrotis ipsilon*) Cabbage caterpillar (*Pieris brassicae*) Rice weevil (*Sitophilus oryzae*) Mustard aphid (*Lipaphis erysimi*) Red cotton bug (*Dysdercus cingulatus*) Woolly apply aphid (*Eriosoma lanigerum*) Termite: important termites of Fam. Termitidae (*Odontotermis sp.*)

UNIT III

Origin of pests, Insect pest control; mechanical, physical, culture, biological. Fenetical control: chemosterilants, radiation.

UNIT IV

Integrated Pest Management (IPM), Role of pheromones and hormones in insect pest management. Legislative control of insect pests and quarantine law. Nomenclature and classification of insecticides on the basis of mode of action, chemical nature. Environmental factors influencing effectiveness of insecticides, persistence, biodegradability, hazards of insecticides, precaution and antidotes.

Recommended Books:

1. Ananthkrishnan TR: Applied Entomology
2. Atwal: Agricultural Pests of India and South East Asia (1986, Kalyani Publishers)
3. Fernald HT, HH Shepard: Applied Entomology, McGraw-Hill, 1955 .
4. Hill: Pest of stored foodstuffs and their control (2002, Springer)
5. McGavin: Essential Entomology (2001, Oxford Univ Press)
6. Metcal & Flint: Destruction and useful Insects, Tata McGraw-Hill, 1979.
7. Mullen and Durden: Medical and Veterinary Entomology (2002, Academic Press)
8. Pruthi HS: Text Book on Agricultural Entomology, ICAR Publication, 1969.
9. Srivastava: A text book of applied entomology, Vol I & II (1993, Kalyani Publishers)

M.Sc. Zoology 4th Semester
Paper E04c : Applied Environmental Biology

No. of Lectures /week
(3 lectures of 60 minutes each)

UNIT II

Air: Air pollutants (chemistry, sources & control); Air Quality standards, carbon credits, carbon footprint, Thermal pollution sources and effect. Water: Biochemical aspects of water pollutants (domestic, industrial & agricultural waste). Waste water treatment (Aerobic & anaerobic treatment processes); Water quality standards. Case study-Ganga Action Plan. Noise Pollution: Effects of noise and its control.

UNIT II

Radioactive fallouts its effects & safe disposal. Solid waste management: Sources & control methods (composting, Vermi Culture, Biogas). Hazardous waste & their management. Bioremediation (herbicides, pesticides, hydrocarbons, oil spills). Ecological Restoration: wasteland & its reclamation & restoration.

UNIT III

Environmental Impact Assessment (EIA): Case study of River valley projects & Mining. Bioassay: Dose-response relationships; Frequency; Response & cumulative response; statistical concepts (LD50-potency v/s Toxicity). Concept of hyper & hypo sensitivity factors affecting Toxicity.

UNIT IV

Ecological experimentation & models: Theories & hypothesis; experimentation; Inductive & deductive methods. Models: Analytical & simulation models; Validation & verification. Biological pest control: Use of predators; Parasites, parasitoids & pathogenes; Integrated Pest Management.

M.Sc. Previous (Zoology) 1ST Semester
Lab Course LC01

Non Chordate (Invertebrate)

1. Study of museum specimens/slides (WM/TS/LS) of: Protozoa to Echinodermata
2. Collection, fixation and permanent stained preparation of rectal ciliates and Helminthes

Cell biology

1. Study of meiosis in grasshopper testes by squashing method
2. Temporary squash preparation of polytene chromosomes from salivary glands of *Drosophila* larvae
3. Study of colchicinated metaphase chromosomes in bone marrow of rodent by air dry method
4. Study of permanent slides for the following
 - a. Dicentric bridge in the anaphase 1 chromosomes of grasshopper
 - b. Inversion in polytene chromosomes
 - c. Lampbrush chromosomes of *Triturus* oocyte
 - d. G-banded and C-banded metaphase chromosomes
 - e. Chromatid exchanges and chromosomal anomalies
 - f. Sister chromatid exchanges
 - g. Premature chromosome condensation

Genetics

1. Handling of *Drosophila* and study of its life cycle
2. Examination of wild type (males and females) and mutants of *Drosophila*
3. Sex linked inheritance in *Drosophila melanogaster*
4. Linkage and crossing over in *Drosophila melanogaster*

Developmental Biology

1. Collection of frog spawns and observation of different developmental stages
2. Study of embryonic developmental stages in frog through models
3. Study of spiral cleavage in eggs of snail
4. Study of embryonic development in chick through slides
5. Window preparation to study chick embryo development
6. Whole mount preparation of chick embryos at various stages of development

Distribution of marks:

Duration 5

hrs.

1. Spotting (10) (Protozoa to Echinodermata)	20
2. Exercise on Cell biology	10
3. Exercise on Genetics	10
4. Exercise on Developmental Biology	10
5. Permanent slide making (2)	10
6. Record and collection	10
7. Viva Voice	10
8. Sessional Marks	20
Total	100



M.Sc. Previous (Zoology) 2nd Semester
Lab Course LC02

Microbiology

1. Sterilization techniques, media preparation and agar plate preparation
2. Measurement of growth curve of *E.coli.*, calculation of its generation time and viable cell counting
3. Induction of β -galactosidase in *E.coli*

Parasitology:

Study of permanent slides of parasitic protozoans, helminthes and insects

Physiology

1. Estimation of total leucocyte and erythrocyte number per cubic mm.
2. Differential count of leucocytes
3. Determination of clotting time
4. Determination of haemoglobin percentage
5. Preparation of haematin crystals
6. Blood group test
7. Determination of respiratory rate of fish
8. Action of amylase, pepsin and lipase on their respective substrates

Immunology

1. Separation of macrophages from mice and their identification on the basis of non specific esterase staining
2. Immunization of rabbit and collection of antisera
3. Demonstration of antigen-antibody reaction by immunodiffusion
4. Demonstration of direct ELISA
5. Demonstration of western blotting

Molecular Biology and Biotechnology

Demonstration of DNA amplification by polymerase chain reaction and Southern hybridization

Distribution of marks:

Duration 5 hrs.

1. Spotting (10) Parasitology	20
2. Exercise on Physiology	10
3. Exercise on Immunology	10
4. Exercise on Microbiology/Biotechnology	10
5. Permanent slide making (2) Parasites	10
6. Record and collection	10
7. Viva Voice	10
8. Sessional Marks	20
Total	100

M.Sc. Final (Zoology) 3rd Semester
Lab course LC03

Study of museum specimens of: Protochordates; Cyclostomes; Fishes; Amphibia; Reptiles; Birds; Mammals

Preparation of Permanent slides:

Ecology

1. Determination of standing crop energy status in a grassland area and construction of number'and 'biomass (wet weight) pyramids
2. Study of biotic components of a terrestrial ecosystem and description of themorphological adaptations of the collected organisms
3. Study of biotic components of a pond ecosystem and description of morphological adaptations of the collected organisms
4. Estimation of autotrophs in a terrestrial ecosystem
5. Frequency of different species
6. Abundance of species in the community
7. Density of different species in the community by quadrat method
8. Estimation of heterotrophs in a terrestrial ecosystem
9. Determination of texture, pH, carbonate, nitrate and base deficiency in different soil samples
10. Measurement of chlorophyll content per unit area of a grass field
11. Estimation of grasshopper population density of an area by capture-recapture Method
12. Measurement of oxygen change and productivity differences in a pond ecosystem by Wrinkler's method

Biological tools

1. Study of different components of student's microscope and its assembly
2. Study of different components of stereobinocular microscope and its assembly
3. Study of different parts of binocular research microscope
4. Measurement of microscopic object using ocular and stage micrometers
5. Setting up of darkfield and phase contrast microscope
6. Demonstration of working of fluorescence, confocal and electron microscopes

Distribution of marks:

Duration 5 hrs.

1. Spotting (10) (Protochordate to Mammal; Histology; Osteology)	20
2. Exercise on Ecology	10
3. Exercise on Biological tools	10
4. Microtomy of fish/Insect tissue or	15
5. Comment upon dissected Chordates	05
6. Record and collection	10
7. Viva Voice	10
8. Sessional Marks	20
Total	100

M.Sc. Final (Zoology) 4th Semester
Lab Course LC 04

Animal Behaviour

1. Study of habitat selection in spiders or larvae of *Drosophila melanogaster* or woodlice
2. Study of learning behaviour in mice by using a zigzag or T-shaped maze
3. Study of wall-seeking behaviour in mice
4. A field study of foraging or trail making behaviour in a seed harvester or predatory ant species
5. Study of nest building behavior in birds

Endocrinology

1. Study of histological slides of TS/ LS of major endocrine glands of frog and mammal
2. Comment upon the photographs of patients suffering from various endocrine disorders

Biochemistry

1. Preparation of buffer and measurement of pH using pH meter
2. Demonstration of separation of subcellular organelles by differential centrifugation
3. Verification of Beer's law and preparation of absorption spectrum of riboflavin
4. Demonstration of separation of protein by native and SDS-polyacrylamide gel Electrophoresis
5. Separation of amino acids by paper chromatography
6. Studies on quantitation of proteins by various methods : Biuret, Lowry, Bradford, and UV spectrophotometry

Fish biology/ Entomology/

1. Study of external morphology and internal anatomy of common fishes/insects.
2. Taxonomic identification of locally available common fishes/insects.
3. Dissection of accessory respiratory organs and webarian ossicle of locally available food fishes
4. Permanent preparation of material/tissues from common fishes/insects
5. Study of histological slides of different organ systems of fishes/insects
6. Determination of Age in Fishes by Scale, otolith and vertebrae methods.
7. Estimation of fecundity, Measurement of egg size(Fish/insect) by micrometry

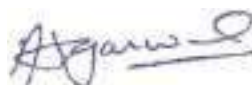
Environmental biology

(Exercise on environmental biology based on theory paper E03c and E04c)

Water quality analysis: Measurement of dissolved oxygen, free carbon dioxide, pH, turbidity, hardness, alkalinity, BOD, COD, dissolved nutrients (Nitrates, phosphates, sodium, potassium, chloride, etc.), Sampling of terrestrial flora and fauna by quadrat method and their population study. Sampling and study of aquatic fauna and flora (plankton, periphyton, micro and macroinvertebrates, nekton, etc.). Measurement of soil pH, water holding capacity, organic matter, soil nutrients (nitrate, nitrite, calcium and magnesium),

Distribution of marks:

	Duration 5 hrs.
1. Spotting (10)	20
2. Exercise on Anatomy (Fish/Insect)/ or /Exercise on environmental biology based on theory paper 15c	10
3. Exercise on Identification (Fish/Insect) or Exercise on environmental biology based on theory paper 16c	10
4. Exercise on Endocrinology	10
5. Exercise on Biochemistry/Animal behaviour	10
6. Record and collection	10
7. Viva Voice	10
8. Sessional Marks	20
Total	100



140
Griev Suman University

Details of PG courses & Syllabus (Physics)
(M. Sc. Two year course, Semester system)

Marks Distribution

Theory : External =80, Internal assessment =20 (80+20= 100) each paper
Practical: (80+ 20=100) each semester, 80 marks Practical + 20 Internal

M Sc I Year

Semester I:

Paper I: Classical Mechanics
Paper II: Mathematical Physics
Paper III: Astrophysics
Paper IV: Electrodynamics
Lab Course: Practical

Semester II:

Paper I: Atomic and Molecular Physics
Paper II: Solid State Physics
Paper III: Statistical Mechanics
Paper IV: Quantum Mechanics
Lab Course: Practical

M Sc II Year

Semester III:

Paper I: Advanced Quantum mechanics
Paper II: Nuclear Physics
Paper III: Particle Physics
Paper IV: Elective: (any one of the followings)
i. Condensed Matter Physics -A
ii. Electronics -A
Lab Course: Practical

Semester IV:

Paper I: Computational Physics
✓ Paper II: Environmental Physics
Paper III: Laser and Fiber Optics
Paper IV: Elective: (any one of the following)
i. Condensed Matter Physics -B
ii. Electronics -B
Lab Course: Practical/ Dissertation (or Project)




M. Sc. I Semester

CLASSICAL MECHANICS

Lagrangian formulation and Variational Principle: Mechanics of particles and system of particles, conservation law, constraints, degree of freedom, generalized coordinates, D'Alembert's Principle, Lagrange's equations of motion from D'Alembert's principle, application of Lagrange's equation of motion to a particle and system of particles, conservation theorem, Hamilton's Variational principle, Euler-Lagrange's differential equation.

Hamilton's formalism: Need of Hamilton's procedure, Legendre's transformation and Hamilton's equation of motion, physical significance of H, cyclic coordinates, Hamilton's equation in cylindrical and spherical coordinates and applications, applications of Hamilton's equation of motion to a particle and system of particles.

Principle of least action (no proof): Canonical or contact transformation, their advantages and examples, condition for a transformation to be canonical, infinitesimal contact transformation (ICT), Poisson brackets: Definition and properties, Invariance with respect to Canonical transformation, equation of motion in Poisson's Bracket form, Jacobian's form.

Mechanics of Rigid Bodies and Theory of Small Oscillations: Coordinates of rigid body motion, Euler's angle, angular momentum of a rigid body moments and products of inertia, principle axis transformation, Euler's equation of motion of a rigid body, stable and unstable equilibriums. Lagrange's equation of motion for small oscillators, normal coordinates and normal mode frequency of vibrations, free vibration of linear triatomic molecules.

Reference Books :

1. N C Rama and P S Joag: Classical Mechanics (Tata McGrawHil, 1991)
2. H Goldstein: Classical Mechanics (Addison Wesley, 1980)
3. A Sommerfeld: Mechanics (Academic Press, 1952)
4. I Peiceivel and D Richards: Introduction to Dynamics (Cambridge University Press)

MATHEMATICAL PHYSICS

Differential Equations: Special equations of Mathematical Physics, Legendre and Associated Legendre equations, Hermite equation, Laguerre equation, Bessel's equation, Beta and Gamma functions, Fourier and Laplace Transforms, Laplace equation and its solution, Poisson, Diffusion and Wave equations, Vibrating membrane.

Group Theory: Definition, Classification of groups, subgroup, cyclic group, isomorphism and homomorphism, classes, vector spaces, representation theory of finite groups, Reducible and Ir-reducible representations, Schur's Lemmas and orthogonality theorem, Characters of representations.

Complex Variable: Function of complex variable, Analytic functions, Cauchy's integral theorem and Cauchy's integral formula, Taylor and Laurent's expressions, theorem of residues, Contour integration.

Matrix and Tensors: Inverse and Trace of Matrix, Unitary Matrices, Orthogonality, Eigen values-Eigen vectors and Diagonalisation of matrices, Coordinate transformation, Covariant and contravariant Tensors, addition, multiplication and contraction of tensors, Associated tensors.

Reference Books :

1. G Arfken: Mathematical Methods for Physicist (Academic Press)
2. Pipes and Harvil: Mathematical Methods for Engineers and Physicist
3. C Harper: Introduction to Mathematical Physics (Prentice Hall of India)
4. A W Joshi: Element of Group Theory for Physicists (Wiley Eastern)
5. Mathematical Physics: Satya Prakash, Pragati Prakashan, Meerut
6. Mathematical Physics: Dass and Verma, S Chand & company
7. Mathematical physics: B S Rajput



ASTROPHYSICS

The universe and Solar System: Basic idea of universe and galaxies, Astronomical telescopes. The solar system, Classification of the Planets, Orbits, Laws of planetary motion, Physical features, surface features, Internal Structure, Atmosphere, Satellites and Rings. Asteroids, Meteors and Meteorites their types, Orbits; physical nature and composition, Origin of the minor planets, Observation of meteor showers and sporadic meteors. Meteorite craters, Origin of Comets, Periodic comets, Physical nature, Spectra, Brightness variation, Gas production rates, dust and ion tails.

Stellar System: Sun As a Star: History of Sun, Sun's interior, the photosphere, the solar atmosphere (chromosphere & corona). Salient features of sunspots, sun's rotation & solar magnetic field, explanation for observed features of sunspots. Distances of stars from the trigonometric. Secular and moving cluster parallaxes. Stellar motions, Magnitude scale and magnitude systems. Atmospheric extinction. Absolute magnitudes and distance modulus, color index. The Hertzsberg- Russell Diagram: The colour, Brightness or luminosity, the population of star. Elementary idea of Binary & Variable Stars. Nuclear fission, Nuclear fusion, condition for nuclear reaction in stars. Types of galaxies, Structure and features of the Milky Way Galaxy.

Physics of the Stars: Apparent and Mean Position of stars. Effects of atmospheric refraction, aberration, parallax, precession, nutation and proper motion on the coordinates of stars. Reduction from apparent to mean places and vice versa. Spectra of Stars. Distribution of stars in space. Statistical parallaxes. Local standard of rest. Solar motion and its determination. Peculiar velocities. Single and Two star stream hypothesis. Velocity ellipsoid. Comparison with solar neighbourhood. Bottlinger's diagram. HR diagram, HD and MK spectral classification of stellar spectra. Radiation laws and basic ideas on spectral line formation. Explanation of stellar spectra in terms of Boltzmann and Saha equations. Spectroscopic parallax.

Fundamental Equations: Equation of mass distribution. Equation of hydrostatic equilibrium. Equation of energy transport by radiative and convective processes. Equation of thermal equilibrium. Equation of state. Stellar opacity. Stellar energy sources. Stellar models: The overall problem and boundary conditions. Russell-Voigt theorem. Dimensional discussions of mass-luminosity law. Polytropic configurations. Homology transformations.

Reference Books:

1. Principles of Stellar Dynamics, S.Chandrasekhar
2. The Great Universe, G K Sudarshan, S chand Publications.
3. Our Solar System, Joshi and Rana, New Age Publicatiopns
4. Galaxies and Universe , K.C.Freeman:
- 5 The Origin and Evolution of Galaxies , S.D.M.White:
6. Lecture notes on "Dynamics of Stellar Systems", S.M.Alladin:
7. Stars and Galaxies: K.D.Abhyankar (Tata McGraw Hill Publication)
8. Exploration of the Universe: G.Abell
9. The Structure of Universe: JayantNaralikar
10. Physics of Comets: K.S. Krishnaswamy
11. Our solar system: A.W. Joshi & N. Rana
12. Introduction to Astrophysics: Baidyanath Basu
13. Astrophysics of the Sun: Harold Zirin
14. The Quiet Sun: Gibson
15. Stellar Evolution: M. Schwarzschild
16. S.Chandrasekhar: Stellar Structure: S. Chandrasekhar
17. Principles of Stellar Interiors - Vol.I and II: Cox and Guili
18. White Dwarfs, Neutron Stars and Black Holes: Shapiro and Tevkolsky

ELECTRODYNAMICS

Maxwell's equations and Electromagnetic Wave: Equation of Continuity, Displacement current, Maxwell's equations, Poynting theorem, Electromagnetic Wave equation, Propagation of Plane Electromagnetic Wave in free space, conducting and non-conducting medium and ionised gases.

Interaction of Electromagnetic Waves with Matter: Boundary Conditions for the Electromagnetic field vectors, Reflection and Refraction at the boundary of two conducting and non-conducting media, Propagation of Electromagnetic wave between parallel conducting plates, Basic concept of Wave Guides, Scattering by a free and bound electron

Electromagnetic Radiation: Electromagnetic vector and scalar potential, Lorentz and Coulomb Gauge, Lienard-Wiechert potential, Electric and magnetic fields of a charge in uniform motion and concept of virtual photon, Radiation from an Accelerated Charge, Larmor's formula and its relativistic Generalization, Bremstrahlung, Cerenkov radiation.

Relativistic Electrodynamics: Minkowski space, Four vectors, Lorentz transformation of space and time in four-vector form, Transformation of electromagnetic potential, Invariance of Maxwell's field equations in terms of four-vectors, Electromagnetic field tensor, Maxwell's equations in covariance four tensor form, Lorentz force, Invariants of the electromagnetic field.

Reference Books :

1. Electrodynamics - D.J. Griffiths
2. Classical Electrodynamics - J.D. Jackson, Wiley Eastern, New Delhi
3. Classical theory of fields - Landau and Lifshitz, Pergameon Press
4. Electrodynamic wave and fields, R N Singh
5. Classical Electricity and Magnetism- Panofsky and Phillips
6. Electrodynamics of Continuous Media - Landau & Lifshitz
7. Electromagnetic Theory and Electrodynamics - SatyaPrakash

List of Experiments : At least 10 experiments are to be performed

1. Study of LCR circuit
2. Transistorized LCR bridge
3. Study of UJT
4. Study of MOSFET
5. Study of NPN and PNP transistor characteristics
6. Study of DIAC
7. Study of TRIAC
8. Study of FET
9. R.C. Coupled amplifier
10. T.C. Coupled amplifier
11. Study of feedback amplifier
12. Study of Hartley Oscillator
13. Study of Colpit's Oscillator
14. Study of Wien Bridge oscillator
15. Design and study of different Network theorems
16. Study of Hubble's law (from given data)
17. Study of constant density neutron star
18. Study of the static parameters of a Neutron Star model with inverse square density distribution
19. Study of star cluster from a given data
20. Study of Extinction coefficients
21. Study of variability of stars



M.Sc. II Semester
ATOMIC AND MOLECULAR PHYSICS

Atomic Spectroscopy: Fine structure of Hydrogen lines, alkali atom Spectra, penetrating and non penetrating orbits, electron spin orbit interaction, L-S and J-J coupling schemes, Hund's rule Spectra of two valence electron atoms, (Helium, Magnesium), selection rules for atomic transitions, multielectron spectra, Central field approximation Hartree self consistent field theory, Thomas Fermi statistical model, Pauli's exclusion principle and determination of ground state. Zeeman Effect, Paschen Back Effect, Hyper fine structure, Stark effect, width of spectral lines, Lamb shift.

Molecular Spectroscopy: Rotational spectra of diatomic molecules, non rigid rotator, vibrational spectra anharmonic oscillator explanation of rotational vibrational spectra in infrared, molecular dissociation and calculation of dissociation energy, Raman effect and intensity alternation of the rotational bands, Applications of infrared and Raman spectroscopy.

Born- Openheimer approximation: Molecular orbital theory, Heitler-London treatment of Hydrogen molecule ion and Hydrogen molecule, Electronic spectra of molecules, Franck Parabola, Deslandres table, vibrational structure of electronic bands, Intensities of electronic transitions, Franck Condon principle, Condon parabola.

Lasers: Einstein's quantum theory of radiation, Life time. Theory of some simple optical processes, Kinetics of optical absorption, Stimulated emission, laser pumping, three and four level scheme, Threshold condition, different types of lasers, gas lasers: He-Ne, N₂ and CO₂, dye lasers, solid state lasers, semiconductor lasers. Holography and its applications.

Reference Books:

1. Atomic Spectra- H.E white Cambridge University Press, Newyork, 1935)
2. Principle of Atomic Spectra - Shore and Menzel
3. Spectra of Diatomic Molecules - G. Herzberg
4. C.B.Banewell: fundamentals of Molecular Spectroscopy
5. Molecular Spectroscopy - Arul Das.
6. Elements of spectroscopy, Gupta, Kumar & Sharma, Pragati Prakasan, Meerut
7. Laser and applications : Thyagrajan & Ghatak

SOLID STATE PHYSICS

Crystal Binding and Elastic Constants: Ionic Crystal, Covalent Crystal, Metals, Hydrogen bonds, analysis of elastic springs, elastic stress and strain, work done by elastic forces, elastic energy density, stress-strain relations, elastic compliance and stiffness constants, Reduction in number of elastic constants in cubic systems, Elastic waves and velocity in cubic crystals, Experimental determination of elastic constants,

Diffraction and Reciprocal lattice: Diffraction waves by crystals, Bragg's diffraction of X-rays, . Different experimental methods, diffraction of electron and neutron, Inelastic neutron scattering, The atomic scattering factor, Atomic form factor, Structure factor for sc, fcc and bcc lattice, Scattered wave amplitude, Laue equations, Brillouin Zones, Bragg's diffraction condition in reciprocal space.



Phonons and Lattice Vibrations : Quantization of elastic waves, Normal modes of vibration, Concept of phonon, Phonon momentum, Inelastic scattering of photons by phonons, Vibrations of one dimensional monatomic lattice, First Brillouin Zone, Group Velocity, Long wavelength limit, Vibrations of one dimensional diatomic lattice, Infrared absorption and optical properties.

Thermal Properties of Solids: Specific heat of solids, Einstein Model of lattice specific heat, Debye theory of lattice specific heat, Debye approximation, Thermal expansion, lattice thermal conductivity, Electronic heat conduction,

Reference Books:

1. Introduction of Solid State Physics, C Kittel
2. Solid State Physics, Ashcroft & Mermin
3. Solid State Physics- Ajay Kumar Saxena
4. Solid State Physics, A J Dekker;
5. Solid State Physics, S O Pillai
6. Introduction to Solid State Physics, Peterson
7. Solid State Physics, Singhal
8. Solid State Physics, R Asokamani

STATISTICAL PHYSICS

Basic Postulates- Phase space, relation between eigen states and phase space volume, Liouville's theorem, ensembles, Microcanonical, Canonical and Grand canonical ensembles, Maxwell's Boltzmann's distribution and Gibb's formulation for canonical and grand canonical ensembles, partition function, their thermodynamic properties, laws of thermodynamics.

Application of classical distribution to the ideal gases: Degrees of freedom, translational motion, Helmholtz free energy, Gibb's free energy, entropy and thermodynamic properties, Gibb's paradox, Sakur-tetrode equation. Imperfect gases: Difference between ideal and real gas, imperfect gases, Vander Waal's equation, virial coefficients, condensation of gases, general properties of liquids, Fermi theory, liquid Helium, phase rule.

Quantum Statistics: Drawbacks of M B distribution, Bose-Einstein's and Fermi-Dirac distribution, symmetric and antisymmetric particles, partition functions, non degenerate, weakly degenerate and strongly degenerate cases, B.E. condensation, application to He, pressure-energy relationship, electronic specific heat of solids and paramagnetism.

Black Body Radiation: Planck's distribution, pressure and energy relationship of photons, black body radiation, Rayleigh Jean's formula, Wein's law, Wein's displacement formula, absorption and emission of radiation, Stefan's law, high temperature measurements.

Reference Books:

1. E.S. Raj Gopal: Statistical Mechanics and Properties of Matter
2. Mayer And Mayer: Statistical Mechanics
3. Landau and Lifshitz: Statistical Physics
4. Pointon: Introduction to Statistical Physics
5. Huang: Statistical Mechanics
6. Wanier: Statistical Physics
7. Statistical Physics , Raj Kumar

QUANTUM MECHANICS

Introduction: A brief review of foundations of quantum mechanics, basic postulates of quantum mechanics, uncertainty relations, Schrodinger wave equation, expectation value and Ehrenfest theorem., Relationship between space and momentum representation. Schrodinger equation in spherically polar coordinates. Free particle in spherical coordinates, Applications: three dimensional square well potential, three dimensional harmonic oscillator

Matrix Formulation of Quantum Mechanics: Vector representation of states, transformation of Hamiltonian with unitary matrix, representation of an operator, Hilbert Space. Dirac bra and ket notation, projection operators, Schrodinger, Heisenberg and interaction pictures. Relationship between Poisson brackets and commutation relations. Matrix theory of Harmonic oscillator.

Symmetry in Quantum Mechanics: Unitary operators for space and time translations. Symmetry and degeneracy. Rotation and angular momentum; Commutation relations, eigenvalue spectrum, angular momentum matrices of J_x, J_y, J_z, J^2 . Concept of spin, Pauli spin matrices. Addition of angular momenta, Clebsch-Gordon coefficients and their properties, recursion relations. Matrix elements for rotated state, irreducible tensor operator, Wigner-Eckart theorem. Rotation matrices and group aspects.

Approximation Methods for Bound State: Time independent perturbation theory for non-degenerate and degenerate systems upto second order perturbation. Application to a harmonic oscillator, first order Stark effect in hydrogen atom, Zeeman effect with electron spin. Variation principle, application to ground state of helium atom, electron interaction energy and extension of variational principle to excited states, WKB approximation: energy levels of a potential well, quantization rules. Time-dependent perturbation theory; transition probability (Fermi Golden Rule), application to constant perturbation and harmonic perturbation. Semi-classical treatment of radiation. Einstein coefficients; radiative transitions.

Recommended Books:

1. L. I. Schiff, Quantum Mechanics (McGraw Hill).
2. V. K. Thankappan, Quantum Mechanics (Wiley Eastern).
3. P. M. Mathews and K. Venkatesan, A Text-Book of Quantum Mechanics (TMH)
4. C. Cohen-Tannoudji, Bernard Diu, Franck Laloe, Quantum Mechanics Vols-I&II (John Wiley).
5. J. J. Sakurai, Modern Quantum Mechanics (Addison-Wesley).
6. A. K. Ghatak and S. Lokanathan, Quantum Mechanics 3rd ed. (MacMillan).

List of experiments: At least 10 experiments are to be performed

1. Multivibrator Bistable/Monostable/Astable
2. Study of different types of Oscillators
3. Ionisation potential of Mercury using gas filled diodes
4. Michelson Interferometer
5. Fabry Per Interferometer
6. Fresnel's law
7. Determination of absorption coefficient of iodine vapour
8. B-H curve
9. Lecher wire experiment
10. Determination of magnetic susceptibility
11. Study of CRO.
12. Velocity of Ultrasonic waves
13. Linear Air track
14. Determination of Planck's constant
15. Wein's and Stefan's law



M.Sc. III Semester

ADVANCED QUANTUM MECHANICS

Scattering Theory: General considerations; kinematics, wave mechanical picture, scattering amplitude, differential and total cross-section. Green's function for scattering. Partial wave analysis: asymptotic behaviour of partial waves, phase shifts, scattering amplitude in terms of phase shifts, cross-sections, Optical theorem. Phase shifts and its relation to potential, effective range theory. Application to low energy scattering; resonant scattering. Breit-Wigner formula for one level and two levels, non-resonant scattering. s-wave and p-wave resonances. Born approximation

Identical Particles: The Schrodinger equation for a system consisting of identical particles, symmetric and anti-symmetric wave functions, elementary theory of the ground state of two electron atoms; ortho- and Para-helium. Spin and statistics connection, permutation symmetry and Young tableaux. Scattering of identical particles.

Relativistic Wave Equations: Generalization of the Schrodinger equation; Klein-Gordon equation, plane wave solutions, charge and current densities, interaction with electromagnetic fields, Hydrogen-like atom non-relativistic limit. Extension of Klein-Gordon equation to spin 1 particles. Dirac Equation; relativistic Hamiltonian, probability density, expectation values, Dirac gamma matrices, and their properties, non-relativistic limit of Dirac equation. Covariance of Dirac equation and bilinear covariance, plane wave solution, energy spectrum of hydrogen atom, electron spin and magnetic moment, negative energy sea, hole interpretation and the concept of positron. Spin-orbit coupling.

Quantization of wave fields: The quantization of wave fields, Classical and quantum field equations quantization of non-relativistic Schrodinger equation, Second quantization of Schrodinger field, K-G field and Dirac fields, quantization of electromagnetic fields, creation and annihilation operators.

Reference Books:

1. P. M. Mathews and K. Venkatesan, A Text book of Quantum Mechanics (TMH)
2. A. S. Davydov, Quantum Mechanics (Pergamon).
3. L. I. Schiff, Quantum Mechanics (McGraw Hill).
4. J. D. Bjorken and S. D. Drell, Relativistic Quantum Mechanics (McGraw Hill).
5. J. J. Sakurai, Advanced Quantum Mechanics (Addison Wesley).
6. V. K. Thankappan, Quantum Mechanics (Wiley Eastern).
7. R.P Feynman and A.R.Hibbs; Quantum Mechanics and Path Integrals.
8. L.H. Ryder, Quantum field Theory (Academic Press).

NUCLEAR PHYSICS

General Properties & Models:- Nuclear size, nuclear angular momentum (Spin), Nuclear magnetic moments, statistics, Binding energy, Liquid drop model, Shell model, Collective model.

Nuclear Forces and Detectros – Ground state of deuteron, Low energy neutron-proton scattering and proton-proton scattering, Exchange and tensor forces, G.M. Counter, Electron & Proton Synchrotron.

Radioactive decay: Radioactive decay equation equilibrium units, Gamow's theory of alpha decay and Geiger Nuttal law, Fermi's theory of beta decay, parity violation in beta decay, electromagnetic decays.



Nuclear Reactions- Q-value of nuclear reaction, Bohr's Theory of compound nucleus, Scattering cross section of nuclear reaction (phase shift method), Breit Wigner single level resonance formula for scattering cross section.

References Books:

- 1- I. Kaplan: Nuclear Physics
- 2- H.A. Enge : Nuclear Physics
- 3- R.Roy & B.P. Nigam : Nuclear Physics
- 4- R.D. Evans: Nuclear Physics
- 5- E. Segre : Nuclei & Particles.
- 6- B.R. Martin : Nuclear & Particle Physics.
- 7- B.L. Cohen : Concepts of Nuclear Physics.
- 8- S.S.M. Wong : Introductory Nuclear Physics
- 9- S.B. Patel : Nuclear Physics
- 10- S.N. Ghoshal : Nuclear Physics.

PARTICLE PHYSICS

Classification and Properties of Elementary Particles : Elementary Particles, their classification on the basis of their mass and spins (Leptons, Mesons, Baryons) and field quanta. Their general properties (mass, spins, life time and their production and decay modes), Antiparticles.

Conservation Laws and Gauge Invariances: Conservation of Energy, Linear and Angular momentum, Spin, Charge, Lepton No., Baryon No. Isospin, Hypercharge, Parity, Strangeness, Charge conjugation, Time Reversal, CP, CPT theorem, Global and Local gauge invariances.

Fundamental Interaction: Qualitative ideas (Relative strengths, Ranges, Characteristic times and Mediators) of Gravitational, Electromagnetic, Strong and Weak Nuclear interactions. General idea of Electro-weak and Grand unifications.

Quark Model: Eight fold way, Quarks as building blocks of hadrons, six quarks (u, d, s, c, t and b). Antiquarks, General properties of quarks (Charge, Mass, Colour - A new degree of freedom, quark confinement, Asymptotic freedom) Evidences for Quarks (Lepton scattering, Hadron Spectroscopy, Jet production), Quark compositions of Mesons and Baryons. General idea of Standard Model. Idea of Higgs Boson.

Reference Books:

1. Introduction to High Energy Physics-D.H.Perkins. (Addison - Wesley-1986)
2. Introduction to Nuclear & Particle Physics.Mittal, Verma & Gupta (Prentice Hall of India, Pvt.Ltd., New Delhi,
3. Concepts of Modern Physics- Arthur Beiser (Tata McGraw Hill Edu.Pvt Ltd., New Delhi, Sixth Ed. 2009
4. Quarks and Leptons- An Introductory course in Modern Particle Physics-Francis Halzen & A D.Martin ,John Wiley & Cons.Inc.
5. Nuclear and Particle Physics, W.E. Burcham& M. Jobs (Essex,England ISE Reprint
6. Introduction to Particle Physics-M.P. Khanna, (Prentice Hall India)
7. Introduction to Elementary Particle Physics-D.Griffiths (John Wiley 4 sons,1987)
8. Elementary Particle Physics-Gasiorowicz (John Wiley & sons, 1966).
9. Nuclear & Particle Physics-B.R. Martin & G. Shaw(John wiley& sons, 1997)
10. A Modern Introduction to Particle Physics- Riyazuddin and Fayazuddin
11. Particle Physics- M.Leon
12. Principles of Physics- Resnick, Halliday& Walker (John wiley&sons,England) 9th

Extended edition, 2013, chapter 44)

13. Modern Elementary Particle Physics G. L. Kane (Addison- Wesley 1987).
14. Grand Unified theories, Graham Ross.
15. Gauge Theories of Strong, Weak and Electromagnetic Interactions, C. Quigg (Addison – Wesley)
16. Gauge Theory of Elementary Particle Physics , T.D. Cheng and Ling Fong Li (Clarendon Oxford)

Elective I :-CONDENSED MATTER PHYSICS- A

Defects in crystals: Point defects, Impurities, Vacancies, Frenkel defects, Schottky defects, Intrinsic vacancies, Concentration of Schottky defects, Concentration of Frankel defects, extrinsic vacancies, Diffusion, Colour centres, F-Centre, V-Centre, dislocation, Line defects, edge dislocation, screw dislocation, Burger vector.

Magnetism: Magnetic materials and their importance in solid state physics. Dia, Para and ferromagnetism, Langvin's theory of paramagnetism, Ferromagnetism, Weiss molecular theory, quantum theory of ferromagnetism, Bloch wall, Temperature dependence of spontaneous magnetism, Ferromagnetic domains, Antiferromagnetism, Neel's theory, Two sublattice model, ferrites,

Energy Bands: Origin of energy gap, Magnitude of the energy gap, Brillouin Zone, Bloch function, Bloch theorem, velocity of electrons, Kronig penny model, Number of possible wave function in a band, crystal momentum, the concept of effective mass, concept of holes, hole band construction, distinction between metal, insulator and semiconductor, experimental evidence of band theory.

Dielectric and electrical properties of insulators: Polar and non polar dielectrics, Polarization, Internal Lorentz field static dielectric constant, measurement of dielectric constant, Macroscopic description of dielectric constants, electronic ionic and orientational polarizability of molecules. Complex dielectric constant, Dielectric loss and relaxation time, Optical absorption. Piezoelectric effect, and its applications, piezoelectric crystals and uses, ferroelectricity, antiferroelectricity, uses of ferroelectric materials.

Reference Books:

1. Introduction to solid state Physics: Kittel
2. Principles of theory of solids: Ziman
3. Quantum theory of solids: J. Callaway
4. Solid State Physics: A.J. Dekker
5. Intermediate Quantum theory of crystalline solids: Anmalu
6. Solid State Physics: N W Ashcroft and N David Mermin
7. Solid State Physics: Ajay Kumar Saxena
8. Solid State Physics: Ashcroft and Mermin
9. Solid State Physics: Saxena Gupta Saxena
10. Solid State Physics: R.L. Singhal
11. Solid state physics: S O Pillai



Elective-II: Eletronics A

Transistor Oscillators and Multivibrators: Tuned collector oscillator, tuned emmitter oscillator, tuned based oscillator, Hartly, phase shift, Colpit's, Clapp, Wein bridge, RC and crystal oscillator, frequency stability, Switcing characteristics of transistor, Astable, Mono and Bistable multivibrators, Schmitt trigger-bootstrap-sweep circuits.

Combinational digital circuits: Implementations of Logic Functions using gates, RTL, DTL, TTL, ECL MOS and CMOS Logic and their characteristics, 7400 Series. Adders, Subtractors, Serial adder/ Subtractor, Parallel adder/ Subtractor, Carry look ahead adder, BCD adder, Magnitude Comparator, Multiplexer, Demultiplexer, Encoder, Decoder, Parity-checker, Code converters

Sequential Circuits: Flip flops: SR, RS, JK, T, D and Master-Slave flip flops, Characteristic table and equation, Edge triggering, Level Triggering. Registers & Counters: Asynchronous/ Ripple counters, Synchronous counters, Modulo-n Counters, Shift registers, A/D and D/A converters, Universal shift register, Shift counters, Ring counters.

Memory Devices & IC-Technology: Classification of memories, RAM organization, Write/Read operations, Memory cycle, Timing wave forms, Memory decoding, Memory expansion , Static RAM Cell-Bipolar RAM cell, MOSFET RAM cell, Dynamic RAM cell, ROM organization – PROM, EPROM, EEPROM, EAPROM ,Programmable Logic Devices, Programmable Logic Array (PLA), Programmable Array Logic (PAL).Basic Ideas of IC-Technology, Monolithic IC's, IC Components- Resistors (Integrated, Diffused, Thin Film), MOS Capacitors, Inductors, Bipolar Transistors, Thin Film Technology, LSI, MSI.

Reference Books:

1. Integrated Electronics ,Millman & Halkias , (McGraw Hill)
2. Electronic devices and circuit theory, Boledsted
3. Electronics-fundamentals and applications, Ryder, (PHI)
4. Optical fibre communications Keiser, (McGraw Hill)
5. Nonlinear fibre optics, Agarwal ,(AP)
6. Digital Principles and Applications , Malvino& Leach:
7. Digital Design , Morris Mano
8. Digital Fundamentals, Thomas L. Floyd;
9. Hand Book of Electronics, Gupta Kumar. Pragati prakashan
10. Digital electronics: Principle and Practice, Avinashi Kapoor and Maheshwari, Macmillon Publications

List of experiments: At least 10 experiments are to be performed

1. Study of regulated power supply (723).
2. Study of Timer (555).
3. A to D and D to A convertor
4. 1 of 16 Decoder/Encoder
5. Study of Multiplexer/Demultiplexer
6. Study of Comparator
7. Study of different flip- flop circuits (RS, JK, D Type, T-type, Master Slave).
8. Study of Digital combinational and sequential circuits
9. Study of Microprocessor (8085)
10. Study of SCR, DIAC, TRIAC
11. Study of IC- Based Power supply
12. Shift Registers

13. σ/m by Zeeman effect
14. G.M. Counter
15. Study of IC- Based Power supply
16. Absorption spectroscopy by spectrophotometer
17. Study of optoelectronic devices
18. Measurement of thickness of thin wire using laser.
19. Logicom AND/OR/NAND/NOR/NOT gates
20. Study of pin connection and biasing of various linear IC's and timers 555

M.Sc. IV Semester

COMPUTATIONAL PHYSICS

Interpolation: Roots of functions, Finite differences, Interpolation with equal and intervals, Central difference Interpolation, Inverse interpolation, Numerical differentiation, Numerical integration, integration by trapezoidal and Simpson's rules, Least square fitting method: Straight line, fitting, fitting of parabola, exponential function

Solution of ordinary differential equations and linear equations: Tylor's series, Eulers method, Runge-Kutta Method, Eigenvalues and eigenvectors of matrices, power and Jacobi method, solution of simultaneous linear equations Gaussian elimination, Pivoting, Iterative method, matrix inversion.

Fortran Programming : Flowchart and algorithm, Problem analysis, flowchart of some basic problems. Fundamentals of Fortran 90/95, constant and variables, input/output statements, conditional statements, loops and control, constructs, arithmetic and logical operators and expressions, Format statements, Strings, arrays, pointers, control constructs, Functions, sub programs and modules.

Solutions of physics problems using Fortran Programming : Sum of finite Sin, Cos, Log and exponential series, Integration by Simpson 1/3, 3/8th and Trapezoidal rules, Matrix product and transpose, Roots of Quadratic equation, Projectile motion, Equation of motion, Motion in central field, Solutions of linear equations, Least square fitting of straight line and parabola.

Reference Books:

1. B.D.Hahn: Fortran 90 for Scientists and engineers.
2. VRajaraman: Computer Programming in c.
3. Computer Oriented numerical methods V Rajaraman:
4. Wong: Computational methods in Physics and engineering.
5. S.BalachandraRao: Numerical Methods.
6. Computer programming in Fortran 90/95, V Rajaraman, PHI
7. Numerical Analysis by G Shankar Rao, New Age International

ENVIRONMENTAL PHYSICS

Essentials of Environmental Physics: Structure and thermodynamics of the atmosphere, Composition of air, Green House Effect, Transport of Matter, Energy and momentum in Nature, Stratification and stability of atmosphere. Laws of motion, hydrostatic equilibrium.

Solar and Terrestrial: Physics of Radiation, Interaction of light with matter, Rayleigh and Mie scattering, laws of radiation(Kirchoff's law, Plank's law, Wein's displacement law etc.) , solar and terrestrial spectra, UV radiation. Ozone depletion problem, IR absorption.

Environmental Pollution and Degradation: Elementary fluid dynamics, Diffusion, Turbulence and turbulent diffusion, Factors Governing air, water and noise Pollution, Air and water quality standards, Waste Disposal, Gaseous and particulate matters, wet and dry deposition. Energy sources and combustion processes.

Environmental Changes, Remote Sensing Global and regional Climate: Renewable Sources of energy, Solar energy, wind energy, bioenergy, hydropower, fuel cells, Nuclear energy, Elements of weather and climate, Stability and vertical motion of air, Horizontal motion of air and water, Pressure gradient forces, viscous forces, Inertia forces, Reynolds number, enhanced Greenhouse effect, Global Climate Models.

Referene Books:

1. Egbert Boeker & Rienk Van Groundelle : Enviromental Physics (john wiley)
2. J.T. Houghton : The Physics of Atmosphere (Cambridge Univ.Press, 1977)
3. J. Twidell and J. Weir : Renewable Energy Resources (Elbs, 1988)
4. Sol Wieder : An Introduction to Solar Energy for Scientists and Engineers (John Wiley, 1982)
5. R.N. Keshavsamurthy and M. Shankar Rao : The Physics of Monsoons (Allied Publuishers, 1992)
6. J. Haltiner and R. T. Williams : Numerical Weather Prediction (John Wiley, 1980)

LASER PHYSICS

Basic principles: Basic principles and theory of absorption and emission of radiation, Einstein's coefficients, line-broadening mechanisms, rate equations for three and four level laser systems, population inversion, theory of optical resonators, laser modes, spatial and temporal coherence.

Types of lasers: Gas lasers, He-Ne, argon ion, N₂, CO₂ lasers; dye lasers, solid state, Semiconductor lasers: Ruby, Nd:YAG and Nd:glass lasers, Fabrication technology of lasers, diode lasers, colour centre and spin flip lasers, laser spikes, mode locking Q-switching, CW and pulsed lasers.

Non linear optics: Theory of non linear phenomenon, second and third harmonic generation, phase matching, parametric generation, self focussing

Laser spectroscopy: Laser fluorescence spectroscopy using CW and pulsed lasers, Single photon counting, Laser Raman apectroscopy, multiphoton processes, photo acoustic and photon electron spectroscopy, stimulated Raman spectroscopy, Coherent antistokes Raman spectroscopy.

Reference Books:

1. Ghatak and Thyagrajan: Lasers
2. O. Svelto: Principles of Lasers
3. Silvfast: Lasers
4. B.B.Loyd: Lasers



Elective-I: CONDENSED MATTER PHYSICS- B

Free electron and Nearly free electron Theory: Nearly free electron model, One dimensional free electron case, Sommerfeld model, Fermi-Dirac distribution, Quantum theory of free electron in a box, Fermi gas, Nearly free electron case, energy bands in one dimension, tight binding approximation, energy surfaces, Wigner Seitz cellular method, Orthogonalized plane wave (OPW) method, Pseudo potential method, Limitations of band theory.

Transport Properties of Solids and ordered phase: Boltzmann transport equation, Mean free path, Hall effect, Hall voltage and coefficient, experimental determination of hall coefficient, resistivity of metals and semiconductors, thermoelectric phenomena, Onsager coefficients. Ordered phases of matter, translational and orientational order, kinds of liquid crystalline order, Quasi crystals.

Superconductivity: Experimental Survey, Occurrence of super conductivity, destruction of superconductivity by magnetic field and temperature, Meissner effects, Type-I and Type-II superconductors, Isotope effect, Thermodynamics of Superconducting transition, London Equations, Coherence length, BCS Theory, Cooper pairs, Josephson superconductor tunneling, AC & DC Josephson effect, High temperature superconductors, critical fields and critical currents.

Nano Material Science and Technology: History, Origin, Quantum dots, Synthesis, Applications and advantages, Quantum wires, Quantum well & application, Fullerenes, Carbon nanobuds, carbon nanotubes as quantum wires, Areas of Nanotechnology, nanomaterials, nanoelectronics, nanobiotechnology, nanofabrication, microelectromechanical systems (MEMS)

Reference books

1. Principle of condensed matter Physics : Chaikimand Lubensky
2. Solid State Physics : Kubo and Ngamia
3. Elements of Solid State Physics : Srivastava
4. Introduction to Solid State Physics : Madelung
5. Introduction to Solid State Physics : Paterson
6. Introduction to Solid State Physics : Kittel
7. Solid State Physics-N W Ashcroft & N David Mermin
8. Solid State Physics-Ajay Kumar Saxena
9. Introduction to Nano Technology: Poole and Owners
10. Quantum Dots: Jacak, Hawrylak and Wojs
11. Handbook of Nano Structured Materials and Nano Technology: Nalva(Editor)
12. Nano Technology/ Principles and Practices: S K Kulkarni
13. Carbon Nano Tubes: Silvana Fiorito
14. Nano Technology: Richard Booker and Earl Boyesen

Elective-II: ELECTRONICS - B

Modulation and Demodulation: AM and FM (Transmission and reception): Modulation, AM generation, Power consideration, Balanced modulator, SSB transmission AM detection, AGC, Signal to noise ratio, FM analysis, noise considerations, generation, direct method and reactance tube method, FM transmitter, AFC, FM Propagation, phase discriminator. Envelope diode detector, super regenerative detection, Ratio Detector

Propagation of radio waves and Radar system: Ground wave, sky wave and space wave propagation, Ionosphere (Eccle- larmer theory, magneto ionic theory), Appleton-Hartee theory of skywave propagation, Principle of Radar, Basic arrangement of Radar system, Azimuth and Range measurement, operating characteristics of systems, Radar transmitters and Receivers, Duplexers, Indicator unit, maximum range of a Radar set.

Transmission Lines: TL Equations and their solutions, transmission line as a two conductor system, transit time effect, calculation of line parameters, voltage and current relation on radio frequency transmission line, propagation constant and its physical significance, line distortion and attenuation, characteristic impedance, characteristic impedance, lossless open and short circuited lines, standing wave ratio and reflection coefficient, stub matching, quarter wave length and half wave length lines.

Antenna: Radioactive field strength, power and radiation patterns of an elementary electric doublet and linear antenna, effects of ground reflection. Hertz antenna, Marconi antenna, Yagi antenna, loop antenna, direction finding, Resonant & Non resonant Antenna, Antenna array (Broad side & End fire arrays), T.V. aerials. Horn Antenna, dish antenna, Parabolic reflectors, Lens Antenna. Satellite communication.

Reference Books :

1. F.E. Terman – Radio Engineering
2. G. Kennedy & B. Davis – Electronic Communication Systems
3. G.K. Mithal – Radio Engineering Vol. II
4. G. Keiser – Optical Fiber Communication
5. C.K. Sirkar & S.K. Sirkar, Fiber optical Communication Systems.
6. Gupta & Kumar – Handbook of Electronics
7. Frenzel – Communication Electronics
8. Rody & Coolen - Communication Electronics.
9. L.E. Frenzel – Communication Electronics

List of experiments/Dissertation:

1. Study of computational software's.
2. Study of numerical techniques.
3. Computer programming.
4. Study of Modulation and Demodulation (Amplitude & Frequency).
5. Study of operational amplifier
6. Dielectric constant
7. Measurement of wavelength of He-Ne laser using interference and diffraction pattern
8. Fiber Optics communication.

Note: Either student should perform the experiments or complete the dissertation.



**S.D.S UTTARAKHAND UNIVERSITY BADSHAI
THAUL TEHRI GARHWAL**

B.A/B.Sc. ANNUAL COURSE
SYLLABUS
ANTHROPOLOGY

B.A./B.Sc. Part – I

MM

- Paper - I : Social and Cultural Anthropology
50/50
- Paper - II : Physical Anthropology
50/50
- Paper - III : Paleo Anthropology
50/50
- Paper - : Practical
50/50

B.A./B.Sc. Part - II

- Paper - I : Prehistory
50/50
- Paper - II : Tribal and Peasant Cultures
50/50
- Paper - III : Anthropological Theory
50/50
- Paper - : Practical
50/50

B.A./B.Sc. Part - III

- Paper - I : Research Methods
50/50
- Paper - II : Human Genetics
50/50

Paper - III : Ethnology of India
50/50

Practical and Field report
50/50

B.A./B.Sc. Part - I

Paper - I: Social and Cultural Anthropology.

M.M.50/50

1. Anthropology, Definition, Aims, Objectives and Scope.
2. Basic Concepts in Social Anthropology, Society, Group, community, Status and Role, Caste and Class, Structure & Organization, Language and Society.
3. Basic concepts in Cultural Anthropology: Culture, Culture-Trait, Culture-Complex, Culture-Area, Culture-theme, Culture-pattern, Culture configuration, Acculturation and Diffusion.
4. Marriage: Problem of Definition, Types of Marriages, ways of Acquiring mates, Hyper gamy, Hypo gamy Levirate, Sororate.
5. Family : Definition, function and form, Universality of family as an institution.
6. Kinship: Definition, Rules of Descent-Unilateral, Bilateral, and Double, rules of Residence-Uxorilocal virilocal, neolocal, matrilineal and patrilineal; Kinship Usage, Avoidance, Joking relations, Avunculate, Amitate and Couvade.
7. Economic organization: Definition, Primitive law, social sanctions, social control and government, state and stateless system.
8. Religion and Magic: Definition and differences, animism, mana and totem.
9. Political organization: Definition Primitive law, social control and Government, State and state less system.

Book Recommended:

Beals and Hoizer Introduction to Anthropology Firth, Raymond: Human Types.
Hammond, P.B.: Culture and Social Anthropology. Lenhardt, G: Social Anthropology.
Mair, L : Introduction to Social Anthropology.
Majumdar, D.N. and T.N. Mandan : Introduction to Social Anthropology.
Mathur, Vidyarthi and Singh: Manavashashtra Ki Rooprekha.
Misra and Tiwari: Bharteeya Adivasi.
Shapiro, H.L.: Man, Culture and Society.
Herskovits, M.J.: Culture Anthropology.
Hindi translation of these books is available.

1. Physical Anthropology: Definition, Aims, Objectives and Scope.
2. Organic Evolution: Lamarckism and Darwinism.
3. Man's Place in Animal kingdom: Taxonomy.
4. Comparative Anatomy (Man and Anthropoid Apes) of:
 - (i) Dentition
 - (ii) Skull
 - (iii) Limb Bones
 - (iv) Girdles
5. Elementary Human Genetics:
 - (i) Mendel's laws of inheritance.
 - (ii) Cell : Its structure and Division.
 - (iii) Simple and single factor inheritance and sex-linkage.
6. Characteristics and Distribution of Caucasoid, Mongoloid and Negroid
Great Racial Divisions of Mankind.
7. Elementary Blood Groups: ABO and Rh factor.
8. Elementary Dermatoglyphics. Types of Finger Prints.

Books Recommended:

Dobzhansky. T. : Evolution.

British Museum : Handbook of Evolution.

Howells. W.W. : Mankind in the Making.

Ghosh and Ghosh : Introduction to Physical Anthropology. Das, B.M. : Outline of Physical Anthropology.

Kurte Stern : Human Genetics.

Sigh, R.D. : Sharirik Manavavigyan.

Nath, Surinder : Finger Print Identification.

1. Paleoanthropology : Definition, Aims, Objectives and Scope.
2. Dating method and Geological Time Scale.
3. Fossils and Fossilization.
4. Fossil Primates and Apes-Prosimian Primates Proplipithecus, Aegyptopithecus, Dryopithecus, Ramapithecus, Kenyapithecus, Sicapithecus.
5. Australopithecus Africanus and Paranthropus Robustus, Homo Habilis, Australopithecus, Afarensis.
6. Homo erectus erectus and Homo erectus pekinensis: Distribution, Characteristics and Comparison, Solo Man, Heidelberg Jaw.
7. Homo Sapiens Neanderthalensis : Characteristics and Distribution, Classical and Progressive, Cro-Magnon, Rhodesian Man.

Books Recommended:

- (1) Das, B.M. : Outline of Physical Anthropology.
- (2) Shukla, B.R.K. and Sudha Rastogi : Physical Anthropology and Genetics.

Practicals:

M.M. 50/50

Time 4 hours

The Student shall do following exercises in Physical Anthropology:

- (a) Somatometry : Stature, Sitting Height, Weight, Maximum Head Length, Maximum Head Breadth, Nasal Length, and Nasal Breadth, Cephalic Index and Nasal Index. Height Acromion. Illiocristale and Height Dectylion and Bigonial Breadth.
- (b) Craniometry : Cranial Length, Cranial Breadth, Nasal Length, Nasal Breadth, Cranial Index and Nasal Index, Length of Foramen magnum, Frontal Breadth, Total Height of Skull and Bigonial Breadth.
- (c) Basic Dermatoglyphics : Identification of basic pattern of 5 individuals on finger balls.
- (d) Osteology:
Identification of Long Bones.
 - (1) Humerus
 - (4) Femur
 - (7) Skull
 - A. Norma Lateralis

(2) Radius

(5) Tibia

(6) Fibula

(3) Ulna

B. Norma Verticals

C. Norma Faciolis
Division of Marks
Practical Examination Record Book
Viva-Voce.

B.A./B.Sc. Part - II

Paper - I: Prehistory.

M.M. 50/50

1. Prehistory-Meaning and scope.
2. Absolute and relative Dating methods in Prehistory: Radiometric 14 K/A, U/ TH. Dendrochronology, glacial verbs, obsidian, Thermoluminiscence. Archaeo-magnetic Recimization, Geochronology. Pollen Analysis, Paleontology, Age-area, Seriation
3. The Great Ice Age : Stratigraphic and other evidences of Ice-Age, river terrace, moranines and eustate fluctuations. Alpine and Himalayan Glaciation.
4. The Stone Age Tools : Technology and Typology : Biface, Chopper/Chopping side-scraper, and scraper Burin, Borer, Clactonian, Lavelloisean, Block-on-Block, Cylinder Hammer, Bipolar, Resolved.
5. Paleolithic Period : Its Economy and Habitat : The chief sub-division of Indian Paleolithic and their stratigraphic and technological features. The main stratigraphic and technological features. The main features of upper Paleolithic art and its significance.
6. Mesolithic stone-age industries in India.
7. The emergence of food-production in settled economy and the chief features of the Neolithic revolution. The Neolithic complex of India.
8. The general features of the Urban revolution, the chief characteristics of the Indus civilization.
9. Chalcolithic cultures of India, Ahar, Navdatoli, Jorwe, Inamgaon.

Books Recommended:

Allchin and Raymond : The Birth of Indian civilization. Bhattacharya, D.K.: Prehistoric Archaeology.

Burkitt, Miles : Old stone Age.

Child, V.G.: Manav Pragati Ki Kahani.

Majumdar : D.N. & Gopala Sarana : Pragatihas.

Mathur, Vidyarthi and Singh : manav Shashtra Ki Rooprekha.

Paper - II: Tribal and Peasant Cultures.

M.M. 50/50

1. Concept of Tribe.
2. Classification of Tribes in India : Geographical, Linguistic and Racial.
3. Social Organization of Tribes:
 - (i) Tribal Economy.
 - (ii) System of marriage.
 - (iii) Tribal religion.
 - (iv) Political organization.
4. Tribes and wider social world: Issues of Tribal welfare.
5. Case study of Himalayan Tribe : Jaunsari and Bhotia.
6. Concept of Peasantry.
7. Characteristics of Indian Villages.
8. A study of concepts in the study of Indian Villages:
 - Little and Great Tradition
 - Universalization and Parochialization.
 - Sanskritization and desanskritization
 - Westernization and modernization
 - Secularization and problems of Ethnicity
9. Land and social structure, problems of Agrarian systems.
10. Case study of a Himalayan village : Sirkanda and Kinnaura Village.

Books Recommended:

Srinivas, M.N.: Caste in Modern India and other essays.

Mathur, Vidayarthi and Singh : Manavashastra Ki Rooprekha. Mandelbaum, David : Society in India.

Shanin, T. Peasant Society.

Majumdar, D.N.: Himalayan Polyandry.

Berremen, G.D.: Hindus of the Himalaya.

Srinivas, M.N.: India: Social Structure.

Paper - III: Anthropological Theory.

M.M. 50/50

1. Evolution: Bechofen, McLennan, Morgan, Frazer and Taylor.
2. Diffusionism: British diffusionists, German diffusionists, and American Historicism.

3. Culture and Personality approach.
4. Functionalism and Structure Functionalism.
5. Structuralism.
6. Symbolism.
7. Contribution of some Indian Anthropologists.

Practicals :

M.M. 50/50

The students shall do the following exercises in Prehistoric Archaeology and material culture.

1. Prehistoric Archaeology: Identification, scientific sketching and Description with type-technology of the following tools.

1. Chopper/Chopping tool.
2. Hand-axe and cleaver.
3. Side-Scraper.
4. End-Scraper.
5. Borer.
6. Burin.
7. Flakes and Blades.
8. Microliths.

2. Evolution of Material Culture:

1. Material Culture: Identification and scientific sketching and Description of Specimen in the departmental museum.

2. Museum Methods-

Conservation, Preservation, Documentation and display.

Division of Marks

Practical Examination Record Book

Viva-voce

B.A./ B.Sc. Part - III

Paper - I: Research Methods.

M.M. 50/50

1. Research methods; Basic concepts.
2. Hypothesis.
3. Rapport Establishment and Participant Observation.
4. Data collection techniques, observation, interview schedule, questionnaire, geneology.

5. Elementary statistics : Tabulation, graph, bar, mean, mode, median and Standard deviation.

Books Recommended:

Evans Prichard, E.R. : Social Anthropology Firth, Raymond : Human Types.

Herskovits, M.J: Cultural Anthropology (Hindi translation also available). Kessing, F.M. : Cultural Anthropology.

Kuper Adam : Anthropology and anthropologists.

Radcliffe-Brown, A.R. : Structure and Function in Primitive Societies. Mair, Lucy : Introduction to Social Anthropology.

Sarana Gopala : Introducing Anthropology.

Paper - II: Human Genetics

M.M. 50/50

1. Principles of human genetics: concept, scope and field of Human genetics.
2. Genetics in man: Mendel's laws of Inheritance and its applications in Man, autosomal (Dominant and Recessive) and sex-linked Inheritance Lethal Genes.
3. Normal Human Karyotype in mitosis and Meiosis, Chromosomal aberration autosomal and gonosomal anomalies.
4. Linkage, localization of Genes on chromosomes. Linkage analysis and Human Linkage map, inborn errors of metabolism.
5. Heredity: Methods of studying-Twin method, Biology of twinning. Diagnosis of zygoty, Pedigree method, heredity and environment.
6. Mutation, Spontaneous and induced, chromosomal and somatic.
7. Application of Human Genetics, Genetic screening. Genetic counselling and genetic Engineering.

Books Recommended:

Gates, R. Human Genetics. Stern, Kurt : Human Genetics.

Winchester: Human Genetics.

Paper - III: Ethnology of India

M.M. 50/50

1. Ethnic affinity of the prehistoric and protohistoric Indian population as evident from the skeletal remains.
2. Ethnic affinity of the present Indian population-Patterns of classification, Risley's classification, its merits and limitation.
3. Problems of origin of the Ethnic components of Indian Population, Negrito, proto-australoid Mediterranean, Mongoloid and Non-Mongoloid. Brachycephals and blond ethnic elements.
4. Linguistic distribution vis-à-vis the ethnic groups of Indian Population.
5. Ethnic Composition of Himalayan Population.

Books Recommended:

Sarkar, R.M. : Fundamentals of Physical Anthropology.

Ghosh and Ghosh: Introduction to Physical Anthropology. Das, B.M.: Outline of Physical Anthropology.

Practicals and Field Report :

M.M. 50/50

1. Construction of Interview schedule, questionnaires & genealogy. The students shall be required to submit a project involving any of one of these research technique on any problem selected by them.

OR

2. The student shall be required to make empirical investigation on a community.

The fieldwork should be of minimum fifteen days. They shall submit a typed field report under the supervision of a teacher.

Books Recommended :

Pelto, P.J.: Anthropological Research: Structure of Enquiry-Royal Anthropology Institute; Notes nad Queries in Anthropology.

Goode and Hatt: Research methods in Social Sciences.



Department of Anthropology

SDS Uttarakhand University , Badsah ithaul, Tehri Garhwal

Proposed M.A./M.Sc Courses in Anthropology

Eligibility : B.Sc degree in Bio Group and B.A degree in any disciplines.

First Semester

Compulsory Courses:

	Internal+ External=Total
Anth-PG- 01 Physical Anthropology	20+80=100
Anth-PG-02 Social and cultural Anthropology	20+80=100
Anth-PG-03 Pre-Historic Anthropology	20+80=100
Anth-PG-04 Research Methods in Anthropology	20+80=100
Anth-PG-05 Practical Anthropometry and Osteology	20+80=100

Second Semester

Compulsory Courses:

	Internal+ External=Total
Anth-PG-06 Economic and Political Anthropology	20+80=100
Anth-PG-07 Human Genetics and Ethnic variation	20+80=100
Anth-PG-08 Pre-Historic cultures	20+80=100
Anth-PG-09 Research data analysis in Anthropology	20+80=100
Anth-PG-10 Practical prehistoric and material culture	20+80=100

Third

Semester Students opt. any one group ie. Group “A” or

Group “B” Group A- Physical Anthropology

Group B- Social Anthropology

Compulsory Courses:

	Internal+ External=Total
Anth-PG- 11 Medical Anthropology (Part I)	20+80=100
Anth-PG-12 Medical Anthropology (Part II)	20+80=100
Anth-PG-13 Applied and Action Anthropology	20+80=100
Anth-PG-14 Practical in Medical Anthropology (Project Report)	20+80=100

$$20+80=100$$

Elective Course:

(Group-A):

Anth-PG-E- 15(A) Human Evolution and Variation 20+80=100

Elective Course:

(Group-B):

Anth-PG-E-15(B) Tribal India 20+80=100

Fourth Semester

Compulsory Courses:

Group A & B

Internal + External= Total

Anth-PG-C-16 Indian Anthropology 20+80=100

Anth-PG-C-17 Ecological Anthropology 20+80=100

Anth-PG- 18 Anthropology of Development 20+80=100

Anth-PG-19 Dissertation 20+80=100

Elective Courses:

(Group-A)

Anth-PG-E-20 (A) Human Growth and Development 20+80=100

Elective Courses:

(Group - B)

Anth-PG- E-20 (B) Theory of Social Anthropology 20+80=100

First Semester

Anth-PG- 01 physical Anthropology

1. Meaning and scope of physical Anthropology. Human Place in Animal Kingdom.
2. Living Primates; Primate classification; Tree Shrew, Lemur, Loris; Tarsius, new world Monkeys, Old World Monkeys. Hominoid Gibbon and Siamang; Orangutan; Gorilla; Chimpanzee; The Human.
3. Theories and Principles of-Evolution: Lamarckism; Neo- Lamarckism ; Darwinism Neo Darwinism; Parallelism; Convergence; Orthogenesis; Synthetic theory of Evolution .
4. Principal of human Genetics: Biological basics of life : The Cell; Cell structure; Chromosome; mitosis; and meiosis; Sex Chromosomes; DNA structure and Code; theory of gene ; point Mutation.

Books Recommended :

1. Roy , Indrani Basu,2003 Anthropology: The study of man. S chand and co. New Delhi.
2. Garm. S.M.1971 human races: sping field: Chals C. Thomas
3. Coon, C.S. 1968 .Origin of Races
4. B.M Das: An introduction of physical Anthropology

5. Ghosh & Ghosh – Physical Anthropology
6. Naresh k vadia- Biological Anthropology
7. B.R.K Shnkla & Sudha Rastogi- Human genetics and races
8. Practical Anthropology by – M.k Bhasin & J.P singh

Anth-PG- 02 Social and Cultural Anthropology

1. Social Anthropology: Meaning and Scope: Cultural Relativism: holism and Cross-Cultural.

Concept and Definition: Group; Community, Association; Institution: Society: Status and Role; Social Structure Organization; Tribe; Village: Culture.

2. Marriage: Importance of marriage as an institution in Human society; problem of Universal Definition : Incest and Exogamy; preferential and prescriptive categories of marriage ; cultural variation in acquiring spouse in tribal societies ; marriages payment –bride price and dowry; polyandry and polygamy in India.
3. Family: Universality of family : Family- form and function ; Rules of residence , hindu joint family and change, development cycle of domestic groups .
4. Religion: Universal Definition of Religion; theories of Religion –Psychological sociological and anthropological , Magic , Religion and science totemism .

Books Recommended :

1. Beals, Ralph and Harry Hoiyer : introduction to Anthropology
2. Bohaman, Paul : Social Anthropology
3. Firth, Raymond: Element of social Organization
4. Mair,L: Introduction to Social Anthropology
5. Madan and Majumdar : An introduction to social anthropology.
6. Mair.L.: Introduction to social anthropology
7. Firth, raymond : Elements of social anthropology

Anth- PG- 03 Pre-Historic Anthropology:

1. **Introduction to Pre-Historic Anthropology**

Pre-Historic Anthropology ,Relation of Anthropology with Science, Social Sciences and Anthropology Major branches, Pre-history and Ethno-Archeology.

2. **Geological and Archeological Time Sale:**

Time Scale and their relevance in interpreting Human Evolution.

Geological framework Tertiary, quaternary, Pleistocene and holocene.

Ice Ages during Miocene, Pliocene and Pleistocene, glacial and interglacial periods, causes of ice ages,

3. Dating Method:

Relative and Absolute Dating.

River terraces, stratigraphic dating, palynology, Radiocarbon dating, potassium Argon dating, Thermo luminescence, Dendochronology, archeology, archeomagnetism etc, Cultural Chronology, The three Age system, stone/ copper/bronze/iron age (Paleolithic, Mesolithic and Neolithic period)

4. Tool Typology and Technology:

Stone tool typology: pebble tools: chopper chopping tools: bi-faces hand –axe, cleaver, scraper, blade, microlith grinding stone : ring stones. Technique: percussion, block on block, stone hammer, cylinder hammer, clactonian and levalloisian . Blade, grinding and polishing, artifacts typology/ pottery and other evidences identification and interpretation of stone tools and fossils.

Books Recommended:

1. Agarwal, D.P. 1982. The Archeology of India, New Delhi
2. Agarwal,D.P. 1974. Prehistoric Chronology and Radiocarbon Dating in India, New Delhi
3. Ghosh,A, 1973. encyclopedia of Indian Archeology, New Delhi
4. Rami Reddy 1977, Element of prehistory
5. lanusch Buettner 1966 Origin of Man John Wiley & sons inc,New York
6. Sankalia,H.D. 1964, Stone Age Tools: their techniques, names and probable function, Deean College,Pune
7. Dr. Ramesh chube – Puratatwik Manav vigyan.
8. Agarwal D.P 1982- the archeology of India, New Delhi

Anth-PG- 04 Research Methods in Anthropology:

1. Field work tradition in all branches of Anthropology to gain holistic prospective, special research and social survey: logical historical and scientific methods, Hypothesis : sources, characteristics and importance , Ethnographic methods.
2. Research design: Aims, Objectives and types, Sources of Data: primary and secondary sources.
3. Method and techniques of data collection- primary data collection: questionnaire

4. Interview, Schedule ,case study, method, audio visual recording, method of observation and Genealogy.

Secondary data collection: Census, National Sample Survey.

Books Recommended:

1. Goode & Hatt. Method in Social Research
2. Young, P.V. Scientific Social Surveys and Research
3. Danda, Ajit, Methodology in Anthropology, Inter India, New Delhi
4. Anuja, R, Research Methods
5. Bartlett, F.C. The study of Society (selected chapter)
6. Bajpai, S.R. Methods of Social Survey and Research Goode & Hatt method in social research
7. Danda ajit- Research methodology in anthropology , Inter – india ,new Delhi
8. R.N Mukherjee- social survey and research

Anth-PG -05 Practical (Anthropometry and Osteology)

A. Craniometry

1. Maximum Cranial length
2. Maximum Cranial Breadth.
3. Maximum Frontal Breadth.
4. Length of the foremen magnum.
5. Total Cranial height.
6. Morphological facial height.
7. Nasal length.
8. Nasal Breadth.
9. Nasal Index.
10. Cranial Index.
11. Glabala lambda length.
12. Frontal arch.
13. parietal arch.
14. occipital arch.

15. Nasion Inion length.
17. Basion-Bregma length.
18. Maximum occipital breadth.
19. Bizygomatic breadth.
20. Bimaxillary breadth.

B. Somatometry-

1. Maximum Head length.
2. Maximum head breadth.
3. Cephalic index.
4. Nasal length.
5. Nasal breadth.
6. Nasal index.
7. Morphological facial height.
8. Head circumference.
9. Height vertex or stature.
10. Sitting height.
11. Body weight.
12. Ponderal index.
13. Height Acromion.
14. Height Illiocristale.
15. Height Cervical.
16. Height Span.
17. Height Dactylion.
18. Bigonial breadth.
19. Total Arm length.
20. Glabala inion length.

Osteology

1. Skeleton
2. Skull
3. Mandible
4. Scapula

5. Humerus
6. Radius
7. Ulna
8. Femur
9. Tibia
10. Fibula
11. Hip bone

Books Recommended:

1. Practical Anthropology by – M.k Bhasin & I.P singh

Second Semester

Anth—PG-06 Economic and political Anthropology

1. Law and Social control: Definition and the Cultural background of law. The Anthropological approach to the study of law to be described with example .
2. Economic organization: Features of primitive Economic organization . forms of exchange: Reciprocity: Barter: Ceremonial exchange: Silent Trade, redistribution and trade: concept of poverty and money in primitive societies.
3. Political organization mechanism of Social control in primitive societies: nature of primitive law: Government: state and stateless societies: panchayat-origin. history and change through time: factions.
4. Social Stratification: Estate, class and caste: The major features of the caste system. cast in India today. The impact of caste on other religious group in India.

Books Recommended:

1. Beals, Ralph & Harry Hoijer: Introduction to Anthropology
2. Beattie, John other cultures.
3. Bohannan, paul: Social Anthropology
4. Goode and Hatt method in social research
5. R.N Mukherjee- statistics and social research

6. Agarwal, D.P 1974 , stone age tools , their techniques, Names and Probable Junction D.C,Pune

Anth-PG-07 Human Genetics and Ethnic Variation

1. Genetics Definition and its relevance in Physical Anthropology, the Mendelian Principal.
2. Cell: Structure and Division
3. Ethnic Variation :The concept of ethnic groups. Race Formation . The criteria for racial Classification . Major Races of the world and their distribution. Racial element in the Indian–continent.
4. Evolutionary Process in Modern Populations –Population, Population Genetics, Evolution in Modern Population, Deviation from Hardy Weinberg Expectation, Mutation, Migration(Gene Flow), Genetic Drift (Founder’s Principal) Natural Selection, Interaction of Evolutionary Forces, Human Polymorphism, in Human Blood: ABO, MN, Rh and other Systems ;Human Polymorphism Anthropological Applications, Dermatoglyphics.

Books Recommended:

1. Birdsell,J.B: Human Evolution :An Introduction to new Physical Anthropology.
2. Bodemer & S forza : Genetic Structure of Human Population
3. Hartal ,Daniel :Human Genetics,
4. Li,C.C.:Human Genetics
5. Shukla, B.R.K. and rastogi ,S: Physical Anthropology and Human Genetics
6. Stern ,Curt :Principles of Human Genetics.
7. Dumont, Lousis: Homo Hierarchieus.
8. B.R.K Shukla and Sudha Rastogi- physical Anthropology and Human genetics
9. Stern curt- Principles of Human genetics

Anth –PG- 08 Pre-historic Cultures:

1. Paleolithic Cultures:

Lower Paleolithic Culture: Africa-Old wan

Europe: Acheulian, Adivillian, Levalosion, Clactonian, India: Sohn, Madrasian.

2. Middle Paleolithic Culture:

African, Mousterian, Indian Upper Paleolithic Culture: Europe - Aurignacian Solutrean, Magdalenian Cultures, India. Cultural and Biological evidences of Paleolithic Cultures of India & characteristic Paleolithic Art in India.

3. Mesolithic and Neolithic Cultures:

Azilian, Tardenoisian, Kitchen Middle Culture Jericho and Jarmo culture Langhanaj, Bagor Adamgarh, Burzhom Northern/Eastern and South Indian Neolithic Characteristics features of Mesolithic and Neolithic cultures and cultural and Biological evidences of cultures.

4. Indus Valley civilization – Chalcolithic cultures and Megalithic Cultures :

Distribution, Period, Characteristics, causes of decline, people and culture of Indus valley Civilization. Chalcolithic culture and the characters.

Books Recommended:

1. Agarwal , D.P 1982 the archeology of India, New Delhi.
2. Agarwal , D.P 1974 Prehistoric Chronology and Radiocarbon Dating In India, New Delhi.
3. Ghosh,A. 1973 Encyclopedia of Indian Archeology , New Delhi
4. Rami Reddy 1997 element of prehistory
5. Sali,S.A 1990 stone age India , Shankar publishers Aurangabad.
6. Sankila, H.D 1964 stone age tools : Their technique, Names, and probable function , Deccan college , Pune.

Anth –PG- 09 Research Data analysis in Anthropology

1. Data Definition and Characteristics
Data Collection : Choice of suitable technique .
2. Classification : Geographical , Chronological , Qualitative and Quantitative
. Tabulation: General , special purpose and Machine Tabulation .
3. Analysis and Interruption of Data.
Graphic and Diagrammatic presentation of Data.
Preparation and writing of report.
4. Scope , Utility and importance of Statistics in Anthropology
Sampling: random , purposive, Stratified ,Systematic and quota sampling .
Measures of central tendency – mean , mode and median

Books Recommended

1. Goode & Hatt, method in Social Research
2. Young, P.V Scientific Social surveys and Research
3. Danda , Ajit, Research Methodology in Anthropology Inter India, New Delhi

4. Ahuja , R. Research Methods
5. Bartlett, F.C : the study of society
6. Bajpai, S.R : methods of social survey and Research
7. Goode and Hatt method in social research
8. R.N Mukherjee- statistics and social research

Anth –PG- 10(A) Practical Prehistoric Tools and material Culture

Detailed given by Department.

Third Semester

Anth–PG- 11 Medical Anthropology (part 1st)

1. **Medical Anthropology** : Historical roots ; Definition , Aims and Scope.

2. Theoretical orientation in medical Anthropology

- a. Classificatory Approach –W.H.R. Rivers.
- b. Culture – trait approach – forest element.
- c. Structural , functional and Cultural Configurational Approach.
E.H. Ackerknecht, Margaret Mead, Benjamin D Paul, George M. Foster . d recent trends
Alexander Alland, Frederick L. Dunn, Horacio Fabrega, Arthur Kleinman, Allan Young, Cecil Helman, Browner
- d. Growth of Medical Anthropology in India.

3. Medical system:

- a. Medical systems as cultural systems : illness disease dichotomy
illness etiologies; illness classification and perception ; professional, folk and popular
sectors in medical systems.
- b. Medical system as Social system
- c. Medical system as Adaptive system.
- d. Health culture

4. **Health care delivery system:** Institutional settings cures: Role and status ,
Therapeutic interview(Doctor- patient relationship) ; public health , preventative
measures.

Recommended Readings:

1. P.C Joshi- medical anthropology of India
2. Dr. M.M Lawaniya and Shashi K Jain – Medical sociology

Anth-PG- 12 Medical Anthropology(part IInd)

1. Folk Psychiatry : Culture change and mental illness ; therapeutic elements in magico-religious healing techniques ; illness and social control.
2. Medical pluralism ; cosmopolitan , regional and local medical systems ; interaction between different systems of medicine ; therapeutic management group; (choice pattern and decision making); ambiguities in medical revivalism ; community health workers scheme ; politics of health services.
3. Implications of medical anthropology in international health care planning ; integration of different systems of medicine ; strength and Weakness of Traditional Systems ; health for All by 2000 A.D.
4. Traditional Medicines in the central Himalayas specialized , generalized and home medicines sectors, forms of traditional medicines natural and supernatural .

SOS Anth-PG-E-13 Applied and Action Anthropology

1. Applied Anthropology : history ; Aims & Scope Applied and Action Anthropology .
2. Anthropology and tourism sacred geography
3. Anthropology and SC/ST policy: constitutional safeguards and implementations.
4. Anthropology as a museum subject museums in India and World;
Methodology of collection of Anthropological objects through field works;
Documentation including visual documentation and use of computer storage and retrieval procedures ; methods of handling , restoration. Conservation and preservation . methods of display and Exhibition ; Role of Anthropological museums in Community life and national integration.

Recommended Readings:

1. Applied and Action anthropology by L.P. vidiyarthi
2. B.M das – physical Anthropology

SOS Anth-PG-C-14 Practical- Project in Medical Anthropology

Elective Course (Group-A)

SOS Anth-PG-E-15 (A) Human Evolution and Variation

1. Evolutionary Record; Early revolutionary History ; Paleozoic Era ; Mesozoic Era; Cenozoic Era.
2. Primate evolution: Time scale, Earliest primates, Paleocene primates, Oligocene primates Propiipithecus, Aegyptopithecus, Miocene primate; Paleogeography and Miocene Hominid Evolution, Dryopiths, Ramapiths/ Sivapiths.
3. Paleoanthropology : Definition of Hominids, bio cultural Evolution , human as a tool maker, Plio-Pleistocene hominids; history of discovery of Plio-Pleistocene hominids – Earliest Discoveries, Australopithecus-Africans, Robustus, Afarensis, Meganthropus Homo habits, Plio-Pleistocene Hominids- organization and interpretation.

4. Homo Erectus, Pleistocene Homo erectus Javanensis, Pekinensis, Heidelberg jaw; vertesszollas, terra Amata , Narmada man. Homo Erectus – Distribution, human emergence – Australopithecus to homo Erectus.

Book Recommended :

1. Strickberger , M.W genetics .
2. Mckusic. V.A Human genetics.
3. Stern curt – principles of human genetics
4. Leuitan & mantagn _ A text book of human genetics
5. Horrision et al., Human biology , Giblett ,E.R – Genetic markers in human blood.
6. B.M das – physical Anthropology

Elective course (Group B)

Anth-PG-E-15(B) Tribal India

1. Concept of tribe in Indian context .
2. Tribal societies in changing prospective
 - (i) Pre colonial period
 - (ii) Colonial period
 - (iii) Post independence
3. Social Change in tribal societies : A historical perspective
 - (i) Tribe – cast interaction
 - (ii) Economic and political factors of change
 - (iii) Tribal uprising
4. Social change in contemporary period
 - (i) Political democracy
 - (ii) Constitutional safeguards in modern India
 - (iii) Industrialization and urbanization

Fourth semester

Compulsory Course For Group A & Group B

Anth-PG-17 Ecological Anthropology

1. Ecological Anthropology: Aims and scope.
2. History of Ecological Anthropology: Contribution of Julian steward; Leslie white
3. Environment and Habitat : Evolution of Dwelling Forms; major types of settlement patterns in India; house types and construction techniques.
4. Ecology and Substance strategies : Hunting – gathering , Horticulturist: pastoral; shifting cultivation, agro Pastoralism. Himalayan Ecosystem – Man Nature interaction , The symbolic relationship : man , Nature and spirit (Maler): man , Nature and animal .

Anth-PG- 16 Indian Anthropology

1. Growth and Development of Indian Anthropology there places formulating, Description and Anatomic.
2. Applied and Action Anthropology in India.
3. Applied and Action Anthropology ,Tribe and Cast a Jury of Tribal community in India geography, languages, economy and social organization.
4. Anthropological Approaches in National Character Studies.

Recommended Readings:

1. Nadeem hasnan – Indian Anthropology

Anth –PG -018 Anthropology of Development

1. Development : Meaning and evolution of the concept , Approaches and Strategies of development in India .
2. Poverty and development , social justices and Equity , poverty alleviation programs, Human Resource Development (HRD).
3. Planning : concepts, policy and process Agencies for development : Government and Non-governmental people participation.
4. Rural Development : land reforms , C.D.P. Panchayati raj, tribal development , constitutional provisions for development of scheduled castes and scheduled tribes , administration of scheduled areas , socio cultural factors in development with case studies.

Books Recommended:

1. Chansarkar, B.A.: Models of planning in India
2. Cochrane: Development Anthropology
3. Dey , Nitish : overcoming under Development
4. Prasad , Kamta: planning for poverty Allivation
5. Spicer , E.H.:Human factor in Technological changes
6. Chan sharkar, B.A: Models of planning in India

Anth-PG-19 Dissertation

Field work is conducted for Twenty days in any tribal and backward area of India. under the supervision of One or Two faculty members of the department of Anthropology . Then the candidate will be eligible for presentation of the dissertation. A dissertation will be presented on the

basis of the field work and a viva –voice examination will be conducted on . The whole exam will be of 100 marks .

Elective course Group: A

Anth–PG-E-20 (A) Human growth, Development and Nutrition

1. Definition and Concept of growth, differentiation Maturation and Development .
2. Stages of Growth – prenatal, Infancy; childhood ; Adolescence ; Maturity ; senescence; gerontology..
3. Factors affecting growth genetic , Environmental Harmonal, socio-economic ,secular trends .
4. Importance of Age recording and Decimal Age in growth studies.
Methods of studying human growth and development longitudinal, cross sectional and mixed longitudinal ; growth curves ; measurements employed in the study of human growth and development , analysis of human physique and body composition- Seheldon Parnell, Health- caste method of Somatotyping. Nutrition and type.

Elective Course Group:B

Anth–PG-E-20(B) : Theory of Social Anthropology

1. Growth and Development of Social Anthropology.
2. Evolutionism: Bachofen, Mc'lennan , Maine; Morgan Taylor, Frazer.
3. Diffusionism : British Diffusionism Elliot Smith W.H.R. Rivers, German Diffusionism (Schmidt; Graebner); American Diffusionism (Boas; Kroeber) ; culture area Approach.
4. Functionalism and structural Functionalism B.Malinowski; A.R. Radcliffe – brown.

Recommended Books:

1. W.J Goode and P.K Hart(1952) Methods in Social research. Me Graw Hill Co, New Delhi.
2. Marvin Harris (2001) Rise of Anthropological Theory Altamira press , Walnut creek , C.A
3. Makhan Jha : Anthropological theory
4. Gaya pandey; Anthropological theory (Classical and modern)

Course Code: STAT/C-303

Title: Population Statistics

Maximum Marks: 50

Unit 1:

Introduction: Sources of Population data- Census data, Registration data and errors in such data, Rates and Ratios of vital events.

Unit 2:

Measurements of Mortality: Crude Death Rate, Specific Death Rate, Standardized Death Rate, Infant Mortality Rate, Life Table: Construction, Types and Uses.

Unit 3:

Measurements of Fertility: Crude Birth Rate, General Fertility Rate, Age-Specific Fertility Rate, Total Fertility Rate.

Unit 4:

Measurement of Population Growth: Crude Rate of Natural Increase and Vital Index, GRR and NRR.

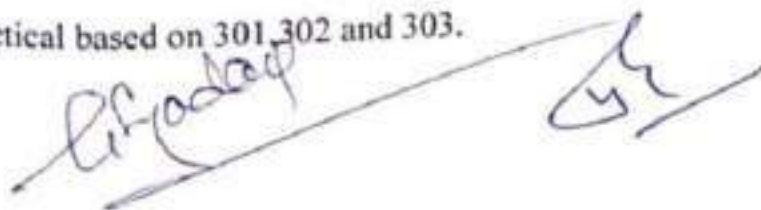
Books Recommended

1. S.C. Srivastava: Studies in Demography, Anmol Publication Pvt. Ltd.
2. S.C. Gupta, V.K. Kapoor: Fundamental of Applied Statistics, Sultan Chand and Sons
3. Asha A. Bhende & Tara Kanitkar: Principles of Population Studies, Himalaya Publishing House
4. D. T. Rowland: Demographic Methods and Concepts, Oxford.

Course Code: STAT/P-304

Title: Practical Maximum Marks: 50

Practical based on 301, 302 and 303.

The image shows two handwritten signatures in blue ink. The signature on the left is more legible and appears to be 'S. C. Srivastava'. The signature on the right is more stylized and less legible. A large, thin blue diagonal line is drawn across the bottom of the page, passing through the space between the two signatures.

Course Code: STAT/C-402

Title: Applied Statistics

Maximum Marks: 100

(a) Semester Examination: 80

(b) Sessional /Internal Assessment 20

Time Series Analysis: Objects, Decomposition, Tests of Randomness, Trend component, polynomial, logistic, Log-normal trend functions, Moving average, Spencer's formulae and effects, Variate difference method, Measurement of seasonal and cyclic functions, Periodogram and Harmonic analysis, Autocorrelation and Correlogram analysis.

Demand Analysis: Distribution of Income, Income and Demand elasticities. Methods for estimating elasticities using family budget data and time series data, Engel's Curve and Engel's law, Pareto's law.

Demography: Source of Demographic data, Limitations and uses of demographic data, vital rates and ratios, Definition, construction and uses, life tables, complete and abridged construction of life table from vital statistics, uses of life tables. Logistic and other population growth curves. Measure of fertility: Gross and Net reproduction rates, stationary and stable population theory.

Books Recommended

1. Powker A. II. & Goode: Sampling Instruction Variables, Mc Graw Hill
2. Lodge, II. F & Romming: Sampling Inspection Plans and Tables, John Wiley
3. Kendall, M.G. & Stuart A.: Advanced Theory of Statistics. Vol. III, Charies Griffin
4. S.C. Srivastava: Studies in Demography, Anmol Publication Pvt Ltd.
5. S.C. Gupta & V.K. Kapoor: Fundamental of Applied Statistics, S. Chand & Sons

Sri Dev Suman Uttarakhand University,



Badshahithaul

(Tehri Garhwal)

SYLLABUS

**Sridev Suman Uttarakhand State University
Badshahithaul, Tehri (Garhwal)**

B.A./ B.Sc. GEOGRAPHY

03 Years Semester System

(Effective from Academic Session : 2018-2019)

-: Syllabus Committee :-

- 1. Dr. Mohan Singh Panwar** **Convener**

Department of Geography
HNB Garhwal University (A Central University)
Srinagar (Garhwal)
Uttarakhand, India

- 2. Dr. Bhanu Prasad Naithani** **Member**

Department of Geography
HNB Garhwal University (A Central University)
Srinagar (Garhwal)
Uttarakhand, India

- 3. Dr. Kamal Singh Bisht** **Member**

Department of Geography
D.B.S. (P.G.) College
Dehradun
Uttarakhand, India

Summary of the Syllabus

Sridev Suman Uttarakhand State University

Badshahithaul, Tehri Garhwal

B.A./ B.Sc. GEOGRAPHY

03 Years Semester System

(Effective from Academic Session : 2018-2019)

Semester - I

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Paper Total	Theory	Internal Assessment	Paper Total
Paper - 1	Physical Geography	80	20	100	120	30	150
Paper - 2	Human Geography	80	20	100	120	30	150
Paper - 3	Practical - I	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - II

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total
Paper- 4	Geographical Thought	80	20	100	120	30	150
Paper - 5	Environmental Geography	80	20	100	120	30	150
Paper- 6	Practical - II	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - III

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total

Paper- 7	Geography of India	80	20	100	120	30	150
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Paper - 8	Disaster Management (With reference to Uttarakhand)	80	20	100	120	30	150
Paper - 9	Practical - III	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - IV

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total
Paper -10	Regional Geography of the World	80	20	100	120	30	150
Paper -11	Bio- Geography	80	20	100	120	30	150
Paper -12	Practical - IV	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - V

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total
Paper -13	India - Location Aspects (Map)	80	20	100	120	30	150
Paper- 14	Population Geography	80	20	100	120	30	150
Paper -15	Practical - V	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - VI

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total
Paper- 16	Economic Geography	80	20	100	120	30	150
Paper -17	Geography of Uttarakhand	80	20	100	120	30	150
Paper -18	Practical - VI	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - I

Paper – 1 : Physical Geography

1. Physical Geography – Definition and Scope. Theory of the origin of the Earth.
2. Atmosphere – Structure of the Atmosphere, Insulation, Global Circulation Pattern. Tropical Cyclones. Monsoon, Climatic Classification (Koppen).
3. Lithosphere – Internal Structure of Earth based on Seismic Evidence origin of the Continents and oceans. Plate Tectonics and its Features. Denudation process and Cycle of Erosion – Davis and Penck.
4. Hydrosphere – Hydrological Cycle, Ocean Bottom, Relief Features. Tides and Currents, coral Reef.

Reading List

1. Gabler R.E., Petersen J.F. and Trapasso, L.M., 2007 : Essentials of Physical Geography (08th Edition). Thompson, Brooks / Cole, USA.
2. Garrett N., 2000 : Advanced Geography, Oxford University Press.
3. Goudie. A., 1984 : The Nature of the Environment : An Advanced Physical Geography. Basil Blackwell Publishers, Oxford.
4. Husain M., 2002 : Fundamentals of Physical Geography. Rawat Publications, Jaipur.
5. Monkhouse, F.J. 2009 : Principles of Physical Geography. Platinum Publishers, Kolkata.
6. Strahler A.N. and Strahler A.H., 2008 : Modern Physical Geography. John Wiley & Sons. New York.
7. Singh, Savindra, Physical Geography, Both version Hindi and English, Pravali Ka Publication, Allahabad.

Paper - 2 : Human Geography

1. **Definition** : Nature, Concepts, Scope and contribution of Human Geography.
2. **Space and Society** : Cultural Regions, Races, Religion and Language
3. **Population** : Population Growth, Demographic Transition Theory, World Population Distribution and Composition (Age - Gender and Literacy), Migration Types and impact.
4. **Settlements** : Types and Patterns of Rural Settlements Classification of Urban Settlements, Trends and Patterns of World Urbanization, Study of any one placed city.

Reading List :

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
2. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement. Oliver and Boyd, London.
3. Johnston R. :Gregory D. Pratt G.et al. (2008) The Dictionary of Human Geography, Blackwell, Publication.
4. Jordan – Bychkov et al (2006) The Human Mosaic : A Thematic Introduction to Cultural Geography, W.H. Freeman and Company, New York.
5. Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut.
6. Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan, Allahabad.
7. Ghosh. S. (2015) Introduction to settlement Geography. Orient Black Swan Private Ltd. Kolkata
8. Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur.

Paper – 3 : Practical – I

- a. Scale – Definition and importance, construction of Simple, comparative and diagonal scale.
- b. Topo sheets – indexing, scale and conventional signs.
- c. Study and interpretation of one inch/ 1:50000. Survey of India Toposheets with special reference to landscape feature, drainage characteristics, land use, settlements, transport and other routes.
- d. Landform features based on contours and profile drawn on them.

Division of Marks (Internal Examiner will be appointed by the Principal /HOD)

- a. Lab Work – One question from each section with internal choice (Duration three hours 60 MM)
- b. Sessional Record and Viva – voce – 10+10 = 20
- c. Internal Assessment = 20
(Practical Exam will be essentially conducted by the external examiner appointed by the University)

Reading List

- a. Dent B.D., 1999 : Cartography : Thematic Map Design. (Vol. I). McGraw Hill.
- b. Gupta K.K. and Tyagi V.C., 1992 : Working with Maps, Survey of India, DST, New Delhi.
- c. Mishra R.P. and Ramesh A., 1989 : Fundamentals of Cartography, Concept Publishing.
- d. Sharma J.P., 2010 : Prayogic Bhugol, Rastogi Publishers.
- e. Singh R.L., and Singh R.P.B., 1999 : Elements of Practical Geography. Kalyani Publishers
- f. Singh R.L., 1998 : Prayogic Bhoogol Rooprekha, Kalyani Publications.
- g. Steers J.A., 1965 : An Introduction to the Study of Map Projections. University of London.

Semester – II

Paper - 4 : Geographical Thought

1. Definition, Nature and Scope of Geography, Branches and sub branches of Geography, Basic concepts of Geography with modern thoughts.
2. Contribution of Greek and Roman Geographers – Ptolemy and Strabo, Arab Geographers. Contribution of Geographical Knowledge in ancient and medieval India, Renaissance in Geography, Discoveries and inventions, Contribution of Taylor Immanuel Kant.
3. German and French School of Geography – Davis. EC. Semple. Huntington. Isaiah Bowman, Mackinder, Herbertson and Stamp.
4. Geography in India (after independence): Recent Trends in Geography and Modern Geographical School of thoughts.

Selected Readings

1. Dickenson R.E. – The Makers of Modern Geography – Rutledge and Kegan London.
2. Freeman T.W. – A Hundred Years of Geography, London.
3. Jones and Martin – All Possible World – A History of Geographical Ideas. Odessey. Indianapolis (USA)

4. Halt Jensen A. – Geography – its History and concepts. Harper and Raw London.
5. Dixit R.D. – Geographical Thought – A Contextual History of Ideas. Prentice Hall, New Delhi.
6. Kaushik S.D. – Bhaugolik Vichardharayen (Hindi) – Sahitya Bhawan Pub. Agra.
7. Hussain Majid – Evolution of Geographical Thought (English and Hindi) Rawat Publication Jaipur.
8. Taylor G. Geography in Twentieth Century : London
9. Jagdish Singh – Bhaugolik Chintan ka Kram Vikas (Hindi Gyanodaya, Gorakhpur)

Paper – 5 : Environmental Geography

1. Environmental Geography : Definition, Concepts and Approaches, Ecosystem – Concept, Structure, Ecosystem Functions, Tropic level, Food Chain and Food web.
2. Man – Environment Relationship in all the Geographical Region: Plains, Desert, Mountain and Coastal Regions.
3. Environmental Problems and Management : Pollution Types, Biodiversity Loss, Solid and Liquid Waste and ecosystem and Environmental Conservation and Management
4. Environmental Programme and Policies at Global, National and Regional level, Government and Civil Society initiatives to conserve Environment with reference to Uttarakhand.

Reading List :

1. Casper J.K. (2010) **Changing Ecosystems: Effects of Global Warming** InfoBase Pub, New York.
2. Hudson, T. (2011) Living with Earth: An Introduction to Environment Geology. PHI Learning Private Limited, New Delhi.
3. Miller, G.T. (2007) **Living in the Environment: Principles. Connections and Solutions.** Brooks/ Cole Cengage Learning, Belmont.
4. Panwar, Mohan Singh (2007) **Environmental Changes and Sustainable Development in the New Millennium**, Research India Press, New Delhi.
5. Singh. R.B. (1993) **Environmental Geography.** Heritage Publishers, New Delhi.
6. Singh R.B. and Hietala, R. (Eds) (2014) **Livelihood Security in North-western Himalaya : Case Studies from Changing Socio – economic environments in Himachal Pradesh**, India. Advances in Geographical and Environmental Studies. Springer
7. Singh, Savindra 2001. **Paryavaran Bhugol.** Prayag Pustak Bhawan. Allahabad (In Hindi)
8. Teli, B.L. 2005, **Paryavaran Adhayan**, College Book Depot, Jaipur.
9. Nautiyal, Rajesh, Prasad Gayatri, **Paryavaran Bhoogal.**

Paper – 6 : Practical – II

- a. Maps- Definition, basic concepts and classification, Map Composition.
- b. Map Projections – Classification, Properties, Choice and Merits and Demerits.
- c. Construction of Conical Projection with one and two standard parallel, Bonne's cylindrical equal area. Mercator's and Polar Zenithal Equal Area Map projection.
- d. Study and interpretation of Indian Daily Weather Report Maps/ reports of January, June and July with weather interpretation report.

Division of Marks (Internal Examiner will be appointed by the Principal /HOD)

- a. Lab Work – One question from each section with internal choice (Duration three hours 60 MM)
- b. Sessional Record and Viva – voce – 10+10 = 20
- c. Internal Assessment = 20
(Practical Exam will be essentially conducted by the external examiner appointed by the University)

Reading List :

- a. Dent B.D., 1999 : Cartography : Thematic Map Design. (Vol. I). McGraw Hill.
- b. Gupta K.K. and Tyagi V.C., 1992 : Working with Maps, Survey of India, DST, New Delhi.
- c. Mishra R.P. and Ramesh A., 1989 : Fundamentals of Cartography, Concept Publishing.
- d. Sharma J.P., 2010 : Prayogic Bhugol, Rastogi Publishers.
- e. Singh R.L., and Singh R.P.B., 1999 : Elements of Practical Geography. Kalyani Publishers
- f. Singh R.L., 1998 : Prayogic Bhoogol Rooprekha, Kalyani Publications.
- g. Steers J.A., 1965 : An Introduction to the Study of Map Projections. University of London

Semester – III

Paper – 7 : Geography of India

1. **Physical Aspects** – Location and Relief, Drainage, Climate and Natural vegetation and Soil.
2. **Population** – size and Growth since 1901, Population Distribution, Literacy, Sex Ratio, irrigation.
3. **Settlement System** – Rural Settlement Types and Patterns Urban Pattern and Cities.
4. **Economy and Resource Base** - Livestock (Cattle and Fisheries). Power (Cool and Hydroelectricity), Minerals (Iron ore, Petroleum and Bauxite)
Agriculture (Rice, Wheat, Sugarcane. Tea Cotton) : Industries (Cotton Textile, Iron – Steel, Automobile).
Transportation Modes (Road and Rail)

Reading List

1. Hussain M., 1992 : Geography of India. Tata McGraw Hill Education.
2. Mamoria C.B., 1980 : Economic and Commercial Geography of India. Shiva Lal Agarwala.
3. Miller F.P., Vandome A.F. and McBrewster J. 2009 : Geography of India : Indo- Genetic Plain, Thar Desert, Major Rivers of India. Climate of India. Geology of India, Alpha Script Publishing.
4. Nag P. and Sengupta S. 1992 : Geography of India, Concept Publishing.
5. Pichamuthu C.S., 1967 : Physical Geography of India, National Book Trust.
6. Sharma T.C. and Coutinho O. 1997 : Economic and Commercial Geopgrpahy of India, Vikas Publishing
7. Bansal, S.K., Bharat ka Bhoogal, publisher, Agra.
8. Singh Gopal, 1976 : a Geography of India, Atma Ram
9. Spate O.H.K. and Learmonth A.T.A. 1967 : India and Pakistan : A General and Regional Geography, Methuen, Khullow, S.K., Geoprpahy of India, Publisher.
10. Rana, Tejbir Singh, 2015 Diversity of India, R.K. Books, Delhi.

Paper – 8 : Disaster Management (with reference to Uttarakhand)

1. Definition Risk, Vulnerability, Concepts and Types of Hazards and Disasters, Cloud bursts and specific case studies of Uttarakhand.
2. Disasters in India : Causes, Impact, Distribution and Mapping : Flood, Landslide, Drought, Earthquake and case studies of Indian Context.
3. Human induced Disasters : Causes, Impact, Distribution and Mapping : Forest Fire, Climate change, some case studies of Himalaya.
4. Response and Mitigation to Disasters: Mitigation and Preparedness, SDMA, DMMC, DDMA, Indigenous Knowledge and Community – Based Disaster Management : Role of Civil Society and Government during the Disasters.

Reading List :

1. Government of India (1997) : Vulnerability Atlas , New Delhi. Building Materials & Technology Promotion Council. Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) Vulnerable India : A Geographical Study of Disasters, Sage Publication, New Delhi .
3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R.B. (2005)- Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3.
5. Singh R.B. (ed), (2006), Natural Hazards and Disaster Management : Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic, Publications, Dordrecht.
8. Singh Jagbir (2007) – *Disaster Management Future Challenges and Opportunities*, 2007. Publisher – I.K. International Pvt. S – 25, Green Park Extension, Uphaar Cinema Market, New Delhi, India.
9. Naithani, B.P. (2017), *Prakratik Apda Prabhav evam Prabhandhan*, Akhand Publishing Hanse Sahadatpur extension, New Delhi.

Paper – 9 : Practical – III

- a. Primary and secondary data and their sources, methods of primary data collection, classification of statistical data and tabulation.
- b. Frequency curves, histogram and polygon. Measures of Central Tendency – Mean, Median, Mode.
- c. Measures of dispersion – Quartile, Standard Deviation and coefficient of Variation.
- d. Coefficient of Correlation – Karl Pearson’s and Spearman’s methods. Scatter Diagrams.

Division of Marks (Internal Examiner will be appointed by the Principal /HOD)

- a. Lab Work – One question from each section with internal choice (Duration three hours 60 MM)
- b. Sessional Record and Viva – voce – 10+10 = 20
- c. Internal Assessment = 20

(Practical Exam will be essentially conducted by the external examiner appointed by the University)

Reading List :

1. Dent B.D., 1999 : Cartography : Thematic Map Design. (Vol. I). McGraw Hill.
2. Gupta K.K. and Tyagi V.C., 1992 : Working with Maps, Survey of India, DST, New Delhi.
3. Mishra R.P. and Ramesh A., 1989 : Fundamentals of Cartography, Concept Publishing.
4. Sharma J.P., 2010 : Prayogic Bhugol, Rastogi Publishers.
5. Singh R.L., and Singh R.P.B., 1999 : Elements of Practical Geography. Kalyani Publishers
6. Singh R.L., 1998 : Prayogic Bhoogol Ki Rooprekha, Kalyani Publications.
7. Steers J.A., 1965 : An Introduction to the Study of Map Projections. University of London.

Semester – IV

Paper – 10 : Regional Geography of the World

1. Significance and approaches of Regional Geography, Concept and types of the Regions, Natural and cultural regions of the world.
2. Regional Geography of Developed countries with special reference to USA and Japan. Regional Geography of Developing countries with special reference to China and Brazil.
3. Regional Geography of South Asian Countries. Study of SARC Countries and their importance.
4. World – Location Aspects (Map) show is locations in the outline map of world.
 - I. **Physical** – Mountain and Ranges, Rivers, Forest, Soil, Lakes and Natural Regions
 - II. **Cultural** – Countries and Capitals, important cities, Population, Tribal Area, Planning Regions.
 - III. **Economic** – Agricultural Regions, Resource Regions, Power Plants, Hydro Power plants, important parts and Traderouts
 - IV. **Others** – Biodiversity, National Parks, Environment, Ecology

Paper – 11 : Bio- Geography

1. Significance of Bio Geography, Scope of Bio Geography, Ecological Adaptation, Climax concept and Ecosystem balance.
2. Historical Evolution of Plants and Animals, Pattern and Causes of Plant and animal distribution, Bio-Geographical Regions of the World.
3. Biodiversity, Biodiversity- Significance, Climate Change, Bio Geography of Uttarakhand.
4. National Parks, Biosphere Reserves, Eco - Sensitive Regions, Biodiversity Hot spots.

Paper – 12 : Practical – IV

- a. Statistical Diagrams – Simple. Compound and Multiple Bar Diagram. Ring of Circle Diagram. Simple and Polyline graph. Hyther graph and Climograph.
- b. Distribution of maps – Isopleths. Choropleth, Layer Tint and Dot Method.
- c. Identification of rock outcrops, bedding planes, determinants of dip and thickness- simple and folded (Geological cross section drawing)

Division of Marks (Internal Examiner will be appointed by the Principal /HOD)

- a. Lab Work – One question from each section with internal choice (Duration three hours 60 MM)
- b. Sessional Record and Viva – voce – 10 + 10 = 20
- c. Internal Assessment = 20
(Practical Exam will be essentially conducted by the external examiner appointed by the University)

Reading List :

1. Dent B.D., 1999 : Cartography : Thematic Map Design. (Vol. I). McGraw Hill.
2. Gupta K.K. and Tyagi V.C., 1992 : Working with Maps, Survey of India, DST, New Delhi.
3. Mishra R.P. and Ramesh A., 1989 : Fundamentals of Cartography, Concept Publishing.
4. Robinson A., 1953 : Elements of Cartography, John Wiley.
5. Sharma J.P., 2010 : Prayogic Bhugol, Rastogi Publishers.
6. Singh R.L., and Singh R.P.B., 1999 : Elements of Practical Geography. Kalyani Publishers
7. Singh R.L., 1998 : Prayogic Bhoogol Rooprekha, Kalyani Publications.
8. Steers J.A., 1965 : An Introduction to the Study of Map Projections. University of London.

Semester - V

Paper – 13 : India –Locational Aspects (Map)

Objective : The paper is designed to acquaint the student with the importance of location as one of the important aspects of geographical studies. The aim to promote awareness among students about atles.

There will be two parts of this course :

- A. An outline map of India will be provided to the students and they will have to mark locations on it. 15 locations will be given and 01 mark for each correct location.
- B. An outline map of India with indicated location of features in the numerals will be provided. Students will identify the location features. 15 locations features will be given for identification and 01 mark to each correct identification.

Students will provide write up (for both A and B Part) on the significant geographical relevance and importance of the locations (marked and identified), whether physical, economic, cultural, ecological, environmental and commercial etc. in 30 words on each. 01 Mark is allotted for each write-up.

Distribution of Marks :

A. Locations	15 Marks
Write up in 30 words	15 Marks
B. Identification of Locations	15 Marks
Write up in 30 words	15 Marks

Course Contents :

Physical – Mountain and ranges, rivers, forest, soil, lakes and natural regions

Cultural – State and capitals, important cities, population, Rural- Urban, Tribal Areas, Planning regions

Economic – Agricultural regions/ belts, Industrial regions and complexes, Power Plants, Hydro Power Projects, Important Industries, Important ports and transport routes, important Resources

Others – Bio- Diversity, National Parks, Environment, Ecology and contemporary issues

Note : Examiner (Paper Setter) should select location and identified locations from all aspects of course and covering the entire map distributed all across. Repetition of location of same nature and character should be avoided.

Examiner will provide key of both A and B Part. Map provided to the students should be of same scale/ size on which key is prepared. For Part A a blank map should be attached with the question paper. For part B numerically identified map to be enclosed with question paper. For evaluation of this paper, key is of utmost importance prepared by the paper setter.

Books Recommended :

1. India & the World – NATMO, School Atlas, Oxford –Atlas & Time UK Print World Atlas and Uttarakhand Atlas.

Paper – 14 : Population Geography

1. Concept and significance of Population Geography, Nature and Sources of Population Data, Population and Development Planning, Recent Development in Population Geography.
2. Population Growth, Structure, Distribution and density, World Patterns, Concept of under, over and optimum population, Population composition – Age, Sex, literacy, occupational structure and gender issues.
3. **Population Dynamic** – Migration, types, causes, National and International pattern, Push and Pull factors, Rural and Urban dimensions, Demographic regions of India, Distribution of Population of India.

4. Population Resource Regions, Population Planning and Policies in under developed and developed countries, Human Development Index, National Population Policy.

Paper 15 - Practical V

Field Techniques and Survey Based Project Report

1. Field work in Geographical studies – Definition, Aim and Objectives, Methodology of Field Work.
2. Defining the Field area and identifying the Case Study – Rural/ Urban/ Physical/ Human/Environmental.
3. Field Techniques – Selection of the Appropriate Techniques : Observation, Sampling, PRA, Questionnaires (Open/ Closed/ Structured/ Non Structured), Interview with Special Focus on Focus Group Discussions, Space Survey (Transects and quadrants'. Contracting a Sketch), Map of the field work.
4. Designing the field Report – Aims and Objectives, Methodology, Analysis. Interpretation and writing the project report.

Practical Record :

1. Each Student will prepare an individual report based on primary and secondary data collected during the field work.
2. The duration of the field work should not exceed than 10 days in any Geographical region of India.
3. The Word count of the report should be about 8000 to 12,000 excluding figures, tables, photographs, maps references and appendices.
4. One copy of the report on A4 size paper should be submitted in soft binding

Note : The field work Report evaluation – 50 Marks, - Viva Voce – 30 Marks, Internal Assessment = 20 Marks.

*** This field study will be organized in Himalayan Region, Desert Region, Plain Region, Plateau and Coastal Region any part of India.**

Regarding List

1. Creswell J., 1994 : Research Design : Qualitative and Quantitative Approaches Sage Publications.
2. Dikshit, R.D. 2003, the Art and Science of Geography: Integrated Readings, Prentice Hall of India, New Delhi.
3. Evans M. 1988 : "Participant Observation : The Researcher as Research Tool' in Qualitative Methods in Human Geography, eds. J. Eyles and D. Smith, Polity.
4. Mukherjee, Neela 1993, Participatory Rural Appraisal: Methodology and Application Concept Pubs, Co. New Delhi
5. Mukherjee, Neela 2002, Participatory Learning and Action: with 100 Field Methods. Concept Pubs. Co., New Delhi.
6. Panwar, Mohan Singh, 2017 "**Sookcham Stariya Niyozan Evam PRA Techniques**" Binsar Publication.

7. Robinson A. 1998 **“Thinking straight and Writing that way”** in writing empirical research reports: A Basic Guide for Students of the Social and Behavioral Sciences eds. By F. Pryczak and R. Bruce Pryczak. Publishing: Los Angeles.
8. Special Issues on “Doing Field Work” The Geographical Review 91:1-2(2001)
9. Stopddard R.H. 1982 : Field Techniques and Research Methods in Geography. Kendall/ Hunt.
10. Wolcott. H. 1995. The Art of Field work. Alta Mira Press, Walnut Creek. C.A.

Semester - VI

Paper 16 : Economic Geography

Paper 17 : Geography of Uttarakhand

1. Geographical Background, Physiographic Regions, River Systems, Climate, Natural Vegetation, Soil, Glaciers and Lakes.
2. Population, Growth, Distribution, Structure, Literacy Migration, Rural and Urban settlements, Occupational structure, Major Tribes
3. Agriculture, Horticulture, Tourism and Pilgrimage, Important Natural Resources, Industries and Hydropower projects.
4. Major National Park, Biosphere Resource and Eco- sensitive Zones, Disasters, Ecological and Environmental Issues, Development and Contemporary issues.

Paper – 18 : Practical VI

- a. Two Field Survey Exercises – duration four Hours (50 Marks)
- b. GPS Handling and field survey by GPS = 10 (For Handling of GPS and Field Surveying) an expert can be hiring from the reputed Institution to trained the student.
- c. Sessional record and viva – voce – 10+10 = 20

Reading List :

1. Dent B.D., 1999 : Cartography : Thematic Map Design. (Vol. I). McGraw Hill.
2. Gupta K.K. and Tyagi V.C., 1992 : Working with Maps, Survey of India, DST, New Delhi.
3. Mishra R.P. and Ramesh A., 1989 : Fundamentals of Cartography, Concept Publishing.
4. Robinson A., 1953 : Elements of Cartography, John Wiley.
5. Sharma J.P., 2010 : Prayogic Bhugol, Rastogi Publishers.

6. Singh R.L., and Singh R.P.B., 1999 : Elements of Practical Geography. Kalyani Publishers
7. Singh R.L., 1998 : Prayogic Bhoogol Rooprekha, Kalyani Publications.



Sri Dev Suman Uttarakhand University, Badshahithaul

(Tehri Garhwal)

SYLLABUS

Sridev Suman Uttarakhand State University

Badshahithaul, Tehri Garhwal

M.A./ M.Sc. GEOGRAPHY

03 Years Semester System

(Effective from Academic Session : 2018-2019)

-: Syllabus Committee :-

1. Dr. Mohan Singh Panwar – Convener

Department of Geography

HNB Garhwal University (A Central University)

Srinagar (Garhwal)

Uttarakhand, India

2. Dr. Bhanu Prasad Naithani – Member

Department of Geography

HNB Garhwal University (A Central University)

Srinagar (Garhwal)

Uttarakhand, India

3. Dr. Kamal Singh Bisht – Member

Department of Geography

D.B.S. (P.G.) College

Dehradun

Uttarakhand, India

Summary of the Syllabus

Sridev Suman Uttarakhand State University

Badshahithaul, Tehri Garhwal

M.A./ M.Sc. GEOGRAPHY

03 Years Semester System

(Effective from Academic Session: 2018-2019)

Semester - I

Paper No.	Name of the Paper	M.A.			M.Sc.		
		Theory	Internal Assessment	Paper Total	Theory	Internal Assessment	Paper Total
Paper - I	Advance Geomorphology	80	20	100	80	20	100
Paper - II	Geographical Thought	80	20	100	80	20	100
Paper - III	Geography of Natural Resources	80	20	100	80	20	100
Paper - IV	Practical – I (Cartography)	80	20	100	80	20	100
TOTAL		320	80	400	320	80	400

Semester - II

Paper No.	Name of the Paper	M.A.			M.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total
Paper - V	Environmental Geography	80	20	100	80	20	100

Paper - VI	Geography of Himalaya	80	20	100	80	20	100
Paper - VII	World and India - Locational Aspects	80	20	100	80	20	100

Paper - VIII	Research Methodology & Techniques	80	20	100	80	20	100
Paper - IX	Practical – II						
	<ul style="list-style-type: none"> ● Remote Sensing & GIS ● Field Study 	40	10	50	40	10	50
		40	10	50	40	10	50
TOTAL		400	100	500	400	100	500

Semester - III

Paper No.	Name of the Paper	M.A.			M.Sc.		
		Theor y	Internal Assessment	Total	Theor y	Internal Assessment	Total
Paper - X	Geography of India	80	20	100	80	20	100
Paper - XI	Practical – III (Quantitative Techniques and Mapping)	80	20	100	80	20	100
Paper – XII	Elective : (Student can opt any one of the three papers given below)	80	20	100	80	20	100
Paper XII	Population Geography						
(a) Paper XII(b)	Urban Geography						
Paper XII(c)	Regional Planning and Development						
Paper – XIII	Elective : (Student can opt any one of the three papers given below)	80	20	100	80	20	100
Paper – XIII	Advanced Climatology						
(a) Paper – XIII (b)	Natural Hazards and Disaster Management						
Paper – XIII (c)	Geo – Hydrology						

TOTAL	320	80	400	320	80	400
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Semester - IV

Paper No.	Name of the Paper	M.A.			M.Sc.		
		Theor y	Internal Assessment	Total	Theor y	Internal Assessment	Total
Paper - XIV	Geography of Uttarakhand (A Regional Analysis)	80	20	100	80	20	100
Paper - XV	Practical - IV (Surveying and Weather analysis)	80	20	100	80	20	100
Paper - XVI	Elective : (Student can opt any one of the three papers given below)	80	20	100	80	20	100
Paper - XVI (a)	Agriculture Geography						
Paper - XVI (b)	Cultural Geography						
Paper - XVI (c)	Remote Sensing and GIS						
Paper - XVII	Elective : (Student can opt any one of the three papers given below)	80	20	100	80	20	100
Paper - XVII (a)	Bio Geography						
Paper - XVII (b)	Oceanography						
Paper - XVII (c)	Geography of Tourism & Recreation						
Paper - XVIII	Dissertation (The topic should be selected only from Uttarakhand Himalaya Region)	80	20	100	80	20	100
TOTAL		400	100	500	400	100	500

Semester - I

Paper - I : Advance Geomorphology

Time : 3 Hours

**Theory : 80 Marks
Internal Assessment: 20 Marks**

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Fundamental concepts of Geomorphology, methods and approaches of Landforms study, theories of Landscape development by Gilbert, Penk and Hack and Morphogenetic regions.

UNIT - II

Theory of Plate tectonics, Mountain building, Isostasy, Tectonic Geomorphology, Theories of slope development by young and king, peneplain and Pedi plains, geological structure and rock.

UNIT - III

Geomorphic process - Rivers, glacier, air, underground water and coastal, mass movement and resultant and forms, morphometry of drainage basin, profile of equilibrium rejuvenation and polycyclic landscape.

UNIT - IV

Applied Geomorphology engineering works, Anthropeinci process and landscape planning, Regional Geomorphology of Malwa pleatue, Ganga Plain, Nepal and Konkan region, Geomorphic Hazards and Mitigation.

Books Recommended :

1. **Bloom, A.L.** : Geomorphology Prentice Hall, New Jersey USA, 1979.
2. **Goudle, A.** : Geomorphologic Techniques, George Allen and Unwin, London, 1981.
3. **Washborn, A.L.** : Periglacial Processes and Environment, Edward Arnold, London, 1973
4. **Young, A.** : Slopes, Oliver and Boyd, London, 1972
5. **King, C.A..M.** : Techniques in Geomorphology, Edward Arnold, London, 1968.
6. **Embleton, C. and Thorries, J.** : Processes in Geomorphology, Arnold Hienmann, London, 1979.

7. **Phodes, D.D. and Williams, G.P.** : Adjustment of Fluvial Processes, George Allen and Uniwinn, Boston, 1982.

8. **Tricart, I. and Callam** : Introduction to Climate Geomorphology, Longmans London, 1972.
9. **Derbyshire, E. Gregory, K.J. and Halls, J.R.** : Geomorphological Processes, Butterworth, London, 1979.
10. **Gregory, K.J. and Walling, D.E.** : Drainage Basin Processes and Forms, Edward Arnold, London, 1973.
11. **Gregory, K.J. and Walling, D.E.** : Man and Environment Processes, Butter Worths, London, 1981.

Paper – II : Geographical Thought

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT – I

Contribution of Greeks and Romans with special reference to Ptolemy and Strabo, Geography in Muslim world, Geography as Science of : **(1) Location (2) Distribution (3) Areas differentiation (4) relationships (5) Special organization and (6) Region.**

UNIT – II

German School of Geography – Humboldt, Ritter, Retzel
French School of Geography – Blache & Brunhes
American School of Geography – Sauer & Huntington

UNIT – III

Models and paradigms, system theory, phenomenological approach, dualism between : **(1) Physical and Human Geography (2) Regional and Systematic Geography and Quantitative Revolution.**

UNIT – IV

Positivism, Pragmatism, Functionalism, Idealism, Existentialism, Behavioral, Radical and Humanistic Geography, Future of Geography and contribution of Indian Geographer

Books Recommended :

1. **Haggett, P.** : Geography – A Modern Synthesis
2. **Chorley, R.J. and Claval, P.** : Models in Geography

3. **Johnston, R.J. and Claval, P.** : Geography since the Second World War : An International survey, Crown Haim, Sydney, 1984.
4. **Johnston, R.J.** : The Future of Geography, Methuen, London, 1988
5. **Adhkari, S.** : Fundamentals of Geographical Thought, Chaitanya Publishing House, Allahabad, 2006.
6. **Bunkse, V.E.** : Geography and the art of Life, John Hopkins University Press, Baitimore, 2004
7. **Marcus, D.** : **Post** – Structuralism in Geography, The Diabolical Arts of Spatial Sceinces, Edinburgh University Press, Edinburgh, 1999
8. **Gaile, G. and Wilmot, C. (ed)** : Geography in America at the Dawn of the 21st Centrury, Oxford University Press, Oxford & New York 2003.
9. **Hubbard, P. et al** : Thinking Geographically : Space, Theory and Contemporary Human Geography, Continuum, London, 2002
10. **Majid Husain** : Geographic Thought (2007)
11. **Dixit, R.D.** : Geographical Thought : A critical History of ideas, Prentice Hall of India, New Delhi, 2001.
12. **Dixit, R.D.** : Bhaugolic Chintan, Prentice Hall of India, New Delhi, 2001.

Paper – III : Geography of Natural Resources

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT – I

Concept of Natural Resources, Classification: Dynamic theory of Resources, Resources Scarcity and adequacy, Resource regionalization, Economic development and resources.

UNIT – II

Land, water, mineral, energy and biotic resources – distribution, use – misuse and conservation – Global and Indian Scenario

UNIT - III

Resource appraisal, resource depletion and emerging issues like desertification, deforestation, loss of Bio-Diversity, Energy crises, water scarcity and conflicts. Locational aspect of Resources in the world.

UNIT - IV

Natural Resource Data management system, sustainable development and conservation of resources, integrated resource development, Globalization and resources, community Participation and governance and contemporary issues, Locational aspect of resources in India.

Books Recommended:

1. **Holechek, J.L. et al** : Natural Resources : Ecology Economics and Policy, Prentice Hall, New Jersey, 2000
2. **Kates, R.W. and Burton, I. (ed)** : Geography Resources and Environment, Vol. II, University of Chicago Press, Chicago, 1986.
3. **Mc Laren, D.J. and Skinnet, B.J. (ed)** : Resources and World Development, John Wiley & Sons, New York, 1986.
4. **Newson, M.D.** : Land, Water and Development, River Basin Systems and Management, Rutledge London, 1991.
5. **Qwen, S. and Qwens, P.L.** : Environment, Resources and Conservation, Cambridge University Press, New York, 1991.
6. **Rees, J.** : **Natural Resources** : Allocation, Economics and Policy, Methuen, London, 1988
7. **Redclift, M.** : Sustainable Development :Exploring the Contraction , Methuen London, 1987.
8. **Simmons, I.G.** : Earth, Air and Water Resources and Environment in Late 20th Century, Edward Arnold, 1991.
9. **Thomas, Alan et al** : Environmental Policies & NGO Influence, Rutledge, London, 1995.
10. **Mather, A.S. and Chapman, K.** : Environmental Resources, Longman Scientific and Technical, London, 1995.
11. **Harper, C.L.** : Environment and Society Human Perspectives on Environment Issues, Prentice Hall New Jersey.
12. **Burton, I. and Kates, R.W. (ed)** : Readings in Resource Management and Conservation, 1965
13. **Allen, S.W. and Leonard, J.W.** : Conserving Natural Resources, Mc Graw Hill, New York.
14. **Smith, G.H. (ed)** : Conservation of Natural Resources, John Wiley, New York.

Paper – IV : Practical – I (Cartography)

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The syllabi for practical is related to laboratory work on cartographic mapping. The practical exam will be of three hours duration. The division of Marks in Practical shall be as given below :

Laboratory Work (Cartography)	- 60
Session Record Work	- 10
Viva Voce	- 10
Internal Assessment	- 20

The Laboratory work is divided into four units, Two Exercises are to be set from each unit with internal choice and candidates will be required to attempt four exercises in all. The cartographic mapping work examination will be of three hours duration in which exercises will be given on Cartography. All Questions carry equal marks

UNIT – I

Polyconic, International, Gnomonic (Equational, Aspect), Gall's Stereographic, Interrupted Mollweide's and Sinusoidal

UNIT – II

Slope analysis by wenthworth's Smith's, Henry – Raiz's, Analysis of Relief Characteristics from contours, Profiles Transverse, Longitudinal, Serial, Superimposed, Projected and Composite.

UNIT – III

Morphometric analysis – Area height, Altimetric frequency and Hypsometric curve, Drainage density, stream order and bifurcation ratio

UNIT – IV

Interpretation of Topographical Maps – Land use and settlements. Topographical mapping Geological Cross Section Drawing

Book Recommended :

1. **Barrett, E.C. & Courts, L.F.** : Introduction to Environmental Remote Sensing
2. **Dickinson, G.O.** : Maps and Aerial Photographs
3. **Smith, H.T.V.** : Aerial Photographs and their Applications
4. **Deekshatula, B.L. & Rajani, Y.S.** : Remote Sensing

5. **Davis, P.** : Data, Description and Presentation

6. **Garnett, A.** : Geographical Interpretation of Topographical Maps
7. **Mishra, R.P. & Ramesh A.** : Fundamentals of Cartography
8. **Raja, Moonis** : Source of Socio – Economic Data
9. **Sharma, J.P.** : Practical Geography (Hindi)
10. **Singh, R.L.** : Practical Geography (English/ Hindi)
11. **Steers, J.A.** : An Introduction the Study of Map Projections, U.L.P., London
12. **Sabins, F.F.** : **Remote Sensing** : Principals and Interpretations, John Wiley and Sons, New York, 1987

Semester – II

Paper - V : Environmental Geography

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Meaning and Scope of Environment Geography, Basic Principles of Environmental Geography : Composition and types of Environment, Ecological Principles, Man – Environment relationship, Restoration of Ecology.

UNIT - II

Ecosystem : Concept and components, Trophic levels, Food chains and food webs, Energy flow in the ecosystem, Ecosystem stability, High land – low land interactive system, human ecological adaptation.

UNIT - III

Environmental Degradation, Environmental Pollution (Air, Water and Solid Waste), Ganga Pollution & Ganga action Plan, Environmental Problems – Global Warming, Ozone Depletion and Green house effects, transformation of nature by man, global ecological imbalances.

UNIT - IV

Environmental Management : Concept and approaches : Ecosystem Management Strategies, Environmental Dimension in Planning – Sustainable Development, Eco- Development, Limits to growth , Environmental Consciousness, National Environmental Policies and Programms, Environmental Impact assessment, Rio Summit, Kyoto Protocol & Carbon Trading.

Books Recommended:

1. **Singh, L.R. et al** : Environmental Management, Allahabad Geographical Society, Allahabad.
2. **National Academy of Sciences** : Understanding Climate Changes, Washington D.C.
3. **Furley, P.A. and Neway, W.W.** : Man and the Biosphere, Butterworth, London
4. **Arvil, R.** : Man and Environment, Penguin
5. **Bennet, R.J. and Chorley, R.J.** : Environmental System – Philosophy, Analysis and Control, Methuen, London.
6. **Singh, Savindra** : Environmental Geography, Prayag Pustak Bhawan, Allahabad
7. **Detwler, T.R.** : Man's impact on the Environment, McGraw Hill, New York
8. **Detwyler, T.R. and Marcus, M.G.** : Urbanization and Environment, Duxbury Press, California.
9. **Singh, Savindra** : Paryavaran Bhoogol, Prayag Pustak Bhawan, Allahabad
10. **Panwar, Mohan Singh (2007) - Environmental Changes and Sustainable Development in the New Millennium**, Research India Press, New Delhi.
11. **Adans, W.M.** : **Green Development : Environment and Sustainability in the Third World**, Routledge, London, 2001
12. **Odum, E.P.** : Fundamentals of Ecology, W.B. Saunders Co. Philadelphia, 1971
13. **Mather, A.S. and Chapman, K.** : Environmental Resources, Longman Group Ltd. U.K. 1995
14. **Hobbs, J.B.** : Applied Climatology, Butherworth, London
15. **Park, C.C.** : Ecology & Environmental Management, Botheworth, London
16. **Bhatt, H.P. & Bhatt Sangita (ed)** : **Environment – Yesterday, Today and Tomorrow** 1992, Galgotia Publication, New Delhi

Paper – VI : Geography of Himalaya

Time : 3 Hours

Theory : 80 Marks

Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions

in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Geo- physical identity: Origin of Himalaya and its structure: Himalaya as regional entity, geo- political issues, cultural appraisal, Himalayan people, Geo- sensitivity of Himalaya, future of Himalaya

UNIT - II

Physiography, Landforms, drainage (Volume) and Himalaya as water tower, glaciers, lakes, passes, climate, natural vegetation, natural hazards, Geo- Ecological problems of Himalaya created by anthropogenic activities

UNIT - III

Demography and Economy – Distribution, density and growth of population, Migrations, Urbanization, Rural and Urban Population, Agriculture, Industry, Animal Husbandry, Horticulture, Tourism and Power Projects.

UNIT - IV

Geographical account of Western, Central and eastern Himalaya, Regional analysis of Kashmir, Laddak, Kangra and Lahul, Doon, Kathmandu Valley, Tista Valley Mountain Development Planning and Policy.

Books Recommended:

1. **Lal, J.S. & Moddie** : The Himalaya – Aspect of Change A.D. (ed)
2. **Bose, S.C.** : Land and People of the Himalaya
3. **Kayastha, S.** : The Himalayan Beas Basin
4. **Valdin, K.S. (ed)** : Kumaun- Land and People
5. **Singh, T.V. (ed)** : Mountain and Development.
6. **Singh, O.P. (ed)** : The Himalaya – Nature, Man & Culture
7. **Joshi, S.C. and others** : Kumaun Himalaya
8. **Nityanand & Kumar, K.** : The Holy Himalaya – Geographical Interpretation of Garhwal Himalaya
9. **Kharkwal, S.C.** : Uttarakhand- Physico –Culture Complex
10. **Maithani, D.D.** : Central Himalaya : Ecology, Environmental Resources & Development
11. **Rawat, M.S.S. (ed)** : Central Himalaya – Environment Development Vol. I & II
12. **Vaidiya, K.S. (ed) Kumaon** : Land and People (1988)
13. **Bhatt H.P. & Bhatt Sangita** : Environmental Dimensions of Rural Settlements in the Himalaya in 1993

Paper – VII : World and India Locational Aspects

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Objective : The Paper is designed to acquaint the students with the importance of location as one of the important aspects of geographical studies. The aim to promote awareness among students about Atlas

There will be two parts of this course:

- A. An outline map of India will be provided to the students and they will have to mark locations on it. 15 Locations will be given and 01 mark for each correct location.
- B. An outline map of the World with indicated location of features of the numerals will be provided to the Students and they will identify the location feature. 15 locations features will be given for identification and 01 mark to each correct identification

Students will provide write up **(for both A and B Part)** on the significant geographical relevance and importance of the locations (Marked and identified), whether physical, economic, cultural, ecological, environmental and commercial etc. in 30 words on each. 01 Mark is allotted for each write- up.

Distribution of Marks :

A. Locations	20 Marks
Write up in 30 Words	20 Marks
B. Identification of Locations	20 Marks
Write up in 30 Words	20 Marks

Course Contents:

Physical – Mountain and Ranges, Rivers, Forest, Soil, Lakes and Natural Regions, Drainage, Region Ocean and Seas, Climate and Change, major currents, major land forms

Cultural – State and Capitals, Important Cities, Population, Rural – Urban, Tribal Areas, Planning Regions, Population, Agglomeration, Poverty, Metropolitan

Economic – Human Ecological regions, Industrial regions and Major industrial, Agricultural regions/ belts, industrial regions and complexes, Power Plants, Hydro Power Projects, Important Industries, Important ports and transport routes, important resources.

Others – Bio Diversity, Natural Parks, Environment, Ecology and Contemporary Issues

Note : *Examiner (Paper Setter) should select location and identified locations from all aspects of course and covering the entire map distributed all across. Repetition of Location of same nature and character should be avoided.*

Examiner will provide key of both A and B part. Map provided to the students should be of same scale/ size on which key is prepared. For part A a blank map should be attached with the question paper. For part B numerically identified map to be enclosed with question paper. For evaluation of this paper, key is of utmost importance prepared by the paper setter.

Books Recommended:

1. India & the world – NATMO, School Atlas, Oxford – Atlas & time UK Print World Atlas AND Uttarakhand Atlas.
2. Britanica World Atlas, Environmental Map, Sweden Print, Natural Region of the World.

Paper – VIII : Research Methodology & Techniques

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : *The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.*

UNIT – I

Concept & Significance of Research in Geography, Nature, objective and basis of Research, types of research, approaches & methods, Research problem selection, techniques and Research process.

UNIT – II

Research Design : Meaning Need, Features and types

Sampling : Methods and steps, design of spatial sampling, Survey and Experiments, Data collection methods – Primary and secondary data, schedule and questionnaire and observation

UNIT – III

Hypothesis, meaning, characteristic importance and formulation, testing of Hypothesis – parametric (Standard) and non parametric, Review of literature, Bibliography and case study

UNIT – IV

Application of Remote Sensing and GIS in Research, Arrangements and Analysis of Data and map, Quantitative and qualitative interpretations, Writing of Research report/ paper and dissertation, Framing of Pilot and Research project

Books Recommended:

1. **Bhatt, H.P. and Bansal S.C. (2012)** : Research Methodology (in Hindi), Meenakshi Prakashan, Meerut.
2. **Ahuja, R. (2001)**: Research Methods, Rawat Publication, Jaipur and New Delhi
3. **Bhattacharya, D.K. (2005)**: Research Methodology, Excel Books, New Delhi
4. **Blackburn, J. and Holland, J. (eds) (1998)** : Who changes ? Institutionalizing Participation in Development IT Publication, London
5. **Blaxter, L., Hughes, C. and Tight, M. (1996)**: How to Research. Open University Press, Buckingham.
6. **Crang, Mike 1999** : Cultural Geography, Rutledge, London
7. **Daniels, P., Bradshaw, M. et al. (2000)** : Human Geography : Issues for the 21st Century, Prentice Hall, London and Pearson Publishers, Singapore, Indian reprint, 2003.
8. **Denzin, N.K. and Lincoln, Y.S. (eds) 2000** : Handbook of Qualitative Research Thousand Oaks CA Sage Publications.
9. **Dikshit, R.D. (2003)** : The Art and Science of Geography : Intergrated Readings, Prentice – Hall of India, New Delhi
10. **Dorling, D. and Simpson, L. (eds) (1991)** : Statistics in Society, Edward Arnold, London
11. **Fisher, P. and Unwin, D. (eds) (2002)**: Virtual Reality in Geography, Taylor and Francis, London
12. **Flowerdew, R. and Martin, D. (eds) (1997)** : Methods in Human Geography, A Guide for Students Doing a Research Project, Longman, Harlow
13. **Hay, I. (ed), (2002)** : Qualitative Research Methods in Human Geography, Oxford University Press, New York
14. **Henn, M. Mark W. and Nick F. (2006)** : A Short introduction to Social Research, Vistaar Publications, New Delhi
15. **Eyles, J. and Smth, D.M. (1988)** : Qualitative Methods in Human Geography, Polity Press, Dales Brewerine Cambridge.
16. **Kitchin, R. and Tate, N. (2001)** : Conducting Research into Human Geography, Theory, Methodology and Practice, Prentice- Hall, London
17. **Har Prasad** : Research Methodology and Techniques in Geography, Rawat Publicaiton, Jaipur

Paper – IX : Practical II (Remote Sensing, GIS & Field Study)

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

The syllabus for Practical is divided into two sections, Section 'A' is related to Laboratory Work, and Section 'B' is related to field work (Geographical Tour). The Laboratory work is divided into four units, Eight questions will be selected at least two questions from each unit, Candidate will have to attempt four questions selecting at least one question from each unit. The division of marks in Practical is given below -

Lab Work	-	M.M. 40
Sessional Record	-	M.M. 05
Viva - Voce	-	M.M. 05

Section A - Laboratory Work

Unit I

Basic of Computer, Concept of Maps, Coordinates, Projection (WGS84 and Everest), Types of Files, Export Import file, Layer Stacking of Multispectral Imagery.

Unit II

Concept of Geo referencing (maps to image, image to image), sub- setting with the help of AOI layer, Mosaicking, Radiometric and Geometric errors and correction, image classification.

Unit III

Spatial Data integration, Digitization (Point, line, Polygon), Non Spatial Data integration, Editing of Spatial and Non Spatial Data, Building Topology

Unit IV

Basics of GPS and Computer Cartography and Mapping

Section B - Field Work (Geographical Tour)

The field study is compulsory for all students, those who will not take will not given any mark for this. The field study/ work are designed to acquaint the students that '**Geography is an observational Science**' and field work is one of the important methodologies in Geographical studies.

The students are to be sensitized about pre filed work preparation, conduct field work, post field work exercises and report writing.

Field study tour to provide traverses across and macro regions of the country specially problem areas, new Geographical Regions, it should be arranged of about two week duration. Student will be trained in field work collection of data, mapping data/ information etc. in which minimum 5 maps (Location map, Route

Map, Physical, Socio - economic and Cultural Map)and diagrams and **40 pages** of write up is necessary.

Field Study Guide (Teacher) – Will submit a precise report (*at least 5 pages*) of field study work about the detail plan of field study, Justification of Selection of the Region, day wise field study plan with the list of students present/ attended the field study to the HoD Concern.

Books Recommended:

1. **Jenson, J.R.** : Introduction to Digital image processing , Prentice Hall, Englewood cliffs, N.J.
2. **Pratt, W.K.** : Digital image processing, John Wiley & Sons, New York, 1995
3. **Hord, R.M.** : Digital image processing of Remotely sensed Data, Academic Press, New York, 1989
4. **Nag, P.** : Thematic cartography and Remote Sensing , Concept Publishing House, New Delhi
5. **Black Well, B.** : Statistics in Geography, Basil Black Well Ltd. , 1988
6. **Sinha, P.K. & Sinha, P.** : Computer Fundamentals, 3rd Ed. B.P.B. Publication
7. **Lo, C.P.** : Applied Remote Sensing, Longman Scientific and Technical, Harlow, ESSEX
8. **Peuquet, D.J. & Marble, D.F.** : Introductory Readings in Geographic information Systems Taylor & Francis, Washington, 1990
9. **Spurr, R.** : Photogrammetry and Photo Interpretation, The Rolland Press Co. London, 1960
10. **Cole, J.P. and King, C.A.M.** : Quantitative Geography, John Willey, London, 1968
11. **Panwar, Mohan Singh (2017)** - “Sookcham Stariya Niyozan Evam PRA Techniques” Binsar Publication.

Semester – III

Paper – X : Geography of India

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT – I

Indian federalism, India unity in diversity (View points from social geography), physiography, Drainage (Volume), Climate Mechanism of Indian Monsoon (Recent Theories), Soil and Natural Vegetation

UNIT - II

Human Development Index and its components, Growth and Distribution and Density of Population, Trends of Urbanization Special Distributional Pattern of Settlements (Rural & Urban)

UNIT - III

Agroclimatic, Region, Rainbow Revolution, Industrial Complex and Industrial Regions, Major River Valley Projects, energy crises and food security

UNIT - IV

Growing importance of ports, fast two five years plans, experience of Rural Planning, Integrated R.D.P., Multi level planning, Community participation & governance and planning contemporary issues and Economic Reforms – Multinationals and liberalization

Books Recommended:

1. **Misra, R.P. et al** : Regional Development Planning in India, Vikas Publishers, New Delhi, 1978
2. **Mishra, R.P. (ed)** : Local level Planning and Development, Sterling Publication, New Delhi
3. **Diamond, D. (ed)** : Regional Disparities and Regional Policies, Pergamon Press, Oxford, 1982
4. **Subrahmayam, K.N. (ed)** : Economic Development and Planning in India, Pub. New Delhi, 1985
5. **Sundaram, K.V., Misra, R.P. and Rao, V.L.S.P.** : Spatial Planning for a Tribal Region, Inst. Of Development Studies, Mysore, 1971
6. **Regional Science Association** : Regional Planning in India , IIT Kharagpur, 1995
7. **Prasad, K.V.** : Planning at the Grass Roots, Sterling Pub. Pvt. Ltd. New Delhi
8. **Chand, Mahesh and Puri, V.K.** : Regional Planning in India, Allied, New Delhi, 1983
9. **Chandna, R.C.** : Regional Planning : A Comprehensive Text, Kalyani Publication, New Delhi
10. **Tiwari, R.C.** : Geography of India, Prayag Pustak Bhawan, Allahabad, 2008
11. **Tiwari, R.C.** : Bharat ka Bhoogol, Prayag Pustak Bhawan, Allahabad, 2008
12. **Maithani, D.D. & Prasad, Gayatri & Nautiyal, Rajesh:** Geography of Uttarakhand, 2010 Sharada Pustak Bhawan Allahabad.
13. **Misra, R.P.** : Regional Planning and National Development, Vikas Publication, New Delhi

Paper - XI : Practical – III (Quantitative Techniques and Mapping)

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

The syllabi for Practical is related to laboratory work on Quantitative techniques and Mapping Eight questions will be set selecting at least two questions from each Unit. Candidate will have to attempt four questions selecting one question from each Unit. It will be of two hour duration.

Distribution of Marks :

Laboratory Work	-	30
Sessional Record	-	20
Viva Voce	-	10

UNIT I

Types of Spatial Data : Line, Area and Point, Levels of their measurement – Nominal, Ordinal interval and ratio, Diagrammatic representation of Data Circle, Spheres, Block Piling, Erograph (Cropcycle and Activity Pattern) Climatograph.

UNIT II

Nearest Neighbor Analysis (NNA), Gini's Co- efficient, Rank Size Rule, Location quotient, Lorenz, Curve, Compositing- the indices of Nodal Accessibility

UNIT III

Elements of Maps – Generalization, Symbolization and Classification, Techniques of Mapping – Dot, Choropleth and Isopleths, Stigler's & Sten de Geer's method. Choropleth – Simple and asymmetric stepped statistical surface, class less choopleth, errors and their elimination

UNIT IV

Correlation by spearman's and Karl Person's method, Scatter Diagram, Simple Linear Regression analysis, Construction of Regression Line, Plotting of Residuals of Absolute and Relative location, explanation of Residuals plotted on the maps.

Books Recommended :

1. **Barrett, E.C. & Curtis, L.F.** : Introduction to Environmental Remote Sensing
2. **Dickinson, G.O.** : Maps and Aerial Photographs
3. **Smith, H.T.V.** : Aerial Photographs and their Applications
4. **Dookshatula, B.L. & Rajani, Y.S.** : Remote Sensing
5. **Davis, P.** : Data Description and Presentation
6. **Garnett, A.** : Geographical Interpretation of Topographical Maps
7. **Mishra, R.P. & Ramesh A.** : Fundamentals of Cartography

8. Raja, Moonis : Source of Socio – Economic Data

9. **Sharma, J.P.** : Practical Geography (Hindi)
10. **Singh, R.L.** : Practical Geography (English / Hindi)
11. **Lillesand, T.M. and Keifer, R.W.** : Remote Sensing and Image Interpretation, John Wiley and Sons, New York, 1999
12. **Jenson, J.R.** : Introduction to Digital image Processing, Prentice Hall, Englewood Cliffs, NJ.
13. **Hord, R.M.** : Digital Image Processing of Remotely Senses Data, Academic Press, New York, 1989
14. **Pratt, W.K.** : Digital Image Processing, John Wiley & Sons, New York, 1995
15. **Robinson, A.H. et al** : Elements of Cartography, John Wiley and Sons, New York

Paper – XII Elective: (Student can opt any one of the three papers given below)

Paper – XII (a) : Population Geography

Time : 3 Hours

Theory : 80 Marks

Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT – I

Nature, Scope and Significance of Population Geography, its relation with demography, Relevance of Population Studies in Geography: Nature and Sources of Population data and maps, Methods and Approaches to Population Study, Recent Development in Population Geography, Population and Development Planning

UNIT – II

Population growth distribution and density, World Patterns and their determinants, concepts of 'Under', over and optimum population, Population composition – age, sex, literacy, occupational structure and gender issues. Population growth in the context of Manpower and employment

UNIT – III

Population Dynamics – Measurement of Fertility and mortality, **Migration – Causes**, types, national and international Pattern, Push and Pull Factors, Mobility Transition, Rural and Urban Dimensions, Globalization and Labour mobility, **Demographic regions of India** : Attributes, Structure and Characteristics

UNIT – IV

Concept of Human Resource and Management, Population Resource Regions, Population Planning and Policies in Under – Development and developed countries with special reference to Japan and India, Population as Social Capital, Human Development Index, National Population Policy

Books Recommended:

1. **Chandna, R.C.** : A Geography of Population, Concept, Determinants and Patterns, Kalyani Publication, New Delhi, 2000
2. **Clarke, John I.** : Population Ecology, Pergamon Press, Oxford 1973
3. **Crook, Nigel** : Principles of Population and Development, Pergamon Press New York, 1997
4. **Garnle, R.B.J.** : Geography of Population, Longman, London, 1970
5. **Srinivasan, K. & Vlassoff M.** : Population Development Nexus in India : Challenges for the Millennium, Tata Mc Graw Hill, New Delhi, 2001
6. **Srinivasan, K.** : Demographic Techniques and Applications, Sage Publication, New Delhi, 1998
7. **Sundaram, K.V. and Nangla, Sudesh (ed)** : Population Geography, Heritage Publication, Delhi 1986
8. **Woods, R.** : Population Analysis in Geography, London, 1979
9. **Zelinsky, Wilbur** : A Prologue to Population Geography, Prentice Hall, 1966
10. **Clarke, J.I.** : Population Geography, Pergamon, Oxford, 1972

Paper – XII (b) : Urban Geography

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT – I

Meaning, Scope and approaches of Urban Geography: Changing Paradigms of Urban Geography, Development of Urban Geography in India, **Theories of Urban Origin** : Urbanization Cycle, Trends of Urbanization – World and India, Historical and Spatial Perspective

UNIT – II

Urban Morphology, land use models and city growth – concentric zone, Urban Economic Base, multiple nuclei models, Structure and Characteristics of Central Business District, Classification, Nelson – Steigenga webb and double index method, Rank size rule applicability

UNIT - III

Centrality and Hierarchy of Towns, Central place theory of Christaller, Concept of City Region - Rural Urban fringe and its delimitation, satellite town, suburbs, conurbation, urban problems, poverty, slums urban renewal and sprawl, solid waste

UNIT - IV

National Urban Policy and Urban land use Planning: Concept of garden city and New Town, Major Plans : A case study of Nainital and Dehradun, Planned and Smart Cities : Chandigarh and New Tehri town, urban development, planning in India - Policies, programme and implication, Delhi and NCR Globalization and Urban Planning

Books Recommended:

1. **Singh, L.S. and Goilledge, R.G. : Cities, Space and Behaviour :** Elements of Urban Geography, Prentice Hall, New Delhi
2. **Mishra, H.N. (ed) :** Urban Geography, Heritage
3. **Ortham, R.M. :** Urban Geography, John Wiley, New York
4. **Short, R.J. :** An introduction to Urban Geography, Rutledge and Kegan Paul, London, 1984
5. **Johnston, R.J. :** City and Society, Hutchinson, London
6. **Herbert, D.T. :** Urban Geography : As Social Perspective, David and Charles, Newton Abbot, 1977
7. **Johnson, J.H. :** Urban Geography : An Introductory Analysis, Pergamon Press, London, 1972
8. **Singh, R.L. :** Urban Geography in Developing Countries, National Geographical Society India, Varanasi
9. **Berry, B.J.L. and Horton, F.F. :** Geographic Perspectives on Urban Systems, Prentice, Englewood Cliffs, New Jersey, 1970
10. **Ramachandran, R. :** Urbanization and Urban Systems of India, Oxford, New Delhi, 1993
11. **Knox, P.L. and Taylor. P.J. :** World Cities in a World System, Cambridge University U.K. 1995
12. **Harvey, D. :** Social Justice and the City, Arnold, 1973

Paper – XII (c) : Regional Planning and Development

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Concept, Scope and Typology of Planning, Regional Planning- its Philosophy and purpose, Theoretical and operational frame work of Regional Planning, Approaches to regional planning, Historical Development of Regional Planning, Geography and its role in regional planning and development

UNIT - II

Methodology and techniques of regional planning, Analytical techniques and procedural techniques, Principles of Regionalization, Planning Processes – sectoral and spatial planning, short – term and long term perspective planning, Multi Regional, Multi – level and Decentralize Planning

UNIT - III

Regional Development Strategies : Identification of planning regions , Regional Planning strategies for backward area – Hill area, tribal area case studies of planning program, achievements, problems and prospects from Japan and China

UNIT - IV

Spatial inequalities and regional imbalances in India : Problems of Regional planning, indicators and level of regional development, Dilemma of Development of Problem areas, Regional Planning & Development in India, Region Planning and Development strategies in the 21st Century NITI Ayog of India.

Books Recommended:

1. **Johnsn, E.A.J.** : The Organization of Space in Development Countries, Harward University Press Cambridge, 1970
2. **Kuhilnski, A.R. (ed):** Growth Poles and Growth Centers in Regional Planning, Mouton, The Hague, 1972
3. **Misra, R.P. et al** : Regional Planning : Concepts, Techniques and Policies, University of Mysore, Mysore, 1969
4. **Misra, R.P. et al** : Multi Level Planning, Heritage Publishers, Delhi, 1930
5. **Hall, Peter** : Urban and Regional Planning, Penguin Books Ins, New York
6. **Shorts, J.G.M. Hill** : Regional Planning, University Press, Rotterdam

7. **Glasson John** : Regional Planning, Hutchison, London
8. **Mishra, R.P.** : Development Issues of our time, Concept Pub. Co. New Delhi
9. **Alden, J. and Morgan, R.** : Regional Planning : A Comprehensive View, Leonard, Hill Bed Beds, 1974
10. **Glassen, J.** : An Introduction to Regional Planning, Hutchison Educational, London
11. **Hall, Peter** : Cities of Tomorrow, Updated Edition, Blackwell Publishers Ltd. Oxford 1996

Paper – XIII : Elective : (Student can opt any one of the three papers given below)

Paper – XIII (a) : Advanced Climatology

Time : 3 Hours

Theory : 80 Marks

Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT – I

Meaning, Scope and Development of Climatology, Atmospheric equilibrium, Adiabatic temperature change, Jet stream, El – Nino, La- Nina, Walker Circulation, Southern Oscillation, Precipitation & Humidity

UNIT – II

Air masses – origin, growth, classification and distribution, Horizontal and Vertical motion of winds, Fronts and front genesis, cyclones and anticyclones, temperate and tropical cyclones

UNIT – III

Climate Classification of Koppen and Thornthwalte, Major Climate types, Weather analysis data acquisition and dissemination and weather forecasting – methods, types and accuracy weather and human behavior, Weather modification, atmospheric hazards – cloud bursts

UNIT – IV

Climate Changes – Definition & detection : Tree rings, Glacial ice & Oxygen Isotope analysis causes, Plate tectonics, volcanic activity, orbita variations, solar variability, Human impact global climate, Global Warming, Artificial climate and acid precipitation.

Books Recommended:

1. **Choriey, R.G. and Barry, R.G.** : Atmosphere, Weather and Climate Methuen & Ltd., London, 1995
2. **Critchfield, H.J.** : General Climatology, Prentice Hall of India, New Delhi 2002
3. **Aguado, E. and Burt J.E.** : Understanding Weather and Climate Prentice Hall, 2001

4. **Brasseur, B.P. et al** : Atmospheric Climatology and Global, Oxford University Press, New Delhi ,1999
5. **Hiddore, J.E.** : Global Environment Change, Prentice Hall, New Jersey, 1996
6. **Hidoore,J.J.** : Global Environment Change, Prentice Hall, New Jersey , 1996
7. **Lockwood, J.G.** : World Climatology, Eibs and Edward Arnold (Pub.) Ltd. 1979
8. **Miller, A.et al** : Elements of Meteorology, Merrill and Columbus
9. **Morgon, M.D. and Moran, J.M.** : Weather and People, Prentice Hall, New Jers 1997
10. **Oliver, J.E. and Hiddore J.J.** : Climatology An Atmosphere Scinece, Pears Education, India 2003
11. **Thompson, R.D. and Perry, A.** : Applied Climatology, Routledge, London and New York, 1997
12. **Trewartha, G.T.** : An Introduction to Climate McGraw Hill Series in Geogrpahy, 195
13. **Trewartha, G.T.** : The Earth's Problem Climates, Univeristy of Wisconsin Pres 1981
14. **Lal, D.S.** : Climatology, Sharda Pustak Bhawan, Allahabad
15. **Singh, Savindra** : Climatology, Prayag Pustak Bhawan, Allahabad, 2005
16. **Lal, D.S.** : Jalvayu Vigyan, Sharda Pustak Bhawan, Allahabad,
17. **Singh, Savindra** : Jalvayu Vigyan, Prayag Pustak Bhawan, Allahabad

Paper – XIII (b) : Natural Hazards and Disaster Management

Time : 3 Hours

Theory : 80 Marks

Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Meaning and concept of Hazards and Disaster, Type of Natural and Manmade Hazards, Elements of Disasters: Hazard analysis, Vulnerability and risk analysis, Disaster Management – Determinants of Scale

UNIT - II

Natural Hazards : Typology, Regional Dimension of Hazards, Occurrence and trends, Methods of Identifying Hazards Prone regions, Major terrestrial Disasters : Seismic Disasters, Volcanic Disaster, Landslides and Tsunamic Disaster, Reasons of increasing frequency of Disasters

UNIT - III

Disaster Management : Concept, stages of Disaster Management, Pre- Disaster stage – Disaster Preparedness (Disaster research, Disaster Predication and Disaster warning), Methods and levels of preparedness, Disaster mitigation and Disaster prevention, Post – Disaster stage – Rescue and relief work, Disaster Management Act

UNIT - IV

Different type of Disaster and Hazards prone areas in India, Disaster Management Policies and Approaches, Major Disaster in India and their management, Resource to Disaster, Government, Non Government Programmes/ Institution of Disaster Management

Books Recommended:

1. **Tianch, L.** : Landslide Hazard Mapping and Management in China, ICIMOD, Nepal, 1996
2. **Valdiay, K.S.** : Environmental Gology, Tata McGraw Hill Co. Ltd., New Delhi 1987
3. **Zareba, Q. and Mance V.** : Landslides and their Control, Elsevier Amsterdam, 1969
4. **White, G.F. (ed)**: Natural Hazards : Local, National, Global, Oxford University Press, London 1974
5. **Gupta, H.K.** : Dams and Earthquakes, Elsevier, Amsterdam, 1976
6. **I. et al** : The Environment as Hazards, O.P.U. , New York, 1978
7. **B.A. et ai (ed)** : Geological Hazards, Springer Varlay, New York, 1950
8. **C.** : Natural Hazards and Global Change I.T.C. Journal, 1989
9. : Environmental Geography (English /Hindi)
10. **Petak, W.J. & Atkinson, A.D.** : Natural Hazards Risk Assessment and Public Policy, Springer - Verlay, New York, 1982

Paper - XIII (c) : Geo - Hydrology

Time : 3 Hours

Theory : 80 Marks

Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Definition, concept, importance and scope of Geohydrology, Water resource, The Hydrological cycle, concept of water shed management in Hydrology, Mountain Hydrological system

UNIT - II

Precipitation and Measurement, runoff process and factors, surface runoff, compilation of runoff, Discharge and Measurement, Hydrograph, stream gauging and stream flow, constraint - examples from India

UNIT - III

Infiltration - capacity, rate, factors and methods of compilation of infiltration, evaporation factors, estimation and its control, transition ratio,

Management planning : Ground Water Hydrology origin, occurrence, movement, recharge and discharge

UNIT - IV

Water Surplus and water deficit - areas, over and under utilization of water resource, water balance, **Water conservation** - present, future perspective, planning and programme, **Water Harvesting** - Traditional and modern methods

Books Recommended:

1. **Bouwer, H.** : Ground Water Hydrology, McGraw Hill Book Co., New York, 1978
2. **Karant, K.r.** : Groundwater Assessment : Development and Management, Tata McGraw Hill New Delhi, 1987
3. **Rao, K.L.** : India's Water Wealth, Orient Longman, New Delhi, 1979
4. **Murthy, J.V.S.** : Watershed Management in India : Wiley Eastern Ltd., New Delhi , 1995
5. **Reddy, R.J.** : The Textbook of Hydrology, Laxmi Publicaiton, New Delhi,1999
6. **Charlu, T.G.K. and Dutt. D.K.** : Ground Water Development in India, Rural Electrification Corporation, New Delhi, 1982
7. **Singh, R.A. and Singh, S.R.** : Water Management Principles and Practices, Tara Publishers Varanasi
8. **Tideman, E.M.** : Watershed Management Guidelines for India Conditions, Omega, New Delhi
9. **Sain, S.K.** : The Flood Problem in India, Birla Institute of Sceintific Research, Economic Reserarch Divison, New Delhi
10. **Sokolar, A.A. and Chapman, T.B. (ed)** : Methods for Water Balance Computations : An International Guide for Research & Practice : The UNESCO Press, Paris, 1974
11. **Chorley, R.J.** : Introduction to Physical Hydrology, Methuen, London, 1967
12. **Jones, J.A.** : Global Hydrology : Processes, Resources and Water Management, London, 1997

Semester – IV

Paper - XIV : Geography of Uttarakhand (A Regional Analysis)

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Geo Political setting, Historical Outline, Geo Physical Setting, Geological structure, Geomorphic Characteristics, Processes and features and physiographic region Drainage – River system and basin, Characteristics and water volume, Climate, Natural Vegetation, Soil, Glaciers and Lakes

UNIT - II

Population, growth and distribution, density, age, sex structures , Literacy and Educaiton, Cultural Appraisal, rural out migration, rural settlement, Type, Patterns and urbanization, occupational structure Harsh Nature of Environment and its influence on Socio – Economic aspects of Life, Tribes

UNIT - III

Land use, Agriculture, Constraints of Agrarian Economy, Money order economy and Role of Women in Hill economy, Important crops, animal husbandary, forestry, Horticulture mixed farming system, poverty, Transport, Tourism and Pilgrimage, Important Natural Resources, Industries, Hydropower projects – Tehri Dam, Vishnuprayag and AHPP Srinagar

UNIT - IV

Environmental Constraints in the Framework of Man- Nature interaction, Disaster, Regional Disparities in Development, Hill Development planning, problems and limitation of Development, Movement of Environment conservation, Environment V/S Economic Development, Waste Land Expansion after the creation of Uttarakhand State, Contemporary issues.

Books Recommended:

1. **Lal, J.S. & Moddie** : The Himalaya Aspect of Change A.D. (ed)
2. **Bhatt, H.P. & Bhatt Sangeeta** : Environmental Dimensions of Rural Settlements in the Himalaya in 1993
3. **Bhatt, H.P. & Bhatt Sangeeta (1992)** : Environment – Yesterday, Today and Tomorrow, Galgotia Publication, New Delhi

4. **Bose, S.C.** : Land and People of the Himalaya

5. **Kayastha, S.** : The Himalayan Beas Basin
6. **Valdin, K.S. (ed)** : Kumaun – Land and People
7. **Singh, T.V. (ed)** : Mountain and Development
8. **Singh O.P. (ed)** : The Himalaya Nature, Man & Culture
9. **Joshi, S.C. and others** : Kumaun Himalaya
10. **Nitynnand & Kumar, K.** : The Holy Himalaya – Geographical Interpretation of Garhwal Himalaya
11. **Kharkwel, S.C.** : Uttarakhand – Physico – Culture Complex
12. **Mathani, D.D.** : Central Himalaya : Ecology, Environmental Resources and Development
13. **Rawat, M.S.S. (ed)** : Central Himalaya – Environment Development Vol. I & II

Paper - XV : Practical – IV (Surveying and Weather analysis)

Time : 3 Hours

Theory : 80 Marks

Internal Assessment: 20 Marks

The syllabi for Practical is divided into two sections: Section A and B

A is related to field work. Candidate will have to attempt two exercises of Surveying form section A of 02 Hours Duration and two exercises of Section B of 01 Hour duration

Section A : Field Work

1. **Plane Table Survey:** Two Point and three point problem. Triangulation and determination of heights and contouring with clinometers
2. **Prismatic Compass Survey:** Closes Traverse error adjustment by Bowditch method and trigonometry.
3. **Dumpy level survey** : Contouring and Profile drawing

Section B : Laboratory Work

1. GPS : Handling usages, GPS based data acquisition, GPS System and application
2. Altimeter (Hi – teach with precision) : Handling and use
3. Interpretation of Indian daily weather maps through the study of thermal and cloud conditions and pressure system, Weather forecasting method

Distribution of Marks :

Surveying (Two Exercises)	- 30
Lab Work (Two Exercise)	- 10
Survey Camp	20
Sessional Record (min)	- 10
Viva - Voce	- 10

Note :

1. In all 20 exercises form both the parts A and B shall constitute the sessional record covering all sub sections
2. Candidate shall attend (Compulsory) field training (Survey camp) of at least seven days duration in a suitable area handling different survey instruments. They shall prepare minimum 5 exercises (Survey camp) belonging to the original field survey.
3. Survey camp work will be evaluated at the time of the end semester Practical exam.

Paper – XVI : Elective: (Student can opt any one of the three papers given below)

Paper – XVI (a) : Agriculture Geography

Time : 3 Hours

Theory : 80 Marks

Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT – I

Nature, Scope, significance and development of Agricultural geogprahy, Origin and Dispersal of Agriculture – major agriculture hearths, Diffusion of Agriculture innovation, Recent trends in Agriculture

UNIT – II

Determinants of agriculture – Physical, economic, Political, Technological, Socio – cultural, Land reforms, cropping Patter, Cropping intensity, diversification and specialization, efficiency and Productivity, crop combination regions

UNIT – III

Theories of agriculture location: Von Thunen's Model and its modification – Sinclair's approach, concept of agriculture region, whittlesey's classification of agriculture regions, Agricultural typology Mix Cropping, Crop – rotation and eco farming

UNIT - IV

Agriculture in India: Land use and shifting cropping Pattern, New trends in India Agriculture - Green revolution, White revolution, Nutritional Index, Problems of India Agriculture, Agriculture Policy in India, Food Security.

Books Recommended:

1. **Symons, L.** : Agricultural Geography, G. Bells, London, 1967
2. **Grigg, D.** : An introduction to Agricultural Geography, Hutchinson Publication, London
3. **Gigg, D.B.** : The Agricultural System of the World, Cambridge University Press, New York, 1974
4. **Mannion, A.M.** : Agriculture and Environment Change, John Wile, London, 1995
5. **Sauer, Carl** : Agricultural Origin and Dispersals American Geographical Society, New York, 1952
6. **Brown, L.R.** : The Changing World Food Prospects : The Nineties and Beyond, World Institute, Washington DC, 1990
7. **Dyson, T.** : Population and Food - Global Trends and Future Prospects, Routledge, London, 1997
8. **Morgan, W.B.** : Agriculture in the Third World - A Spatial Analysis, West Press, 1978
9. **Singh, B.B.** : Krishi Bhoogol, Gyanoday Prakashan, Gorakhpur
10. **Kumar, Pramila evm Sharma, S.K.** : Krishi Bhoogol, Hindi Granth Academy, Bhopal
11. **Tiwari, R.C. and Singh, B.N.** : Krishi Bhoogol, Prayag Pustak Bhawan, Allahabad

Paper - XVI (b) : Cultural Geography

Time : 3 Hours

Theory : 80 Marks

Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Concept of Culture and Culture as an indicator of Regional identity. The Study of culture in Geography, Nature, Scope concept and significations of Culture Geography, Development of Cultural Geography, Cultural Landscape, Cultural Process, Cultural Diffusion

UNIT - II

Origin and dispersal of man, Brief cultural history of Man

Migration processes and cultural development - Prehistoric, Primitive agrarian, Industrial revolution, Role of Technological changes in Cultural Development, Cultural Hearths, Cultural Ecology

UNIT - III

Human Races – origin and dispersal and related theories, type and distribution, Major ethnic, Racial Groups and Linguistic groups

Resource and Culture – Resource extraction and conversion

Processes and elements of Cultural Transformation

Cultural Segregation and Assimilation, Cultural unity and Diversification

UNIT - IV

Cultural Realms – Monsoon Asian, Meso – African, Mediterranean, Western European, Anglo – American , Latin American

Cultural Regions - Indo – Aryan, Dravidian, Chinese, Arabian Islamic, Angolo – American Atlent Coastal, Brazilian, Maxican, English – European

Books Recommended:

1. **Spencer, J.&E. Thomsas W.I.** : Introducing cultural Geography
2. **Rostlund, F.** : Outline of Cultural Geography
3. **Wagner, P.J. & Mikesell, M.W. (eds)** : Reading Cultural Geography
4. **Sultar, C.I.** : The Cultural Landscape
5. **Frazier, D.E.** : Race and Cultural Contacts in the modern world
6. **Spher, D.F.** : Geography of Religions
7. **Carter, G.F.** : Man and the land a cultural Geography
8. **Dohra, F.E. & Sommers, L.M. (eds)** : Cultural Geography Selected Readings
9. **Coul, B.R.** : The Orign of Civilized Society
10. **Brood, J.M.** : Geography of Mankind
11. **Jain, J.K. & Vohra, D.M.** : Sanskrit Bhoogol (Hindi)
12. **Prasad, Gayatri** : Sanskritik Bhoogol (Hindi)

Paper – XVI (c) : Remote Sensing and GIS

Time : 3 Hours

Theory : 80 Marks

Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Definition, Process and stages of Remote Sensing, Energy Sources and radiation, EMR, Energy

Interaction with atmosphere and earth surface, Principle of Micro wave Remote Sensing

Types of R.S., Platforms, Satellites and sensor, Resolution, Digital Image and satellite imagery, elements of Visual image Interpretation, Digital image processing techniques.

UNIT - II

Definition, History Types, Classification and planning mission of A.P. : Basic Geometric Characteristics - Scale, height, overlap, mosaic, resolution, Stereoscopic coverage
Fundamental concept of Photogrammetric, Orientation, Relief Displacement, Stereoscopic, 3 D viewing, uses of A.P. in landform mapping and urban planning

UNIT - III

Definition, concept, scope and components of GIS, data and information, geo referencing and rectification, Data inputting methods and GPS

Data base, types of Data, Data models in GIS, Data integration, Geospatial Data analysis

UNIT - IV

Computer Cartography and mapping in Digital age, Internal GIS, Web GIS, DTM, Recent Trends of GIS, emerging branches of GIS Science.

Application of Remote sensing and GIS in watershed management, weather information, Disaster Forecast and Geo Information

Books Recommended:

1. **Sabine, F.F. : Remote Sensing - Principles & Interpretation**
2. **Lillesand, R.M. & : Remote Sensing & Image Interpretation Kiefer, R.W.**
3. **Chaunlyal, D.D. : Remote Sensing and G.I.S (Hindi)**
4. **Jensen, J.R. : Introductory Digital Image Processing - A Remote Sensing Perspective**
5. **Demer, M.N. : Fundamentals of Geographic Information System**
6. **Martin, D.S. : Geographic Information System : Socio - Economic Applications**
7. **Aronoff, S. : Principles of Geographical Information systems for Land Resource Assessment**
8. **Aronoff, S. : Geographic information System - A Management Perspective**
9. **Bonham Carter, G.F. : Geographic Information System for Geoscientists**
10. **Jones, C. : Geographical information System & Computer Cartography**
11. **Ayery, T.E. : Introduction to Aerial Photographs**
12. **Praff, W.K. : Digital Image Processing, John Wiley & Sons, New York, 1995**

Paper – XVII : Elective (Student can opt any one of the three papers given below)

Paper – XVII (a) : Bio Geography

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Biogeography : Nature, Scope, Significance, Approaches, History, Recent Development, Succession and Ecological adaptation, Climax concept and ecosystem balance and spatial Dimension in Biogeography

UNIT - II

Historical Evolution of Plants and Animals: Pattern and Causes of Plant and Animal Distribution, Factors influencing the distribution of life, Bio – Geographical regions and realm of the world: Biome and Biomass.

UNIT - III

Biodiversity and the source of novelty in life, Biodiversity: Concept and Significance, Biodiversity and Global Climate Change, Palaeo- Botanical and Palaeo- Climatological records of Environmental change of India, Adaptations of Plants and Animals to the Environment, Biogeography of Uttarakhand Himalaya

UNIT - IV

Bio- Geographical information/ Data, Collection retrieval and application, Conservation of Wildlife and forest, Agro forestry and Reforestry international and National efforts for conserving Biological Resources, Biosphere Reserves, Tropical Forest Action Plan

Books Recommended:

1. **Bradshaw, M.J.** : Earth and Living Planet, ELBS, London, 1979
2. **Cox, C.B. and Moore, P.D.** : Biogeography : An Ecological and Evolutionary Approach, 5th Edition Blackwell, 1993
3. **Hoyt, J.B.** : Man and the Earth, Prentice Hall, USA, 1992
4. **Huggett, R.J.** : Fundamentals of Biogeography, Rutledge, USA, 1998
5. **Bansereau, B.M.** : Biogeography – An Ecological Perspective, Ronald Press, New York, 1957
6. **Joy, T.** : Biogeography : A study of Plants in the Ecosphere, Oliver & Boyd, Edinburgh, 1977
7. **Mani, M.S. (ed)** : Biogeography of India, The Hague, 1975
8. **Martin, C.** : Plant Geography, Methuen, London, 1975
9. **Mathur, H.S.** : Essentials of Printers, Jaipur, 1998 Paper – XVII (b) : Oceanography

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Meaning, Objective, Scope and Significance of Oceanography, Submarine topography, Configuration of Pacific, Indian and Atlantic Ocean Floors, sea Floor Spreading

UNIT - II

Ocean Salinity, Temperature, Currents, Tides, Ocean Deposits and Coral Reefs

UNIT - III

Marine Resources, Mineral, Biotic and Energy and their conservation, Marine Pollution and Ocean dumping

UNIT - IV

Ocean Routes and World Economics, laws of the seas, Global Warming and Transgression of seas, Tsunamis and El Niño, Sea level change, Contemporary issues.

Books Recommended:

1. **Davis, R.J.A. : 1986 - Oceanography** -An Introduction of the Marine Environment Win.C. Brown, Iowa
2. **Griffiths, J.F. : 1976 - Applied Climatology**, Oxford Press, New York
3. **Huntington, E. and S.S. Visher : 1922 - Climate Change**, Yale University Press
4. **Hussain, T. and Tahir, M. : 2003 - Oceanography**, Jawahar, New Delhi
5. **Kings, C.A.M. : 1963 - An Introduction to Oceanography**, McGraw, New York
6. **Lamb, H.H. : 1972 - Climate - Present, Past and Future**, Methuen London
7. **Biddhartha, K. : 1999 - Oceanography – A Brief Introduction**, Kisalya Publication, New Delhi
8. **Singh, S. : 2002 - Physical Geography**, Prayag Publication, Allahabad
9. **Trewartha, G.T. : 1968 - An Introduction to Climate**, McGraw, New York
10. **Thurnman, H.V. : 1978 - Introduction to Oceanography**, Charles E. Merrill Publication, London
11. **Weyl, P.K. : 1970 - Oceanography** – An Introduction of the Marine Environment, John W. and Sons, London

Paper – XVII (c) : Geography of Tourism & Recreation

Time : 3 Hours

Theory : 80 Marks
Internal Assessment: 20 Marks

Note : The Paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All Questions carry equal marks.

UNIT - I

Tourism and Recreation – meaning and Definitions, Development of Geography of Tourism and Recreation, Approaches to the study and models of Tourism, Present Tourism Trends, Its relation with other branches of Geography

UNIT - II

Tourism Types : Cultural, Eco- tourism- coastal and adventure tourism, National and International tourism, Globalization and Tourism, Tourism as an industry structural components and characteristics, International tourism and Political Fallouts

UNIT - III

Development of Tourism in Himalayas: Potentials and Promotion of Tourism – Pilgrimage Tourism as a process of Development and Change in Hill region : Futuristic Tourism Himalayas. Impact of Tourism – Environmental, Economic and Socio- Cultural, Case Study of Mussorie and Nainital

UNIT - IV

Planning of Tourism – conflicting issues of Development, Concept of Green Tourism, Eco Tourism Sustainable tourism: Community participation: Role of Foreign capital and impact of Globalization on Tourism, Contemporary issues

Books Recommended:

1. **Hall, C.M. and Page, S.J.** : The Geography of Tourism and Recreation, Environment, Place and Space, Routledge, London, 1999
2. **Shaw, G. and Williams, A.M.** : Critical issues in Tourism : A Geographical Perspective Blackwell, Oxford, 1994
3. **Kaul, R.K.** : Dynamics of Tourism and Recreation, Inter India, New Delhi, 1985
4. **Pearce, D.** : Tourism Today – A Geographical Analysis, Longman Scientific and Technical, New York, 1987
5. **Bhatia, A.K.** : Tourism Development Principles and Practices, Sterling, Bangalore,
6. **Cris, Ryan** : Recreational Tourism, A Social Science Perspective, Routledge, London
7. **Hall, C.M. and Page, S.J.** : Tourism in South and South East Asia, issues and Cases, Butterworth,

Heinemann, Oxford, 2001

8. **Garg, N.K.** : Tourism and Economic Development, Avishkar, Jaipur, 1996
9. **Sinha, P.C.** : International Encyclopedia of Tourism Management, Vols. 1-12, Anmol, New Delhi
10. **Bhardwaj, D.S. and Chaudhary, M.** : Contemporary Issues in Tourism, Himalaya, Mumbai, 1997

Paper – XVIII : Dissertation

(The topic should be selected only from Uttarakhand Himalaya Region)

Time : 3 Hours

Theory : 80 Marks

Internal Assessment: 20 Marks

Note : Concern Teacher will allot relevant Topic to the student. The Topic should be selected only from Uttarakhand Himalayan Region. Topic is only given from the field of Geography. It can cover any branch of Geography.

Distribution of Marks :

Periodical Presentation (Internal Assessment) - 20 Marks

Dissertation - 60 Marks

Power Point / Viva Voce - 20 Marks

Objective :

1. The Paper is designed to acquaint the student with the importance of Field Work as one of The Methodologies in Geography and Especially in Research Work
2. The Student are to be sensitized about Field Work and Data/ information collection and writing of Report.

Field Based (Dissertation)

The Students should be sensitized about the methodology, synopsis preparers, Mapping exercise, data collection. 10 Minutes Power Point presentations on the Dissertation work are compulsory for the students. Students will also submit precise Dissertation Report along with maps, diagrams and at least 100 pages report. Supervisor will be allotted by HoD concern.

1. The Candidates are required to submit their Project Reports one week before the commencement of Examination to the concerned Head of the Department.
2. Assessment of Report will be done by a Board of Examiners, Consisting of external examiner and internal examiner.

– IV

Mahasweta Devi: Douloti the Bountiful

IV Semester

Paper - XIV (20th Century)

Detailed Study

– I

Samuel Beckett: Waiting for Godot

– II

T. S. Eliot: Murder in the Cathedral

- III R. K. Narayan: Malgudi Days

- IV Anita Desai: Cry the Peacock

Paper - XIII (b) (Literature and Gender) Electi

Non-Detailed Study

- I Mary Wollstonecraft: A Vindication of the Rights of wom

- II Virginia Woolf: A Room of One's Own

- III Judith Butler: Gender Trouble, Subjects of Sex / Gender /



Sri Dev Suman Uttarakhand University,
Badshahithaul
(Tehri Garhwal)

SYLLABUS

FOR B.A.

ECONOMICS

BASED ON

SEMESTER SYSTEM

WITH EFFECT FROM SESSION 2018-19

DEPARTMENT OF ECONOMICS

SRI DEV SUMAN

UTTARAKHAND

VISHVAVIDYALAYA

BADSHAHITHAUL

(TEHRI GARHWAL)

B.A. ECONOMICS SYLLABUS UNDER SEMESTER SYSTEM

**Course Structure for B.A. (ECONOMICS) under
Semester System to come into force from Academic Session 2018-19
Sri Dev Suman Uttarakhand Vishvavidyalaya, Badshahithaul (Tehri Garhwal)**

INTRODUCTION

STRUCTURE OF SYLLABUS

Economics is available as a subject with combination of other subjects at B.A.(TDC) . The entire TDC in Economics is spread over three years, each year consisting of two semesters. The candidates enrolled in B.A (Economics) Programme will have to pass six semester examinations comprising of a total of twelve (12) Core papers. Each paper is divided into four units. The course break-up for all the six semesters is as follows:

Semester-I: 2 (Two) Core Papers (Compulsory courses)

Semester-II: 2 (Two) Core Papers (Compulsory courses)

Semester-III: 2(Two) Core Papers (Compulsory courses)

Semester-IV: 2 (Two) Core Papers (Compulsory courses)

Semester-V: 2 (Two) Core Papers (Compulsory courses)

Semester-VI: 2(Two) Core Papers (Compulsory courses)

Structure of the Examination

Each semester will have two basis for evaluation of students.

1. End-term examination: These exams will be conducted at the end of every semester and will carry 80 marks.

2. Internal sessional assessment test: One internal sessional assessments test will be conducted by the department and will comprise of 20 marks. This internal sessional assessment test will be conducted before the end-term examination. The internal evaluation will be based on classroom attendance, participation in class-room seminars and written tests etc.

Note: Students will have to attain pass marks (40 per cent) in both end-term examination and internal sessional assessment separately.

B.A (Economics)
First year
Semester-I

S . N o .	Cour se N o .	Name of the Course	To tal M ar ks	Duratio n of the Exam inati on	Marks		
					End Semester Exam inati on	Intern al Asses sment	Tota l Mark s
1	UG/ECO(C)/10 1	Micro Economics-I	10 0	2 Hours	8 0	2 0	100
2	UG/ECO(C)/10 2	Indian Economy-I	100	2 Hours	8 0	2 0	100
Grand Total Marks			20 0				200

First year
Semester-II

S . N o .	Cour se N o .	Name of the Cour se	Total Mark s	Duratio n of the Exam inati on	Marks		
					End Semester Exam inati on	Intern al Asses sment	Tota l Mark s
1	UG/ECO(C)/20 1	Mic ro Economics -II	100	2 Hours	8 0	2 0	100

2	UG/ECO(C)/20	Indian	100	2 Hours	8	2	100
.	2	Economy-II			0	0	
Grand Total Marks			200				200

**Second year
Semester-III**

S . N o .	Cour se N o .	Name of the Cour se	Total Mark s	Duratio n of the Examin ati on	Marks		
					End Semester Examinatio n	Intern al Assess ment	Tota l Mark s
1 .	UG/ECO(C)/30 1	Macro Economics - I	100	2 Hours	8 0	2 0	100
2 .	UG/ECO(C)/30 2	Money and Banking	100	2 Hours	8 0	2 0	100
Grand Total Marks			200				200

Second year

S . N o .	Cour se N o .	Name of the Cour se	Tota l Mark s	Duratio n of the Examin ati on	Marks		
					End Semester Examinatio n	Intern al Assess ment	Tota l Mark s
1 .	UG/ECO(C)/40 1	Macro Economics - II	10 0	2 Hours	8 0	2 0	100
2 .	UG/ECO(C)/40 2	Public Finance	10 0	2 Hours	8 0	2 0	100
Grand Total Marks			200				200

Semester-IV

**Third year
Semester-V**

S . N o .	Cour se N o .	Name of the Cour se	Total Mark s	Duratio n of the Examin ati on	Marks		
					End Semester Examinatio n	Intern al Assess ment	Tota l Mark s
1	UG/ECO(C)/50 1	Statistical Methods in Economic s-I	100	2 Hours	8 0	2 0	100
2	UG/ECO(C)/50 2	Economics of Developmen t and Planning-I	100	2 Hours Ec on Pl an	8 0 omic Developme ning – II	2 0 nt and	100
Grand Total Marks			200				200

Third year

S . N o .	Cour se N o .	Name of the Cour se	Tota l Mark s	Duratio n of the Examin ati on	Marks		
					End Semester Examinatio n	Intern al Assess ment	Tota l Mark s
1	UG/ECO(C)/60 1	Statistical Methods in Economics-II	10 0	2 Hours	8 0	2 0	100
2	UG/ECO(C)/60 2	Economics of Developme nt and Planning -II	10 0	2 Hours	8 0	2 0	100

Grand Total Marks	200				200
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Semester-VI

B.A. (ECONOMICS)

FIRST Year

Semester-I

MICRO ECONOMICS – I

Course Name: Micro Economics-I

Course No: UG/ECO (C) 101

Maximum Marks: 100

(a)Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

SYLLABUS

Unit 1:

Definitions of Economics - Wealth, Welfare, Scarcity and Modern Definitions, Micro and Macro Economics; Positive and Normative Economics; Static and Dynamic Economics, Deductive and Inductive Methods, Cardinal Utility Analysis: Total and Marginal Utility; Law of Diminishing Marginal Utility Law of Equi-Marginal Utility; Consumer's Equilibrium,

Unit 2:

Ordinal Utility Analysis: Indifference Curves; Consumer's Equilibrium, Price Effect, Substitution Effect [Hicks and Slutsky]; Income Effect, Consumer's Surplus: Revealed Preference Theory, Hicks' Revision of Demand Theory, Law of Demand; Factors Influencing Demand, Elasticity of Demand; Price; Income and Cross Elasticities and their Measurement , Elasticity of Supply.

Unit 3:

Production Function: Short Run and Long Run, Cobb-Douglas and CES Production Function, Law of Variable Proportions; Returns to Scale: Economies of Scale, Isoquant Analysis; Iso-Cost Line; Producer's Equilibrium.

Unit 4:

Concept of Cost: Accounting and Economic Cost, Private Cost and Social Cost, Opportunity Cost, Fixed and Variable Cost, Average, Marginal and Total Cost, Short Run and Long Run Cost Curves, Concept of Revenue: Average, Marginal and Total Revenue, Revenue Curves under Different Market Conditions.

SUGGESTED READINGS: (LATEST EDITIONS)

Bilas, A.-Micro Economic Theory, International Student Edition, Mc.Graw Hill, New delhi.

H.L.Ahuja-Advanced Economic Theory, S.Chand, New Delhi.

M.L.Seth- Micro Economics, Laxmi Narayana Agarwal, Agra.

N.Gregory Mankiw-"Principles of Economics" South-Western College Publishing, Nashville, TN 37214.

P.A.Samuelson & W.D. Nordhaus-Economics, Tata Mc.Graw Hill, New Delhi.

R.G. Lipsey and K.A.Chrystal - Economics, Oxford University Press, Oxford.

Stonier and Hague:- A Text Book of Economic Theory, Longman Higher Education, Harlow.

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INDIAN ECONOMY – I

Course Name: Indian Economy – I

Course No: UG/ECO (C) 102

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

SYLLABUS

Unit 1:

Basic Features of Indian Economy, Natural Resources: Land, Water and Forest Resources, Broad Demographic Features: Population Size, Structure [Sex and Age]; Characteristics; Change in Population; Rural-Urban Migration; Occupational Distribution; Problem of Over-Population; Population Policy.

Unit 2:

Indian Agriculture: Nature, Role and Importance, Trend in Agriculture Production and Productivity, Agriculture Holdings and Land Reforms, Agriculture Mechanization: Marketing of Agriculture Produce, Agricultural Price Policy, Rural Indebtedness, Co-Operative Movement in India, Public Distribution System, Food Security.

Unit 3:

Industrial Growth in India-Structure, Growth and Problems; Public and Private Sector, Cottage and Small Scale Industries, Industrial Finance, Industrial Sickness in India, Industrial Labour, Industrial Policy of India, Large Scale Industries: Present Position and Problems of Sugar, Iron and Steel, Jute and Cotton Textile Industries.

Unit 4:

Role of Foreign Trade in the Economic Development, India's Foreign Trade; Trends in Value, Composition and Direction, Position of Balance of Payments of India, Export Promotion and Import Substitution in India, Export and Import Policy of India, Role of MNC in Economic Development of India.

SUGGESTED READINGS: (LATEST EDITIONS)

Agrawal, A.N. : Indian Economy, Wishwa Prakashan, New age International (P) Limited, New Delhi.

Alak Ghosh – Indian Economy

Benjamin Higgins - Economic Development

Dhingra, I.C - Indian Economy, Sultan Chand, New Delhi.

G.M.Meier - Leading Issues in Economic Development, Oxford University Press, New York.

G.Omkarnath - Economics - A Primer for India - Orient Blackswan, New Delhi.

Government of India Annual – Economic Survey(Latest)

M.P.Todaro - Economic Development, Longman, London.

Misra, S. K. & V. K.Puri : Indian Economy, Himalaya Publishing House, Mumbai.

Reserve Bank of India - Hand book of Statistics on Indian Economy (Latest).

Gaurav Dutt & Ashawani Kumar - Indian Economy, S.Chand & Co. New Delhi.

S.K.Misra & V,K,Puri - Indian Economy, Himalaya Publishing House, Mumbai.

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B.A. (ECONOMICS)

FIRST Year

Semester-II

MICRO ECONOMICS - II

Course Name: Micro Economics - II

Course No: UG/ECO(C)/201

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

SYLLABUS

Unit 1:

Forms of Market: Perfect and Imperfect Markets: Salient Features, Price and Output Determination of Firm and Industry [Short Run and Long Run] under Perfect Competition, Monopoly: Price and Output Determination [Short Run and Long Run], Price Discrimination and Dumping, Regulation and Control of Monopoly.

Unit 2:

Monopolistic Competition: Price and Output Determination, Selling Costs, Oligopoly: Price and Output Determination, Kinked demand curve, Non-collusive (Cournot, Sweezy), collusive (Cartels, price leadership); Duopoly: Price and Output Determination.

Unit 3:

Theory of Distribution: Marginal Productivity Theory of Distribution, Rent: Ricardian and Modern Theory, Wage : Marginal Productivity and Modern Theories, Collective Bargaining, Interest: Neo-Classical, Liquidity Preference Theories, IS-LM Model Profit: Innovation, Risk and Uncertainty Theories.

Unit 4:

Welfare Economics: Concept of Social Welfare, Pigouvian Welfare Economics, Pareto Optimally Criterion and Efficiency Conditions, Kaldor-Hicks Criterion, Compensation principle, Bergson-Samuelson Social welfare function.

RECOMMENDED READING: (LATEST EDITIONS) :

N.Gregory Mankiw- Principles of Economics, Thompson press, New York.
N.Gregory Mankiw-"Principles of Economics" South-Western College Publishing,
Nashville, TN 37214.

P.A.Samuelson & W.D. Nordhaus-Economics, Tata Mc.Graw Hill,New Delhi.

P.A.Samuelson & W.D. Nordhaus-Economics, Tata Mc.Graw Hill,New Delhi.

R.G. Lipsey and K.A.Chrystal - Economics, Oxford University Press,Oxford.

Stonier and Hague:- A Text Book of Economic Theory, Longman Higher
Education,Harlow.

H.L.Ahuja-Advanced Economic Theory,S.Chand,New Delhi.

M.L.Seth-"Micro Economics", Laxmi Narayana Agarwal,Agra.

Bilas, A.-Micro Economic Theory, International Student Edition, Mc.Graw
Hill,New Delhi.

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INDIAN ECONOMY-II

Course Name: Indian Economy - II

Course No:UG/ECO(C)/202

Maximum Marks: 100

(a)Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit 1 :

Problem of Unemployment and under-employment in India, Poverty in India, Major Programmes for Poverty Alleviation and Employment, Employment Trends in Organized and Unorganized Sector, National Income: Trends and Structure of National Income, Inequality in the Distribution of Income in India, Labour Welfare and Social Security in India.

Unit 2 :

Role of Infrastructure in Economic Development, Development of Transport and Communications, Private Sector Participation, Development of Irrigation, Irrigation Policy, Energy Crisis In India, Energy Policy, Social Infrastructure, Issues and Trends in Health and Education, National Health Policy, Education Policy of India.

Unit-3

Concept and Importance of Human Development, Human Development Index (HDI), Millennium /Sustainable Development Goals and Human Development, Human Development in Indian States, Measurement of Human Development, Human Development Indicators, Gender Discrimination, Woman's Empowerment.

Unit-4

New Economic Reforms: Liberalization, Privatization, Globalization in India, An Appraisal of Economic Reforms In India; Competitiveness of Indian Trade and Industry: Special Economic Zones, Disinvestment In India, W.T.O. and Its Impact on the Different Sectors of the Economy; Foreign Direct Investment.

SUGGESTED READINGS: (LATEST EDITIONS) :

Dhingra, I.C - "Indian Economy", Sultan Chand, New Delhi.

Dutt, R. (ed.) : Second Generation Economic Reforms in India, S. Chand, New Delhi.

G.M.Meier - "Leading Issues in Economic Development", Oxford University Press, New York.

M.P.Todaro - "Economic Development", Longman, London.

Misra, S. K. & V. K.Puri : Indian Economy", Himalaya Publishing House, Mumbai.

Reserve Bank of India - Hand book of Statistics on Indian Economy (Latest).

G.Omkarnath - Economics - A Primer for India - Orient Blackswan, New Delhi.

**Agrawal, A.N. : Indian Economy, Wishwa Prakashan, New age International (P) Limited, New Delhi. **

Ruddar Datt & K. M..P. Sundharam: Indian Economy, S. Chand, New Delhi.

Ruddar Dutt and K.P.M. Sundaram - "Indian Economy", S.Chand & Co, New Delhi.

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B.A. (ECONOMICS)

Second Year

Semester-III

MACRO ECONOMICS -I

Course Name: Macro Economics -I

Course No:UG/ECO(C)/301

Maximum Marks: 100

(a)Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Introduction: Nature and Scope of Macro Economics, Differences between Micro and Macro Economics and Importance of Macro Economics, Aggregation and Macroeconomics , Goals and types of Macro Economics, Supply and Demand in Macro Economics, Macro Economic Variables, Stocks and Flows.

Unit-2

Consumption Function: Keynes psychological law of consumption; short-run and long-run consumption function; Empirical evidence on consumption function; income-consumption relationship-absolute income, relative income, life cycle and permanent income hypotheses.

Unit-3:

Investment function: Types of Investment, Determination of Level of Investment, Long and Short run shifts in investment functions, Marginal Efficiency of Capital (MEC), Theories of Investment: Classical and Keynesian Theory of Investment (Marginal Efficiency of Investment), Saving-Investment Equality.

Unit-4:

Investment Multiplier: Concept, Relationship between Multiplier, MPC and MPS, Comparative, Static and Dynamic Process, Working and limitations of

Multiplier in UDCs, Employment Multiplier, Principle of Accelerator, Super Multiplier.

SUGGESTED READINGS: (LATEST EDITIONS) :

Ackley, G, "Macroeconomics: Theory and Policy", Macmillan, New York.

Branson, W. A., "Macroeconomic Theory and Policy", Harper & Row, New York.

Dillard, D - "The Economics of John Maynard Keynes", Crosby Lockwood & Sons.

K.P.M. Sundaram - "Money, banking & International Trade", Sultan Chand, New Delhi.

Lipsey R.G. and K.A. Chrystal "Principles of Economics", Oxford University Press, New York.

M.L.Seth-"Macro Economics", Lakshmi Narayana Agarwal, Agra. Mithani, D.M. : Macro Economics, Himalaya Publishing House, Mumbai.

Mankiw Mankiw N. Gregory, "Principles of Economics", Thomson, Indian Reprint.

Paul Samuelson and Nordhaus, "Economics" Tata Hill Publishing Company, New Delhi.

R.Dornbush, S.Fisher and R.Startz - "Macro Economics", Tata Hill Publishing Company, New Delhi.

Shapiro, E., "Macroeconomic Analysis" Galgotia Publication, New Delhi.

Stiglitz J. E. and Carl E. Walsh, Principles of Macroeconomics, W.W. Norton & Company, New York.

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MONEY AND BANKING

Course Name: Money and Banking

Course No:UG/ECO(C)/302

Maximum Marks: 100

(a)Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit 1:

Money: Meaning, Functions, Classification and Significance, Role of Money in Capitalistic, Socialistic and Mixed Economies, Meaning and types of Monetary Standards, Gold Standard, Bi-Metalism, Paper Standard and Principles of Note-Issue, Grasham' Law

Unit 2:

Quantity Theory of Money: Cash Transactions Approach and Cash Balance Approach, Real Balance Approach, Keynesian Theory of Money and Prices, Milton Friedman Approach, Inflation: Definition, Types, Causes and Effects; Measures to Control Inflation, Inflationary Gap, Phillips Curve and Rational Expectations, Deflation.

Unit 3:

Meaning, Types and Functions of Commercial Banks, Process of Credit Creation and Credit Creation Multiplier, Major Developments in Commercial Banking in India since Nationalization and During Post Economic Reforms, Money and Capital Markets in India, Recent Financial Sector Reforms in India.

Unit 4:

Central Bank: Objectives, Functions and Limitations with Special Reference to RBI, Supply of Money: Concept, Components and Aggregates; Money Multiplier, Quantitative and Qualitative Methods of Credit Control, Monetary Policy of India.

SUGGESTED READINGS: (LATEST EDITIONS) :

Crowther, G. – An Outline of Money

D.M. Mithani: Money, Banking and Public Finance, Himalaya Publishing House, Mumbai.

Dillard, D - The Economics of John Maynard Keynes, Crosby Lockwood & Sons.

Halm, G. N. – Monetary Theory

K.M.P. Sundaram, : Money, Banking and International Trade, Sultan Chand, New Delhi.

Kurihara, K. K. – Monetary Theory

M.C. Vaish. – Monetary Theory, Vikas Publishing House Pvt Ltd; New Delhi.

M.L.Seth– Monetary Economics, Lakshmi Narayan Agrawal, Agra.

M.R. Baye, D.W. Jansen (1996), *Money Banking and Financial Markets*, AITBS, (Indian Edition)

Sethi, T. T., Money, Banking & International Trade, S.Chand, New Delhi.

Suraj.B.Gupta: Monetary Economics - Institutions, Theory & Policy; S Chand publications, New Delhi

T.N.Hajela-Money & Banking, Ane Books Pvt Ltd, New Delhi.

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B.A.
(ECONOMICS)
Second Year
Semester-IV

MACRO ECONOMICS -II

Course Name: Macro Economics -II

Course No: UG/ECO (C) 401

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1:

National Income: Concepts, Definitions and Limitations of National Income, Circular flow of income in Two, Three and Four Sector Economies, Methods of Measuring National Income, Different forms of national income accounting: Social accounting, flow of funds accounting and balance of payments accounting.

Unit-2

Determination of Income and Employment: Classical Theory of Employment, Say's Law of Market and its implications, Keynesian objections to Classical Theory, Keynesian Theory of Income and Employment, Criticism of Keynes's Theory, Keynes's Theory and Under-Developed Countries.

Unit-3

Trade cycles: Meaning, Types, Phases and Theories of Trade Cycles Hawtrey's Monetary Theory of Trade Cycle, Hayek's Over-Investment Theory of Trade Cycle, Keynesian Views on Trade Cycle. Hicks and Samuelson theory of Trade cycles, Control of Trade Cycles.

Unit-4 :

Macro-Economic Policies: Monetary and Fiscal Policies (Objectives, Instruments, Limitations), Brief history and Schools of Macro Economics, Keynesian, Classical, New Keynesian and New Classical.

SUGGESTED READINGS: (LATEST EDITIONS) :

Ackley, G. Macroeconomics: Theory and Policy, Macmillan, New York.
Branson, W. A., "Macroeconomic Theory and Policy", Harper & Row, New York.
Central Statistical Organisations - National Accounts Statistics.
Dillard, D - The Economics of John Maynard Keynes, Crosby Lockwood & Sons.
Lipsey R.G. and K.A. Chrystal, Principles of Economics, Oxford University Press Oxford.
M.L.Seth-Macro Economics, Lakshmi Narayana Agarwal, 2015.
Mankiw N. Gregory, Principles of Economics, Thomson, Indian Reprint.
Paul Samuelson and Nordhaus, Economics, Tata Hill Publishing Company, New Delhi.
R.Dornbush, s.Fisher and R.Startz - ,Macro Economics, Tata Mc.Graw Hill, New Delhi.
Shapiro, E, Macroeconomic Analysis, Galgotia Publication, New Delhi.
Stiglitz J. E. and Carl E. Walsh, Principles of Macroeconomics, W.W. Norton & Company, New York.
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PUBLIC FINANCE

Course Name: Public Finance

Course No: UG/ECO (C) 402

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit 1:

Meaning, Definition, Scope and importance of Public Finance, , Role of Public Finance in Developing Countries, Distinction between Private and Public Finance, Fiscal Functions of the Government, Public Goods and Private Goods, Demand and Supply of Public Goods, Principle of Maximum Social Advantage.

Unit 2:

Meaning, Classification and Principle of Public Expenditure, Effects of Public Expenditure on Production and Distribution, Trends in Public Expenditure and Causes of Growth of Public Expenditure in India, Wagner's Law - Peacock - Wiseman Hypothesis.

Unit 3:

Sources of Public Revenue, Taxation: Meaning and Classification of Taxes, Principles of Taxation, , Impact and Incidence of Taxes, Taxable Capacity, Characteristics of a good Tax System, Effects of Taxation on production and distribution, Concept of VAT & GST, Canons of taxation.

Unit 4:

Public Debt: Meaning, Types, Sources and Need, Effects and Burden of Public Debt, Methods of Debt Redemption, Budget; Principles and Kinds; Budget Procedure and Performance, Budgeting in India, Centre-State Financial Relations in India, Deficit Financing; Fiscal Policy.

SUGGESTED READINGS: (LATEST EDITIONS) :

B.P.Tyagi - Public Finance, Jai Prakash Nath, Meerut.

H. Dalton – Public Finance

H.L .Bhatia - Public Finance,Vikas Publishing House,New Delhi. Mithani,D.M.:

Modern Public Finance, Himalaya Publishing House, Mumbai. Reserve Bank of India - Hand book of Statistics on Indian Economy (Latest). S.K.Misra &

V,K,Puri - Indian Economy, Himalaya Publishing House, Mumbai. MKW- Vh-

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B.A. (ECONOMICS)

Third Year

Semester-V

STATISTICAL METHODS IN ECONOMICS-I

Course Name: Statistical Methods in Economics-I

Course No:UG/ ECO (C) 501

Maximum Marks: 100

(a)Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

SYLLABUS

Unit 1

Statistics: Meaning, Definitions, Scope, Importance and Limitations of Statistics; Role of Statistics in Economic Analysis; Collection of Data: Primary and Secondary, Census and Sampling Methods of Data Collection.

Unit 2:

Classification and Tabulation of Data, Diagrammatic Presentation (One and Two-dimensional diagrams) and Graphical Representation (Histogram)of Data, Measures of Central Tendency: Meaning and Types of Average, Arithmetic Mean, Median, Mode, Geometric Mean, Harmonic Mean, Quartiles.

Unit 3:

Dispersion: Range, Quartile Deviation, Mean Deviation, Standard Deviation, Lorenz Curve; Co-efficient of Variation; Co efficient of Skewness: Karl Pearson's and Bowley's Methods;

Unit 4:

Set Theory: Concepts and Set Operations, Variables and Functions; Equations and Systems of Equations, Elements of Coordinate Geometry: Straight Line, Homogeneous Functions, Maxima and Minima. Elementary Integral Calculus. Applications of Integral Calculus In Economics.

SUGGESTED READINGS: (LATEST EDITIONS) :

A. Mizrahi and M. Sallivan- Mathematics for Business and Social Sciences- Applied Approach. John Wiley,New Delhi.

A.C Chiang- Fundamental Methods of Mathematical Economics, Mc Graw Hill, New Delhi.

D. N. Elhance – Fundamentals of Statistics, Kitab Mahal, New Delhi.

E. Dowling- Mathematical Economics, Schaum's Outline Series.

K. Sydsater & P.J Hammond- Mathematics for Economic Analysis, Pearson Education, Delhi.

Mehta, B.C. & G.M.K. Madnani : Elementary Mathematics in Economics, Lakshmi Narayan Agarwal, Agra.

S.P. Gupta & V.K Kapoor- Fundamentals of Mathematical Statistics, S.Chand & Co. New Delhi.

Stephen Bernstein & Ruth Bernstein- Theory & Problems of Elements of Statistics, Schaum's Outline Series, Tata Mc Graw Hill, New Delhi.

Yamane Taro- Mathematics for Economics, Prentice Hall of India, New Delhi.

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ECONOMICS OF DEVELOPMENT AND PLANNING-I

Course Name: Economics of Development and Planning-I

Course No: UG/ECO (C) 502

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit 1:

Concept and Definitions of Economic Growth and Economic Development- Differences between Economic Growth and Economic Development, Characteristics of Economic Development, Factors Affecting Economic Growth, Characteristics of Under Developed countries, Measuring Economic Development: Per Capita Income, Human Development Index, and Physical Quality of Life Index;

Unit 2:

Theories of Development: Karl Marx Theory, Schumpeter's Theory, Keynes Theory of Economic Development, Restow's Theory of Stages of Economic Growth. Rosentein Rodan's Big Push Theory, Harvey Leibenstein's Critical Minimum Effort Theory, Nurkse Theory of Economic Development.

Unit 3:

Role of Monetary, Fiscal and Price Policies in Economic Development, Foreign Trade and Economic Development. External Resources: Foreign capital and MNCs in India, Foreign Trade as an Engine of Economic Growth and Welfare Implications.

Unit 4:

Concepts, Meaning and Importance of Regional Development; indicators of regional development, Problems of Regional Development; Regional Disparities; Concepts and Indicators; Causes of Economic Backwardness and Regional Imbalances;

SUGGESTED READINGS: (LATEST EDITIONS) :

Adelman, I, Theories of Economics Growth and Development,

Barro, R. and X. Sala-i-Martin, Economics Growth, McGraw Hill, New York.

Chakravarti, S. Alternative Approaches to the Theory of Economic Growth, Oxford University Press, New Delhi.

Development, Oxford University Press, New Delhi.

Dhar, T.N. and S.P. Gupta: Uttaranchal: A Study.

Ghatak, S. An Introduction to Development Economics, Allen and

Higgins, B. Economic Development, W.W. Norton, New York.

Hoover, E.M.: An Introduction to Regional Economics, West University, West Virginia.

Kindleberger, C. P. Economics Development, McGraw Hill, New York.

Lekhi, R.N. 'Economics of Development and Planning',

M.L. Jhingan: Economics of Development & Planning, Vrinda Publications, New Delhi.

Mishra S.K. and V.K. Puri 'Economics Development and Planning, Himalaya Publishing House, Mumbai.

Myer and Taneja 'Economics Development and Planning, Kalyani Publishers, Mumbai.

Richardson, H.W.: Regional Economics, Weidenfeld and Nicolson, London.

Seth, M.L.: Economic Planning: Theory and Practice, Lakshmi Narayan Agrawal, Agra.

Stanford University Press, Stanford.

Thirlwall, A.P, Growth and Development, Macmillan, U.K.

Todaro, M.P. and S.C. Smith, Economics of Development, Unwin, London.

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B.A. (ECONOMICS)

Third Year

Semester-VI

STATISTICAL METHODS IN ECONOMICS-II

Course Name: Statistical Methods in Economics-II

Course No:UG/ ECO (C) 601

Maximum Marks: 100

(a)Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit 1:

Correlation; Coefficient of Correlation, Karl Pearson and Rank Correlations, Regression Analysis: Regression Coefficients, Regression Lines and Equations, Fitting of Lines of Regression by the Least Squares Method.

Unit 2:

Time Series Analysis: Concept; Components; Least Square Method of Determination of Trend, Index Numbers: Concept; price relative; quantity relative; weighted index number, Methods of Construction of Index Numbers: Laspeyre, Paasche and Fisher, Tests for Adequacy of Index Number.

Unit 3:

Association of Attributes: Yule's Coefficient of Association, Interpolation and Extrapolation: Binomial, Newton's and Lagrange Methods.

Unit 4:

Matrices and Determinants (not more than 3 column, 3 row case), Definition and order of a Matrix and Determinant, Various Types of Matrices, Matrix Operations, Determinants, Inverse of a Matrix, Cramer's Rule.

SUGGESTED READINGS: (LATEST EDITIONS) :

A. Mizrahi and M. Sallivan- Mathematics for Business and Social Sciences- Applied Approach. John Wiley,New Delhi.

A.C Chiang- Fundamental Methods of Mathematical Economics, Mc Graw Hill,New Delhi.

D. N. Elhance – Fundamentals of Statistics,Kitab Mahal,New Delhi.

E.Dowling-Mathematical Economics, Schaum's Outline Series.

K. Sydsater & P.J Hammond- Mathematics for Economic Analysis, Pearson Education, Delhi.

Mehta, B.C. & G.M.K.Madnani : Elementary Mathematics in Economics, Lakshmi Narayan Agarwal, Agra.

S.P. Gupta & V.K Kapoor- Fundamentals of Mathematical Statistics, S.Chand & Co. New Delhi.

Stephen Bernstein & Ruth Bernstein- Theory & Problems of Elements of Statistics, Schaum's Outline Series, Tata Mc Graw Hill, New Delhi.

Yamane Taro- Mathematics for Economics, Prentice Hall of India, New Delhi.

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ECONOMICS OF DEVELOPMENT AND PLANNING- II

Course Name: Economics of Development & Planning-II

Course No: UG/ECO (E) 602

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit 1:

Meaning, Need and Objectives of Economic Planning, Types of Economic Planning; Democratic, Decentralized and Indicative Planning; Strategies and Policies for a Successful Planning, Requisites for successful planning, Planning in third world countries.

Unit 2:

Mobilization of Resources, People's Participation in Planning. Techniques of Planning –Labour Intensive vs. Capital Intensive Technology, Investment Criteria, Cost-Benefit Analysis, Capital-Output Ratio, Input-Output Analysis.

Unit 3:

Objectives, Strategy and Evaluation of Indian Planning., Achievements and Failures, Planning Machinery at the Centre, State and Local levels - Problems in Plan Implementation, Niti Aayog, Mobilization of Resources in Indian Five-Year Plans, Detailed Study of Last Two Five Year Plans.

Unit 4:

Uttarakhand Economy: Geographical Features, Natural Resources, Land and Irrigation, Forest Resources; Energy Resources; Agriculture, Horticulture; Demographic Profile, Employment and Unemployment, Poverty, Migration, Women in the Rural Economy; Industrial Development; Tourism; Prospects and Policies for Development of the Economy of Uttarakhand

SUGGESTED READINGS: (LATEST EDITIONS) :

Adelman, I, Theories of Economics Growth and Development,

Barro, R. and X. Sala-i-Martin, Economics Growth, McGraw Hill, New York.

Chakravarti, S. Alternative Approaches to the Theory of Economic Growth, Oxford University Press, New Delhi.

Development, Oxford University Press, New Delhi.

Dhar, T.N. and S.P. Gupta: Uttaranchal: A Study.

Ghatak, S. An Introduction to Development Economics, Allen and

Higgins, B. Economic Development, W.W. Norton, New York.

Hoover, E.M.: An Introduction to Regional Economics, West University, West Virginia.

Kindleberger, C. P. Economics Development, McGraw Hill, New York.

Lekhi, R.N. 'Economics of Development and Planning',

M.L. Jhingan: Economics of Development & Planning, Vrinda Publications, New Delhi.

Mishra S.K. and V.K. Puri 'Economics Development and Planning, Himalaya Publishing House, Mumbai.

Myer and Taneja 'Economics Development and Planning, Kalyani Publishers, Mumbai.

Richardson, H.W.: Regional Economics, Weidenfeld and Nicolson, London.

Seth, M.L.: Economic Planning: Theory and Practice, Lakshmi Narayan Agrawal, Agra.

Stanford University Press, Stanford.

Thirlwall, A.P, Growth and Development, Macmillan, U.K.

Todaro, M.P. and S.C. Smith, Economics of Development, Unwin, London.

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SYLLABUS

FOR

M.A.

ECONOMICS

BASED ON

SEMESTER SYSTEM

WITH EFFECT FROM SESSION 2018-19

DEPARTMENT OF ECONOMICS

SRI DEV SUMAN UTTARAKHAND

VISHWAVIDYALAYA

BADSHAHITHAUL

(TEHRI GARHWAL)

**Course Structure for M.A. (ECONOMICS) under
Semester System to come into force from Academic Session 2018-19
M.A. ECONOMICS
(SEMESTER-WISE)
Sri Dev Suman Uttarakhand Vishvavidyalaya, Badshahithaul (Tehri Garhwal)
M.A. ECONOMICS
INTRODUCTION
(SEMESTER STRUCTURE)
STRUCTURE OF SYLLABUS**

The Master of Arts (M.A) in Economics is a two year full-time programme. The course is organized over two years, each year consisting of two semesters. The candidates enrolled in M.A (Economics) Programme will have to pass four semester examinations comprising of Core and Elective papers. The entire P.G. Syllabus of Economics is spread over in four semesters consisting of 16 papers in total out of which 14 papers are assigned to the Core Courses (compulsory courses) and the remaining 02 papers are elective (optional) courses. First and second semester have each four core courses which are compulsory. Third and Fourth semester have each three core courses which are compulsory and one elective course from available options. The second semester will have an additional evaluation in the form of Viva-voce. The fourth semester will also have an additional evaluation in the form of either dissertation or Viva-voce. Viva-Voce will be based on student's knowledge acquired during the entire course. The candidates have to cover a total of 16 papers in core and elective courses and 01 viva-voce in second semester and 01 dissertations or Viva-Voce in fourth semester to qualify for a two years master's degree. The course break-up for all the four semesters is as follows:

Semester-I: 4 (Four) Core (Compulsory courses)

Semester-II: 4 (Four) Core (Compulsory courses)

&

Viva-Voce

Semester-III: 3 (Three) Core (Compulsory courses)

&

1 (one) Elective* (Optional course)

*The candidates will have to choose one elective course from available options during third semester.

Semester-IV: 3 (Three) Core (Compulsory courses)

&

1 (one) Elective* (Optional course)

*The candidates will have to choose one elective course from available options during fourth semester.

&

Dissertation/Viva-Voce (Any One)

Structure of the Examination

Apart from dissertation* all the other courses in each semester will have two basis for evaluation of students.

1. End-term examination: These exams will be conducted at the end of every semester and will carry 80 marks.

2. Internal sessional assessment test: One internal sessional assessments test will be conducted by the department and will comprise of 20 marks. This internal sessional assessment test will be conducted before the end-term examination. The internal evaluation will be based on classroom attendance, participation in class-room seminars and written tests etc.

Note:. Students will have to attain pass marks (45 per cent) in both end-term examination and internal sessional assessment separately.

***Evaluation method in Dissertation:** Performance of student in Dissertation will be evaluated on the following three tier basis:

(a) Dissertation 70 Marks

(b) Periodical Presentation (One) 10 Marks

(c) Viva Voce 20 Marks

Total: 100 Marks

**M.A (Economics)
First year
Semester-I**

S. No.	Course No.	Name of the Course	Total Marks	Duration of the Examination	Marks		
					End Semester Examination	Internal Assessment	Total Marks
1.	PG/ECO(C)/101	Micro Economics-I	100	2 Hours	80	20	100
2.	PG/ECO(C)/102	International Economics	100	2 Hours	80	20	100
3.	PG/ECO(C)/103	Quantitative Methods and Statistical techniques	100	2 Hours	80	20	100
4.	PG/ECO(C)/104	Uttarakhand Economy	100	2 Hours	80	20	100
Total			400				400

**First year
Semester-II**

S. No.	Course No.	Name of the Course	Total Marks	Duration of the Examination	Marks			
					End Semester Examination	Internal Assessment	Total Marks	
1.	PG/ECO(C)/201	Micro Economics-II	100	2 Hours	80	20	100	
2.	PG/ECO(C)/202	Macro Economics	100	2 Hours	80	20	100	
3.	PG/ECO(C)/203	Economics of Growth and Development	100	2 Hours	80	20	100	
4.	PG/ECO(C)/204	Indian Economic Policy	100	2 Hours	80	20	100	
5.	PG/ECO(C)/205	Viva-Voce						100
Total			500				500	

**Second year
Semester-III**

S. No.	Course No.	Name of the Course	Total Marks	Duration of the Examination	Marks		
					End Semester Examination	Internal Assessment	Total Marks
1.	PG/ECO(C)/301	Public Finance	100	2 Hours	80	20	100
2.	PG/ECO(C)/302	Monetary Economics	100	2 Hours	80	20	100
3.	PG/ECO(C)/303	Research Methodology	100	2 Hours	80	20	100
4.	PG/ECO(E)/304 (i)	Agricultural Economics Or Labour Economics	100	2 Hours	80	20	100
	PG/ECO(E)/304 (ii)		100	2 Hours	80	20	100
	PG/ECO(E)/304 (iii)	Or Gender Economics Or Computer	100	2 Hours	80	20	100
	PG/ECO(E)/304 (iv)		100	2 Hours	80	20	100

		Application in Economic Analysis					
Total			400				400

**Second year
Semester-IV**

S. No.	Course No.	Name of the Course	Total Marks	Duration of the Examination	Marks			
					End Semester Examination	Internal Assessment	Total Marks	
1.	PG/ECO(C)/401	Industrial Economics	100	2 Hours	80	20	100	
2.	PG/ECO(C)/402	Economic Planning	100	2 Hours	80	20	100	
3.	PG/ECO(C)/403	Economics of Human Development	100	2 Hours	80	20	100	
4.	PG/ECO(E)/404 (I)	Demography Or Economics of Co-Operation	100	2 Hours	80	20	100	
	PG/ECO(E)/404 (II)	Or History of Economic Thought	100	2 Hours	80	20	100	
	PG/ECO(E)/404 (III)	Or Econometrics	100	2 Hours	80	20	100	
	PG/ECO(E)/404 (IV)		100	2 Hours	80	20	100	
5.	PG/ECO(C)/405	Dissertation/Viva-Voce (Any One)						100
Total			500				500	

M.A. (ECONOMICS)

FIRST Year

Semester-I

MICRO ECONOMICS-I

Course Name: Micro Economics-I

Course No: PG/ECO (E) 101

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Micro Economics: - Definition, Nature, Scope, Importance & Limitations, Micro and Macro Economics, Deductive and Inductive Methods, Static and Dynamic Economics, Positive and Normative Economics, Basic Economic Problems: Scarcity & Choice, Equilibrium Analysis, Economic Models.

Unit-2

Law of Demand, Elasticity of Demand, Meaning, Types and Measurement, Consumer Surplus: Marshall's Measurement, Measurement through Indifference Curves., Indifference Curve Technique, Properties, Consumer's Equilibrium, Price, Income & Substitution Effects, Derivation of Demand Curve. Revealed Preference Theory of Demand, Hicks Revision of Demand Theory.

Unit-3

Production Possibility Curve, Production Function: Short Run and Long Period, Law of Variable Proportions and Returns to Scale, Iso-Quants: Least Cost Combination of Inputs, Cobb-Douglas and CES-Production Function, Euler's Theorem;

Unit-4

Opportunity Cost, Fixed and Variable Cost, Average, Marginal and Total Cost, Short Run and Long Run Cost Curves, Revenue Concepts: Average, Marginal and Total Revenue, Revenue Curves Under Different Market Conditions.

SUGGESTED READINGS: (LATEST EDITIONS)

Ahuja, H. L: Advanced Economic Theory, S. Chand & Co., New Delhi

Baumol W.J. Economic Theory and Operations Analysis, Prentice Hall of India, New Delhi.

Chauhan. S.P.S. Microeconomics: Theory and Applications, PHI Learning Pvt. Ltd., New Delhi – 110001.

Dwivedi , Microeconomics: Theory and Applications (Second Edition), Dorling Kindersley (India) Pvt. Ltd.

Hirshleifer J.A Glazer, Price Theory and Applications, Prentice Hall of India, New Delhi.

Koutsoyiannis A.: Modern Micro Economics, McMillan.

Kreps David. M., A Course in Microeconomic Theory, Princeton University Press, Princeton

Lancaster K.: Consumer Demand- A New Approach, Rand McNally London.

Layard P.R.G and A.W. Walters , Micro Economic Theory, McGraw Hill, New York.

Maddalaand Miller Ellen: Micro Economic Theory and Applications, McGraw Hill, New Delhi.

Sen, Anindya : Microeconomic Theory and Applications, Oxford University, Press, New Delhi.

Stigler G. (1996), Theory of Price, Prentice Hall of India, New Delhi.

Varian. H. , Micro Economic Analysis, W.W. Norton, New York.

INTERNATIONAL ECONOMICS

Course Name: International Economics

Course No: PG/ECO (C) 102

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Concept of Inter-Regional and International Trade, Importance of International Trade, Theories of International Trade: Adam Smith- Absolute Cost Advantage and Ricardo- Comparative Cost Advantage, Law of Reciprocal Demand, Offer Curve Analysis, Modern Theory of International Theory, Theorem of Factor Price Equalization, the Heckscher-Ohlin Theorem.

Unit-2

Economic Growth and Effects on International Trade, Measurement of Gains from Trade and their Distribution, Concepts of Terms of Trade, their Uses and Limitations, Hypothesis of Secular Deterioration of Terms of Trade, Terms of Trade and LDC's, Trade as an Engine of Economic Growth, Its Welfare Implications.

Unit-3

Foreign Exchange Rate: Meaning, importance, Determination of Exchange Rate, Theories of Exchange rate, Mint Parity Theory, Purchasing power Parity Theory, Exchange Control: Objectives, Procedure, Methods Exchange Control, Free Trade v/s protection, Trade Barriers, Tariffs, Quotas and Non-Tariffs Barriers, Economic Effects of Tariffs and Quotas on National Income, Output and Employment.

Unit-4

Balance of Trade and Balance of Payments: Meaning, Components, Structure, Capital and Current Account, Equilibrium and disequilibrium in the BOPs, Causes of Disequilibrium in BOP and Methods of Correcting Disequilibrium, IMF, World Bank and Asian Development Bank, Their Achievements and Failures, W.T.O. and its Impact on the Different Sectors of the Indian Economy, Recent Changes in the Direction and Composition of Foreign Trade in India, Recent EXIM Policy.

SUGGESTED READINGS: (LATEST EDITIONS)

Aggarwal, M.R. Regional Economic Cooperation in South Asia, S. Chand and Co., New Delhi.

Bhagwati, J. (Ed.) International Trade, Selected Readings, Cambridge, University

Brahmananda, P.R. The IMF Loan and India's Economic Future, Himalaya Publishing House, Bombay.

Carbough, R.J. International Economics, International Thompson Publishing, New York.

Chacholiades, M., International Trade: Theory and Policy, McGraw Hill, Kogakusha, Japan.

Dana, M.S., International Economics: Study, Guide and Work Book, (5th Edition), Routledge Publishers, London.

Dunn, R.M. and J.H. Mutti, International Economics, Routledge, London.

Grable, J.O., International Financial Markets, Prentice Hall, Englewood Cliffs, New York.

Kenen, P.B., The International Economy, Cambridge University Press, London

Kindleberger, C.P. International Economics, R.D. Irwin, Homewood

King, P.G. (1995), International Economics and International Economic Policy : A Reader, McGraw Hill International, Singapore.

Krugman, P.R. and M. Obstfeld, International Economics: Theory and Policy, Glenview, Foresman.

Salvatore, D., International Economics, Prentice Hall, Upper Saddle River, N.J., New York.

Soderston, Bo, International Economics, The Macmillan Press Ltd., London.

Verma, M.L., International Trade, Vikas Publishing House Pvt. Ltd., Delhi.

QUANTITATIVE METHODS AND STATISTICAL TECHNIQUES

Course Name: Quantitative Methods and Statistical techniques

Course No: PG/ECO (C) 103

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Meaning, Scope, Importance and Limitations of Statistics, Collection of Data: Primary and Secondary, Census and Sampling Methods of Data Collection, Classification and Tabulation of Data, Measures of Dispersion: Standard Deviation, Co-efficient of Variation, Co efficient of Skewness: Karl Pearson's and Bowley's Methods.

Unit-2

Karl Pearson's Coefficient of Correlation, Rank Correlation Coefficient, Significance of Regression, Regression Lines and Equations, Fitting of Lines of Regression by the Least Squares Method, Association of Attributes: Yule's Coefficient of Association, Time Series: Components, Secular Trend and Short Time Oscillations. Fitting trend curves.

Unit-3

Meaning and Importance of Index Numbers Fisher Ideal Index Number, Time Reversal and Factor Reversal Test; Interpolation and Extrapolation: Binomial, Newton's and Lagrange Methods, Meaning and Definition of Probability, Probability Rules, Addition and Multiplication Rule, Conditional Probability.

Unit-4

Equation of a Straight Line; Elementary Knowledge of Differential Calculus, Problem of Maxima & Minima in Single and Multivariate functions, Matrix: Basic Concepts of Matrices, Simple Operations on Matrices. Determinants: Basic Properties of Determinants, Solution of Simultaneous Equations with Determinant Method.

SUGGESTED READINGS: (LATEST EDITIONS)

Allen, R.G.D., Mathematical Analysis for Economists, Macmillan Press and ELBS, London.

Chiang, A.C., Fundamental Methods of Mathematical Economics, McGraw Hill, New York.

Gupta, S.C., Fundamentals of Applied Statistics, S. Chand & Sons, New Delhi.

Handry, A.T., Operations Research, Prentice Hall of India, New Delhi.

India Pvt. Ltd., New Delhi.

Monga, G.S., Mathematics and Statistics for Economists, Vikas Publishing House, New Delhi.

Speigal, M.R., Theory and Problems of Statistics, McGraw Hill Book Co., London.

Taha, H.A., Operations Research : An Introduction (6th Edition), Prentice Hall of

Yamane, Taro, Mathematics for Economists, Prentice Hall of India, New Delhi.

UTTARAKHAND ECONOMY

Course Name: Uttarakhand Economy

Course No: PG/ECO(C) 104

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Uttarakhand Economy: A macro Glance, Natural Resources: Land, Water, Minerals, Forests, Power Resources, Population Dynamics: Growth, Composition, Density, Rural- Urban Population; Migration, Unemployment, Remedies, Anti- Poverty and Employment Generation Programmes, Trends in State Income, Sources of State Finances, Targets and Achievements of Plans and Current Year Budget, Growth of SDP, PCI, HDI.,

Unit- 2

Agriculture: Land Use Pattern in Uttarakhand, Production, Cropping pattern, Productivity, Yield of Major Crops, Horticultural/Plantation Crop, Trends in Fruit and Vegetable Production and Productivity, Floriculture, Sericulture, Role of Agriculture and Horticulture in State Domestic Product, Agricultural Marketing: Problems, Sources of Agricultural Finance, Live Stock Economy, Critical Evaluation of Government Policies on Agriculture and Horticulture Sector.

Unit - 3:

Trends and Patterns in Industrial Growth, Large Scale and Small-Scale Industries of Uttarakhand, Irrigation and Power Sector, Rural Industrialization, Trends in Hydro Power Generation in Uttarakhand, Environmental Issues Related to Industrialization and Power Projects In Uttarakhand, Regional Imbalance: Causes and Consequences, Measures to Reduce Imbalances, Labour Welfare Measures and Skill Development Programmes.

Unit-4

Transport and Communications: Road, Rail and Air, Banking, Housing, Health Care Infrastructure, Mortality, Reproductive Health, Maternal Nutrition and Child Health Policies, Education: Literary Trends in the State, Major Achievements and Failures, Tourism inflow, Revenue and Development

Initiatives, Role of Tourism in the Economic Development of Uttarakhand, Major Impediments, Steps Taken to improve Tourism in the State and Progress Achieved.

SUGGESTED READINGS(LATEST EDITION)

Ashok Kumar Tiwari, Infrastructure and Economic Development in Uttarakhand, Indus Publishing. House, New Delhi.

Economic Survey, Various Issues, Department Of Economics and Statistics, Government of Uttarakhand

L.R. Sharma, Quality of Life in Himalayan Region, Indus Publishing House, New Delhi.

Sharma, L.R. The Economy Of Uttarakhand: Growth And Structure: A Study In Development Performance, Mittal Publishing House, New Delhi.

Uttarakhand Development Report, Planning Commission.

Y.S. Parmar, Years of Challenge and Growth, Rubicon Publishing House New Delhi.

M.A. (ECONOMICS)

FIRST Year

Semester-II

MICRO ECONOMICS-II

Course Name: Micro Economics-II

Course No: PG/ECO(C) 201

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Perfect Competition: Features, Price Determination, Equilibrium of the Firm and Industry, Monopoly: Price and Output Determination, Discriminating Monopoly: Price Discrimination, Equilibrium under Discriminating Monopoly, Regulation of Monopoly through Taxation and Price Regulation.

Unit-2

Monopolistic Competition: Price and Output Determination, Excess Capacity, Selling Cost. Oligopoly: Price and Output Determination, Cournot's Model and Chamberlin's Model of Oligopoly, Kinked Demand Curve theory, Game Theory of Oligopoly, Duopoly: Price and Output Determination.

Unit-3

Theory of Distribution: Micro Theories of Distribution, Rent (Ricardian and Modern theories), Wages (Marginal Productivity and Modern Theories), Interest (Neo-classical, Liquidity Preference Theories, IS-LM model) and Profit (Knight and Shackle Theories), Euler's theorem.

Unit-4

Welfare Economics: Concept of social welfare, Pareto optimality criterion and efficiency conditions, Market failures, Kaldor-Hicks Criterion, Compensation principle, Bergson-Samuelson Social welfare function, Arrow's Impossibility Theorem.

SUGGESTED READINGS: (LATEST EDITIONS)

Archibald, G.C. (Ed.) , Theory of the Firm, Penguin, Harmondsworth

Bain, J., Barriers to New Competition, Harvard University Press, Harvard.

Broadway, R.W. and N. Bruce, Welfare Economics, Basil Blackwell, London
Cambridge.

Graff, J. De V., Theoretical Welfare Economics, Cambridge University Press.

H.L. Ahuja (2008), Advanced Economic Theory, S.Chand publication, New
Delhi

Koutsoyiannis, A., Modern Microeconomics, (2nd Edition), Macmillan Press, London.

Kreps, David M., A Course in Microeconomic Theory, Princeton University Press, Princeton.

Layard, P.R.G. and A.W. Walters, Microeconomic Theory, McGraw Hill, New York

Sen, A., Microeconomics: Theory and Applications, Oxford University Press, New Delhi.

Stigler, G., Theory of Price, (4th Edition), Prentice Hall of India, New Delhi

Varian, H., Microeconomic Analysis, W.W. Norton, New York

MACRO ECONOMICS

Course Name: Macro Economics

Course No: PG/ECO(C) 202

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Macro Economics: Meaning, Nature, Scope, Importance and Limitations. Distinction between Macro Economics and Micro Economics, Types of Macro Economics, Basic Concepts of Macro Economics, Post Keynesian development in Macro Economics: Monetarism; Supply-side Economics; New Classical Economics: Rational Expectation Theory, Macro Economic Variables, Stocks and Flows, Problem of Aggregation:

Unit-2

Meaning and Different Concepts of National Income, Importance and Difficulties in Measurement of National Income, Circular Flow of Income In Two, Three and Four Sector Economy, Measurement of National Income, National Income Accounting: Social Accounting, Green Accounting, Input-Output Accounting and Balance of Payments Accounting: Meaning of Consumption, Income – Consumption Relation, APC and MPC, Determinants of Consumption Function.

Unit-3

Meaning and Determinants of Investment, Long and Short Run Shifts in Investment Function, Marginal Efficiency of Capital (MEC), Determinants of MEC, Principle of Accelerator, Multiplier and Super Multiplier, Classical Theory of Income and Employment; Criticism against Classical Theory, Keynes's Theory of Income and Employment: Criticism of Keynes's Theory, Keynes's Theory and Under-Developed Countries.

Unit-IV

Business Cycles: Meaning, Characteristics and Phases of Business Cycles, Theories of Business Cycles: Hawtrey, Hayek, Keynes and Schumpeter, Business Cycles: Models of Samuelson, Hicks and Kaldor, Control of Business Cycles, Relative Effectiveness of Monetary and Fiscal Policies.

SUGGESTED READINGS:(LATEST EDITIONS)

Ackley,G.Macroeconomics : Theory and Policy, Macmillan, New York

Blackhouse, R. and A. Salansi (Eds.) Macroeconomics and the Real World (2 Vols.), Oxford University Press, London

Branson, W.A. Macroeconomic Theory and Policy, (3rd Edition), Harper and Row, New York

Dornbusch, R. and F. Stanley Macroeconomics, McGraw Hill, Inc., New York

Hall, R.E. and J.B. Taylor, Macroeconomics, W.W. Norton, New York

Heijdra, B.J. and V.P. Fredericck, Foundations of Modern Macroeconomics, Oxford University Press, New Delhi

Jha, R. Contemporary Macroeconomic Theory and Policy, Wiley Eastern Ltd., New Delhi

Romer, D.L. Advanced Macroeconomics, McGraw Hill Company Ltd., New York

Scarfe, B.L. Cycles, Growth and Inflation, McGraw Hill, New York

Shapiro, E. Macroeconomic Analysis, Galgotia Publications, New Delhi

Surrey, M.J.C. (Ed.) Macroeconomic Themes, Oxford University Press, Oxford

ECONOMICS OF GROWTH AND DEVELOPMENT

Course Name: Economics of Growth and Development

Course No: PG/ECO(C) 203

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Concepts of Growth and Development, Difference between Growth and Development, Characteristics and Measurement of Development, Factors affecting Economic Growth, Characteristics of Under Developed Countries, Poverty – Absolute and Relative, Measuring Development: Basic Needs, Per Capita Income, Human Development Index and Physical Quality of Life Index, Impediments to Economic Growth.

Unit-2

Theories of Development: Adam Smith, Ricardo, Malthus, Karl Marx Theory, Schumpeter's Theory, Keynes Theory of Economic Development, Restow's – Theory of Stages of Economic Growth, Rosentein Rodan's Big Push Theory, Harvey Leibenstein's Critical Minimum Effort Theory, Lewis Theory, Nurkse Theory of Economic Development.

Unit-3

Role of Capital Formation in Economic Development, Choice between Rapid Capital Formation and Rapid increase in Income, Role of Technology in Economic Development, Choice of Appropriate Technology, Strategies for Development: Balanced versus Unbalanced Growth and Capital intensive Versus Labour-Intensive Strategies, The Environment and Development, Investment Criteria, Cost-Benefits Analysis.

Unit-4

Sectoral Aspects of Development, Role of Agriculture in Economic Development, Efficiency and Productivity In Agriculture, Agricultural Policy In Developing Countries, Rationale and Pattern of Industrialization in Developing Countries, Terms of Trade

between Agriculture and Industry; Infrastructure and Economic Development, Trade and Economic Development- International Trade as Engine of Growth.

SUGGESTED READINGS: (LATEST EDITIONS)

Adelman, Theories of Economic Growth and Development, Stanford University Press, Stanford.

Behrman, S. and T.N. Srinivasan, Handbook of Development Economics, Vol. 3,

Brown, M. On the Theory and Measurement of Technical Change, Cambridge

Chenery, H. and T.N. Srinivasan (Eds.), Handbook of Development Economics, Vols. 1 & 2, Elsevier, Amsterdam.

Chenery, H.B. et. al. (Eds.), Redistribution with Growth, Oxford University Press,

Dasgupta, P. An Enquiry into Well-being and Destitution, Clarendon Press, Oxford. Elsevier, Amsterdam.

Ghatak, S. An Introduction to Development Economics, Allen and Unwin, London.

Gillis, M., D.H. Perkins, M. Romer and D.R. Snodgrass (1992), Economics of Development, W.W. Norton, New York.

Gimmell, N, Surveys in Development Economics, Blackwell, Oxford.

Higgins, B, Economic Development, W.W. Norton, New York.

Hogendorn, J., Economic Development, Addison, Wesley, New York.

Kahkonon, S. and M. Olson, A New Institutional Approach to Economic Development, Vistaar.

Kindleberger, C.P, Economic Development, (3rd Edition), McGraw Hill, New York. Oxford.

Todaro, M.P, Development Planning : Models and Methods, Oxford University Press, Oxford.

INDIAN ECONOMIC POLICY

Course Name: Indian Economic Policy

Course No: PG/ECO(C) 204

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Features and Characteristics of the Indian Economy, Endowment of Natural Resources, Demographic Features, National Income, Trends and Structure of National Income, Poverty and Inequality, Nature, Policy & Implications, Growth and Structural Change in the Indian Economy, Employment Trends in Organized and Unorganized Sector.

Unit-2

Conventional and Non-Conventional Energy Development in India, Energy Policy, Transport, Social Infrastructure in India, Indian Financial System, Issues of Financial Inclusion, Financial Sector Reforms, Review of Monetary Policy of R.B.I., Economic Reforms- Rationale of Economic Reforms, Liberalization, Privatization and Globalization of the Economy.

Unit - 3:

Role of Agriculture, Productivity, Cropping Pattern, Technical Changes in Agriculture, Land Reforms, Pricing Policy, Role of Industry, Structure and Pattern, Public versus Private Sectors, Industrial Policy of India, Role of Service Sector in Indian Economy, Banking Sector in India, Money and capital markets; Issues in export-import policy , Foreign Capital and MNCs in India

Unit - 4:

Basic socio-economic issues: Poverty, illiteracy, unemployment, inequality in the distribution of income, child labour, bonded labour, Gender Discrimination, Brain drain, Rural-Urban Migration, Impact of New Economic Policy on Poverty, Unemployment and Inequality in the Distribution of Income – Employment and Education Policies in India.

SUGGESTED READINGS: (LATEST EDITIONS)

Ahluwalia, I.J. and I.M.D. Little (Eds.)India's Economic Reforms and Development (Essays in honour of Manmohan Singh), Oxford University Press, New Delhi.

Bardhan, P.K.The Political Economy of Development in India, Oxford University Press, New Delhi.

Bawa, R.S. and P.S. Raikhy (Ed.)Structural Changes in Indian Economy, Guru Nanak Dev University Press, Amritsar

Brahmananda, P.R. and V.R. Panchmukhi (Eds.),Development Experience in the Indian Economy : Inter-State Perspectives, Bookwell, Delhi.

Chakravarty, S.Development Planning: The Indian Experience, Oxford University Press, New Delhi.

Dantwala, M.L.Dilemmas of Growth: The Indian Experience, Sage Publications, New Delhi.

Datt, R. (Ed.)Second Generation Economic Reforms in India, Deep & Deep Publications, New Delhi.

Government of India, Economic Survey, (Annual), Ministry of Finance, New Delhi.

Jain, A.K.Economic Planning in India, Ashish Publishing House, New Delhi.

Jalan, B.India's Economic Policy — Preparing for the Twenty First Century, Viking, New Delhi.

Jalan, B.The Indian Economy — Problems and Prospects, Viking, New Delhi.

Joshi, V. and I.M.D. Little,India : Macro Economics and Political Economy, 1964- 1991, Oxford University Press, New Delhi.

New Delhi.

Parikh, K.S. India Development Report — 1999-2000, Oxford University Press, Reserve Bank of India, Report on Currency and Finance, (Annual).

Sandesara, J.C.Industrial Policy and Planning, 1947-1991 : Tendencies, Interpretations and Issues, Sage Publications, New Delhi

Sen, R.K. and B. Chatterjee,Indian Economy : Agenda for 21st Century (Essays in honour of Prof. P.R. Brahmananda), Deep & Deep Publications, New Delhi.

M.A. (ECONOMICS)

Second Year

Semester-III

PUBLIC FINANCE

Course Name: Public Finance

Course No: PG/ECO(C) 301

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Public Economics: Issues and Concepts, Role of Government, Fiscal Functions of the Government, Allocation, Distribution and Stabilization-Co-ordination among these Functions, Market Failure, Imperfections, Decreasing Costs, Externalities, Private Goods, Public Goods and Merit Goods.

Unit-2

Theory of Public Expenditure, Structure and Growth of Public Expenditure, Canons of Expenditure, Kinds and Reasons for Growth in Public Expenditure, Effects of Public Expenditure on Production and Distribution, Wagner's Law of Increasing State Activities, Wiseman- Peacock Hypothesis, Public Budget, Performance and Programming, Zero-Base Budgeting, Balanced Budget, Analysis of Recent year Budgets of India and Uttarakhand.

Unit-3

Taxation: Principle of Taxation, Benefit Received Theory, Ability to Pay Approach, Principle of Maximum Social Advantage, Taxable Capacity: Meaning, Types and Measurement, Impact, Incidence and Effects of Taxation, Characteristics of a Good Tax System, The Indian Tax System: Major Taxes in India, Direct and Indirect Taxes, GST, Recent Reforms in Direct and Indirect taxes in India.

Unit-4

Public Debt: Meaning, Burden & Sources of Public Debt, Public Debt Management; Repayment of Public Debt, Fiscal Policy for Stabilization, Indian Fiscal Policy since 1991, Non-tax revenue of Centre, State and local bodies, Center-State Financial Relationship in India, Problems of State Resources and Indebtedness, Transfer of Resources From Union and State to Local Bodies, Recommendations of Latest Finance Commission.

SUGGESTED READINGS: (LATEST EDITIONS)

Ashutosh Raravikar, Fiscal Deficit and Inflation in India, Macmillan India Ltd. New Delhi.

Atkinson, A.B. and J.E. Siglitz, Lectures on Public Economics, Tata McGraw Hill, New York.

Auerbach, A.J. and M. Feldstern (Eds.), Handbook of Public Economics, Vol. I, North Holland, Amsterdam.

Bhargava, P.K., Taxation of Agriculture in India, Vora and Co. Bombay.

Bhargava, P.K. Some Aspects of Indian Public Finances, Uppal Publishing House, New Delhi.

Bhargava, P.K. India's Fiscal Crisis, Ashish Publishing House, New Delhi.

Bhargava, R.N. Indian Public Finances, B.D. Bhargava and Sons, Chandausi.

Borkar, V.V., Income Tax Reform in India, Popular Prakashan, Bombay.

Buchanan, J.M. The Public Finances, Richard D. Irwin, Homewood.

Chelliah, R.J. (Ed.) Towards Sustainable Growth, Oxford University Press, New Delhi.

Datt, R. (Ed.) Second Generation Economic Reforms in India, Deep & Deep

Dr. Joshi P.L. Zero Base Budgeting Technology in Government, Dhruv and Deep Books, Bombay.

Gandhi, V.P. Some Aspects of India's Tax Structure, Vora and Company, Bombay.

Goode, R. Government Finance in Developing Countries, Tata McGraw Hill, New Delhi.

Government of India (1992), Reports of the Tax Reforms Committee — Interim and Final (Chairman : Raja J. Chelliah).

Houghton, J.M. The Public Finance : Selected Readings, Penguin, Harmondsworth.

Jha, R. Modern Public Economics, Routledge, London.

Menutt, P. The Economics of Public Choice, Edward Elgar, U.K.

Mithani D.M. Principles of Public Finance and Fiscal Policy Himalaya Publishing House, New Delhi.

Mundle, S. Public Finance Policy: Issues for India, Oxford University Press, New Delhi.

Musgrave, R.A. The Theory of Public Finance, McGraw Hill, Kogakhusa, Tokyo.

Ruddar Datt and K.P.M. Sundharam (2008), Indian Economy, S.C.Chand and Company Ltd, New Delhi

Shome, P. (Ed.) Tax Policy : Handbook, Tax Division, Fiscal Affairs Department, International Monetary Fund, Washington D.C.

Shoup, C.S. Public Finance, Aldine, Chicago.

Srivastava, D.K. (Ed.) Fiscal Federalism in India, Har-Anand Publications Ltd., New Delhi

MONETARY ECONOMICS

Course Name: Monetary Economics

Course No: PG/ECO(C) 302

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

The Definition of Money: Function and Types of Money, Nature and Functions of Money, Classification of money, Role of money in Economic development, Role of Money in a Capitalist and Socialist Economy; Meaning and Types of Monetary Standards, Monetary Standards, Gold, Silver and Paper.

Unit-2

Demand for Money: Fisher, Cambridge and Keynesian Approach, Approaches of Friedman, Patinkin, Baumol and Tobin, Meaning and Definitions of Inflation, Causes, Effects and Control of Inflation, Inflationary Gap, Phillips Curve and Rational Expectations, Theories of Inflation, view of Monetarists, Keynesians and Structuralists.

Unit-3

Commercial Banking: Functions, Credit Creation by Commercial Banks and Credit Creation Multiplier, Major Developments in Commercial Banking in India since Nationalization and During Post Economic Reforms, Banking Sector Reforms, Functions of a Central Bank, Quantitative and Qualitative Methods of Credit Control, Role, Objectives and Functions of Reserve Bank of India.

Unit -4

Concepts of Monetary Resources: Mobilization of Resources. Money Supply (M_1 , M_2 , M_3 , M_4): Monetary Policy and Credit Policy: Concepts, Objectives, tools, Role and Limitations, Recent Monetary Policy in India, Monetary Management in India, Inflation in India, Financial Sector Reforms in India, Banking Soundness and Macro Economic Management.

SUGGESTED READINGS: (LATEST EDITION)

Dornbusch, R. and F. Stanley, *Macroeconomics*, McGraw Hill, Inc., New York.

Gupta, S.B. *Monetary Economics-Institutions, Theory and Policy*, S.Chand publication, New Delhi

Gupta, S.B. *Monetary Planning in India*, Oxford University Press, New Delhi

Gurley, J. and E.S. Shaw, *Money in a Theory of Finance*, Brookings Institution,

Hall, R.E. and J.B. Taylor, Macro Economics, W.W. Norton, New York.

Heijdra, B.J. and V.P. Fredericck, Foundations of Modern Macroeconomics, Oxford University Press, New Delhi.

Jha, R. Contemporary Macroeconomic Theory and Policy, Wiley Eastern Ltd., New Delhi.

Mckinen, G.E. Money, The Price Level and Interest Rates, Prentice Hall of India, New Delhi.

Reddy, Y.V. A Review of Monetary and Financial Sector Reforms in India — A Central Banker's Perspective, UBSPD, New Delhi.

RESEARCH METHODOLOGY

Course Name: Research Methodology

Course No: PG/ECO(C) 303

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Meaning of Research, Pure and Applied Research, Social Science Research: Objectives, Meaning, Nature and Importance of Social Science Research, Limitations in Social Science Research, Research Methods and Methodology, Criteria of Good Research, Review of Literature and Identifying Research Problem, Formulation of a Research Problem, Complete Research Process, Research Design: Meaning, Importance and Types, Steps in Preparing a Research Design, Features of Good Research Design

Unit-2

Quantitative Methods, Use of Secondary Data, constructing a Questionnaire and Designing a Survey, Merits and Demerits of Survey Methods, Types of Survey, Selecting the Survey Method, Sample Survey, Different Types, Merits and Demerits, Qualitative Methods, The Case Study Methods, Merits and Demerits, Participant Observation, Interview Methods, Open and Closed, Structured and Unstructured, Focused Group Discussions, Process Documentation.

UNIT-3

Processing: Editing, Coding, Classification, Objects, Rules, Tabulation, Preparation of a Statistical Table, Requisite of a Good Table, Types of Tables, Format of a Simple One-Way Table, Three Way Table, Classification and Tabulation, Graphs and Diagrams, Measures of Central Tendencies, Dispersion and Correlation, Percentage, Bi-Variate Presentation, Statistical Analysis and Testing of Hypothesis, T, Z, F and Chi Square Tests, Statistical Software, MS Excel and SPSS Package.

Unit-4

Reports: Types of Reports, Steps in Report Writing, Structure and General Format of Research Report Writing Styles, Writing the Report, Presentation, Presentation of Tables, Diagrams, Charts and Maps, Documentation: Appendices, Use of Footnotes, Citation, Endnotes, References and Bibliography, Role of Computer in Research and Reporting.

SUGGESTED READINGS: (LATEST EDITIONS)

Business Research Methods, Donald R Cooper, McGraw Hill, New Delhi

Statistical Methods, Gupta, S.Chand publication, New Delhi

Research Methodology, Cauvery.R, Sudhanayak U.K, Girija.M and Meenakshi.R, S.Chand & Company Ltd, New Delhi.

Research Methodology: A Guide for Researchers in Management and Social Sciences, Bill Taylor, Gautam Sinha, Taposh Ghoshal, Prentice-Hall of India Private Limited, New Delhi

Research Methodology: Methods and Techniques, C.R. Kothari, New Age International, New Delhi

Statistical Methods, Dr. S.P. Gupta, Sultan Chand & Sons, New Delhi

Statistics for Management, Levin and Rubin, Asian Publishing House, New Delhi

AGRICULTURAL ECONOMICS

Course Name: Agricultural Economics

Course No: PG/ECO (E) 304(I)

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Meaning, Nature and Scope of Agricultural Economics, Need for a Separate Study of Agricultural Economics, Role of Agriculture In Economic Development, Regional Disparities in Indian Agriculture, Interdependence between Agriculture and Industry and between Agriculture and the Rest of the Economy, Agricultural Development, Poverty and Environment.

Unit-2

Agricultural Production, Trends of Agriculture Growth under the Plans, Inter Regional Variations, Land Reforms, Measures and Performance, Land Holding, Sub-division and Fragmentation, Technology in Agriculture, Meaning, Objectives, Factors and Limitations, Use of Modern Technology, Green Revolution, Mechanization of Indian Agriculture, Use of Biotechnology in Agriculture, Impact of Technological Changes on Agricultural Production.

Unit-3

Agriculture Finance in India, Importance, Sources, Institutional and Non-Institutional, Role of Commercial Banks, Regional Rural Banks, Role of NABARD, Agricultural credit, Challenges, Opportunities, Strategies, Unorganized Credit System, Agricultural Rural Credit Institutions, Agriculture Labour: Classification, Characteristics and Conditions, Agricultural Wages in India, Male-Female Wage Differences, Programmes for Improving the Conditions of Agricultural Labour,

Unit-4:

Agricultural Marketing and Prices, Agricultural Marketing, Defects in Agricultural Marketing, Corrective Measures, Regulated and Co-operative Marketing, State Policy with Respect to Agricultural Marketing, Warehousing; Prices, Crop Insurance, Agricultural Price Policy, Objectives, Instrument, Evaluation, Food Security, Agricultural Prices and Public Distribution Scheme (PDS).

SUGGESTED READINGS: (LATEST EDITIONS)

Drummond, H E and Goodwin, J W., Agricultural Economics, Standard Book Distributing House, 2004

Eicher, Carl and Lawrence Witt, Agriculture in Economic Development, McGraw Hill Book Company.

Joshi P C., Land Reforms in India: Trends and Perspective, New Delhi; Allied Publishers.

Kahlon, A S and Karam Singh, Managing Agricultural Finance: Theory and Practice, New Delhi: Allied Publishers Pvt. Ltd.

Khusro, A. M., Readings in Agricultural Development, New Delhi: Allied Publishers Pvt. Ltd.

Mellor W. Hohn, The Economics of Agricultural Development, Mumbai: Vora and Co Publishers PVt. Ltd.

Ruddar Datt, K.P.M. Sundharam, 2008, Indian Economy, S.Chand publication, New Delhi

Rudra Ashok, Indian Agricultural Economics: Myths and Realities, New Delhi: Allied Publishers Pvt. Ltd.

Sadhu A.N., Singh [Amarjit], Fundamentals of Agricultural Economics.

Shrivastava, O S, Agricultural Economics.

Tyagi, B P Agricultural Economics and Rural Development.

LABOUR ECONOMICS

Course Name: Labour Economics

Course No: PG/ECO (E) 304(II)

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Labour Economics: Concept, Nature, Scope and importance of Labour Economics, Characteristics of the Indian Labour Market, Labour in the Unorganized Sector, Meaning, Definitions and causes of Child Labour, Constitutional and Legislative Provisions and Measures to Regulate Child Labour, Women Workers, Discrimination and Gender Bias in Treatment of Labour and Protective Measures.

Unit-2

Wage Determination Theory: Classical, Neo-Classical & Collective Bargaining Theory, Concepts of Minimum Wage, National Wage Policy In India, Industrial Disputes, Nature and Causes of Industrial Disputes, Impact of Industrial Disputes, Settlement and Preventive Mechanism of Industrial Disputes in India, Industrial Act 1947 and Amendments, Collective Bargaining, Adjudication and Arbitration Role of Judicial Activism.

Unit-3

Unemployment: Concept, Types, and Measurement Particularly in India, Employment and Development Relationship, Poverty and Unemployment in Developing Countries, Analysis of Educated Unemployment, Employment Policy in Five Year Plans and Its Evaluation. Labour Welfare: Introduction and Objectives, Labour Welfare Activities in India, Social Security, Introduction, Features, Social Security and Social Insurance in India.

Unit-4

Trade Unions, Introduction, Nature, Characteristics and Functions, Growth, Pattern and Structure of Trade Unions in India, Achievements and Weaknesses of Trade Union Movement in India, Labour Migration, Effects of Migration, Absenteeism of Industrial Labour in India, Causes, Effects and Remedies of Absenteeism, Labour Turnover, Causes and remedies of Low Labour Turnover In India.

SUGGESTED READINGS: (LATEST EDITIONS)

Datt, G. Bargaining Power, Wages and Employment: An Analysis of Agricultural Labour Markets in India, Sage Publications, New Delhi.

Datt, G. Bargaining Power, Wages and Employment: An Analysis of Agricultural Labour Markets in India, Sage Publications, New Delhi.

Hajela, P.D. Labour Restructuring in India: A Critique of the New Economic Policies, Commonwealth Publishers, New Delhi.

Hajela, P.D. Labour Restructuring in India: A Critique of the New Economic Policies, Commonwealth Publishers, New Delhi.

Jhabvala, R. and R.K. Subrahmanya (Eds.), The Unorganised Sector : Work Security and Social Protection, Sage Publications, New Delhi.

Jhabvala, R. and R.K. Subrahmanya (Eds.) The Unorganised Sector : Work Security and Social Protection, Sage Publications, New Delhi.

Lester, R.A., Economics of Labour, Macmillan, New York.

Lester, R.A. Economics of Labour, (2nd Edition), Macmillan, New York.

McConnell, C.R. and S.L. Brue, Contemporary Labour Economics, McGraw-Hill, New York.

McConnell, C.R. and S.L. Brue, Contemporary Labour Economics, McGraw-Hill, New York.

Papola, T.S., P.P. Ghosh and A.N. Sharma (Eds.), Labour, employment and Industrial Relations in India, B.R. Publishing Corporation, New Delhi.

Papola, T.S., P.P. Ghosh and A.N. Sharma (Eds.), Labour, employment and Industrial Relations in India, B.R. Publishing Corporation, New Delhi.

Rosenberg M.R. Labour Markets in Low Income Countries in Chenery, H.B. and

Rosenberg M.R. Labour Markets in Low Income Countries in Chenery, H.B. and

Ruddar Datt, K.P.M. Sundharam, 2008, Indian Economy, S.Chand publication, New Delhi

Ruddar Datt, K.P.M. Sundharam, Indian Economy, S.Chand publication, New Delhi

T.N. Srinivasan, (Eds.), The Handbook of Development Economics, North-Holland, New

T.N. Srinivasan, (Eds.), The Handbook of Development Economics, North-Holland, New York.

Venkata Ratnam, C.S. (2001), Globalization and Labour-Management Relations: Dynamics of Change, Sage Publications/Response Books, New Delhi.

Venkata Ratnam, C.S. Globalization and Labour-Management Relations: Dynamics of Change, Sage Publications/Response Books, New Delhi.

GENDER ECONOMICS

Course Name: Gender Economics

Course No: PG/ECO(E) 304 (III)

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Importance, scope and Concepts of Women Studies, Women in Patriarchal and Matriarchal Societies and Structures, Patriarchal and Matrilineal Systems and Relevance to Present Day Society in India, Economic Basis and Functioning of Patriarchy in Developed and LDCs, Particularly India; Gender Bias in the theories of Value, Distribution, and Population, Status and Role of Women in Uttarakhand Economy.

Unit-2

Demography of Female Population in India and Uttarakhand, Age Structure, Mortality Rates and Sex Ratio, Causes of Declining Sex Ratios and Fertility Rates in India, Women and their access to Nutrition, Health, Education, Community Resources and Their Impact on Female Mortality and Fertility, Power of Decision Making by women at Household, Class, Community Level, Factors Affecting Decision Making By Women, Property Rights, Access to and Control over Economic Resources, Assets;

Unit-3

Economic Status of Women and Its Effect on Work-Participation Rate, Income Level, Health and Education in Developing Countries and India, Factors affecting Female Entry In Labour Market, Supply and Demand for Female Labour in Developed and Developing Countries, Particularly India, Work Participation in Agriculture, Non-Agricultural Rural Activities, Informal Sector, Cottage and Small-Scale Industries, Organized Industry and Service Sector, Wage Differentials in Female Activities.

Unit-4

Social Security of Women, Review of Legislation for Women's Entitlements, Need for Female Labour Unions, Self-Help Groups, Gender and Economic Planning, Paradigm

Shifts from Women's Wellbeing to Women's Empowerment, Democratic Decentralization (Panchayats) and Women's Empowerment in India, Economic Status, Private Property and Participation of Women in Preindustrial and Industrial Societies, Female Contribution to National Income.

SUGGESTED READINGS: (LATEST EDITIONS)

Agnihotri, S.B., Sex ratio in Indian Population: A Fresh Exploration, Sage Publications, New Delhi.

Boserup E. Women's Role in Economic Development, George Allen and Unwin,
Desai, N. and M.K. Raj. (Eds.) Women and Society in India, Research Centre for Government of India,

Towards Equality — Report of the Committee on the Status of Women in India, Department of Social Welfare, Ministry of Education and Social Welfare, New Delhi.

Kabeer, N. and R. Subrahmaniam (Eds.), Institutions, Relations and Outcomes, Kali for Women, New Delhi.

Krishnaraj, M., R.M. Sudarshan and A. Shariff, Gender, Population and Development, Oxford University Press, New Delhi.
London.

Mazumdar, V. Symbols of Power: Studies on the Political Status of Women in India, Allied, Delhi.

Narasimhan, S, Empowering Women: An Alternative Strategy from Rural India, Networks and the State, Sage Publications, New Delhi

Papola, T.S. and A.N. Sharma(Eds.) Gender and Employment in India, Vikas Publications, New Delhi

Purushothaman, S. The Empowerment of Women in India: Grassroots Women's Sage Publications, New Delhi.

Seth, M. Women and Development: The Indian Experience, Sage Publications, New Delhi.

Srinivasan K. and A. Shroff (India : Towards Population and Development Goals, Venkateswaran, S. Environment, Development and the Gender Gap, Sage

Wazir, R. The Gender Gap in Basic Education: NGOs as Change Agents, Sage Women Studies, SNDT University, Bombay

COMPUTER APPLICATION IN ECONOMIC ANALYSIS

Course Name: Computer Application in Economic Analysis

Course No: PG/ECO(E) 304 (IV)

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Meaning, Characteristics, Types and Evolution of Computers, Components of a Computer, Basic Components of Computer, Input-Output Devices, CPU, Keyboard, Mouse & Scanner, Video Display, Printers and Plotters, Data Storage and Retrieval, Hard Disk, Floppy Disk and CD ROM, Hardware, Software and Firmware.

Unit-2

Operating System: Microsoft Disk Operating Systems (MS Dos), Operating System, Salient Features, Merits of Windows Operating System, My Documents, My Computer, Search Engines, Network Neighborhood, Features and Facilities in MS office (MS-Word, MS-Excel, MS-PowerPoint Etc.)

Unit-3

Data: Meaning, Types and Sources of Data, Data Base Management Systems (DBMS), Relational Database Management System (RDBMS), Use of Software Packages in Analyzing Data, Obtaining Results and presenting them in Meaningful and Interpretable Forms, Statistical Package for Social Sciences.

Unit-4

On Line Banking: ATM'S, Electronic Stock Exchange, Electronic Trading, Data Sharing and Decimation, Electronic Trading –B2B, B2C and C2C, Introduction to Internet, Application of Internet (WWW, E-Mail Etc.), Use of Internet in Research & daily life.

SUGGESTED READINGS: (LATEST EDITIONS)

Sinha, P. K. and Sinha, P. Computer Fundamentals, , BPB Publications, New Delhi.

Norton, Introduction to Computers, The McGraw-Hill Companies Ltd., N. Delhi

rench, C. S. Data Processing and Information Technology, BPB Publication, N. Delhi

Jain, S. and et al. IT Tools and Applications, BPB Publications, New Delhi.

Gaur, A. S. and Gaur, S. S, Statistical Methods for Practice and Research-A Guide to Data Analysis Using SPSS, Sage Publication New Delhi.

Gupta, S.C. and Kapoor, V. K, Fundamentals of Applied Statistics, Himalayan Publishing House, Allahabad,

M.A. (ECONOMICS)

Second Year

Semester-IV

INDUSTRIAL ECONOMICS

Course Name: Industrial Economics

Course No: PG/ ECO(C) 401

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Meaning, Scope, Need & Significance of the Study of Industrial Economics, Rational of Industrialization, Role of Industries In Economic Development, Industry and Agriculture Sector Linkages, Industrial Profile, Private Sector, Large, Medium & Small Scale Industries, Village Industries, Public Sector, Role, Problems and future of Public Sector Industries in India, Industrial Combinations- causes, mergers and amalgamations.

Unit-2

Theories of Industrial Location: Weber, Sargent Florence, Factors influencing Location of Industries, Industrial Imbalance, Causes and Measures, Need for Balanced Regional Development of Industries, Industrial Productivity & Efficiency, Factors affecting Productivity & Efficiency, Measures for Improvement, Structure of industrial labour, Trends in India's Industrial Employment- Measures of Generating Industrial Employment.

Unit-3

Industrial Finance: Meaning, Scope, Importance, Sources of Industrial Finance, Private, Public and Co-operative Sector, Role of IFCI, SFCs, SIDBI, Commercial Banks, Foreign Capital, Need for Foreign Capital, Government Policy towards Foreign Capital, Foreign Direct Investment, Foreign Institutional Investment, GDR, ADR, External Commercial Borrowings.

Unit-4

Recent Trends in Indian Industrial Growth, Industrial Policy 1991, Performance & Problems of Iron and Steel, Cotton textiles and Sugar Industries in India, Performance & Problems of Small Scale & Cottage Industries in India, Role of MNC's in India. Special Economic Zones (SEZs). Liberalization and Globalization and its Impact on Indian Industries.

SUGGESTED READINGS: (LATEST EDITION)

Ahluwalia, I.J. Industrial Growth in India, Oxford University Press, New Delhi.

Barthwal, R.R. Industrial Economics, Wiley Eastern Ltd., New Delhi.

Cherunilam, F. Industrial Economics: Indian Perspective , Himalaya Publishing House, Mumbai.

Desai, B. Industrial Economy in India, Himalaya Publishing House, Mumbai.

Divine, P.J. and R.M. Jones et. al. An Introduction to Industrial Economics, George Allen and Unwin Ltd., London.

Government of India, Economic Survey (Annual).

Hay, D. and D.J. Morris, Industrial Economics : Theory and Evidence, Oxford University Press, New Delhi.

Kuchhal, S.C. Industrial Economy of India (5th Edition), Chaitanya Publishing House, Allahabad.

Reserve Bank of India, Report on Currency and Finance (Annual).

Singh, A. and A.N. Sadhu Industrial Economics, Himalaya Publishing House, Mumbai.

ECONOMIC PLANNING

Course Name: Economic Planning

Course No: PG/ECO(C) 402

Maximum Marks: 100

(a) Semester Examination: 80Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20Marks

Unit-1

Economic Planning: Meaning, need and objectives, types of economic planning; Different planning systems, Requisites for successful planning. decentralized and indicative planning; Stages, Planning in a mixed economy, Rolling and fixed plan, centralized and decentralized planning, planning under capitalism and socialism, mobilization and allocation of resources, Man Power Planning, Project Evaluation.

Unit-2

Planning Techniques, Investment criteria: Rationale and types. Choice of Technique: Labour Intensive vs. Capital Intensive Technology; Choice of technique in Underdeveloped Countries, Cost-Benefit Analysis, Capital-Output Ratio, Input-Output Analysis, Role of Monetary, Fiscal and Price Policies in Economic Development, Foreign Trade and Economic Development.

Unit-3

Market Mechanism under Planning. Controls and Planning. Price Mechanism in a Planned Economy. Investment on Human Resource Development, Indian plan models: Harrod-Domar, Mahalanobis, Frisch and Sandee, Manne and Rudra, CELP model and its applications, Vakil and Brahmananda's Wage-Goods Model.

Unit-4

The Emergence of Planning in India-Objectives, Strategy and Evaluation of Indian Planning, Planning Machinery at the Centre, State and Local levels, Niti Aayog, Detailed Study of Last Two Five Year Plans. Resource Mobilization for Indian plans, Regional Planning, Regional Disparities and Development Policies in India and Uttarakhand.

SUGGESTED READINGS: (LATEST EDITIONS)

Bhagwati, J. and P. Desai India: Planning for Industrialization, Oxford University Press, London

Brahmananda, P.R. and C.N. Vakil, Planning for an Expanding Economy, Vora and Co., Bombay

Chakravarti, S. Development Planning: The Indian Experience, Clarendon Press, Oxford.

Gupta, S.P., Planning and Development in India ; A Critique, Allied Publishers Private Limited, New Delhi .

Krishnamachari, V.T. Fundamental of Planning in India, Orient Longmans, Bombay.

O.S Shrivastava, Economics of Growth, Development and Planning, Vikas Publishing house Pvt. Ltd, Delhi

Taneja & Myer, Economics of Development and Planning, Vishal publication, Delhi

Todaro, M.P. Development Planning: Models and Methods, Oxford University Press, Oxford.

Chand, M & V.K. Puri, Regional Planning in India, Allied Publishers, New Delhi

ECONOMICS OF HUMAN DEVELOPMENT

Course Name: Economics of Human Development

Course No: PG/ECO(E) 403

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Assessment: 20 Marks

Unit-1

Meaning, Concept, Definitions, components & importance of Human Development, Human Development and Economic Development, Physical Quality of Life Index, Human Resource Development; Usefulness of Concept, Theories of Human Development, Gender Empowerment Measures, Millennium/Sustainable Development Goals and Human Development, Human Development in Indian States.

Unit-2

Human Development Index: Trend of HDI, Measurement of Human Development, Limitations of Human Development Measures, Human Development Indicators: Demographic Indicators, Educational Indicators, Income and Poverty Related Indicators, Health Related Indicators, Water, Sanitation and Nutritional Indicators, Gender Related Indicators, Environment, Human and Labour Rights Related Indicators.

Unit-3

Education and Human Development, Relationship between Education and Development, Role of Education in Economic Development, Education and Social Change, Population Education and Development, Educational Profile of India, Education and Employment, Elementary, Secondary and Higher Education in India, Class and Gender Perspectives of Education, Education for all in India, SSA.

Unit-4

Health and Human Development, Population, Health and Development, System of Health Provisions in India, Health Care, Concern and Security in India, Female Health Care and Deprivation, Child Survival, Fertility and Women's Emancipation, Reproductive Health and Health Care in India, National Rural Health Mission, Health Insurance, Public Expenditure and Health Facilities in India.

SUGGESTED READINGS: (LATEST EDITIONS)

Anil B. Deolalikar, Attaining Millennium Development Goals in India, Oxford

B.G.Tilak, Women's Education and Development, Gyan Pub, House New Delhi.

Berman, P. Health Sector Reform in Developing Countries: Making Health Development Sustainable

Bruns Barabara, and Rakotomalala, Achieving Universal Primary Education By 2015, Manas Publication New Delhi

Cohn E. and T Gaske, Economics of education, Pergamon press London,

J. Behrman and T. Srinivasan, (1995) Hand Book of Development Economics

Ministry of Education , Government of India, Annual Progress Report

Ministry of Finance, Government of India, Economic Survey, 2007, 2008, 2009

Ministry of Health, Government of India, Annual Progress Report

National Council of Applied Economic Research, India Human Development Report, Oxford New Delhi

National Council of Applied Economic Research, North India Human Development Report, Oxford New Delhi

R. Govinda and Rashmi Diwan , Community Participation and Empowerment in Primary Education, Saga Publication India Pvt. Ltd, New Delhi.

World Bank, World Development Report, various issues

DEMOGRAPHY

Course No: PG/Course Name: Demography

Course No: ECO (E) 404(I)

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20Marks

Unit-1

Meaning and Scope of Demography, Components of Population Growth and Their Inter-Dependence, Measures of Population Change, Structure, Distribution and Sources of Population Data, Theories of Population: Malthus, Optimum Theory of Population, Theory of Demographic Transition, Views of Medows, Enke and Simon.

Unit-2

Fertility: Importance of the Study of Fertility, Total Fertility Rate, Gross Reproduction Rate and Net Reproduction Rate, Factors affecting Fertility, Nuptiality, Concept and Analysis of Marital Status, Trends in Age at Marriage, Mortality, Foetal and Infant Mortality, Factors Leading to Decline in Mortality in Recent Past, Life Tables, Construction and Uses.

Unit-3

Migration: Concept and Types, Temporary, Internal and International Migration, Its Effect on Population Growth and Pattern, Factors affecting Migration, Theories of Migration Related to Internal Migration, Urbanization: Growth and Distribution of Rural, Urbanization Trends in India, Life Expectancy in India.

Unit-4

Growth, Trends and Composition of Population in India, Changing Characteristics of Population In India, Occupational and Regional Distribution, Effects of Population Growth in India, Family Welfare Programme in India, The New Population Policy, Main Features of Latest Population Census with Special Reference to the State of Uttarakhand.

SUGGESTED READINGS: (LATEST EDITIONS)

Agarwal S.N. India's Population Problem, Tata McGraw-Hill Co., Bombay.

Bose, A. India's Basic Demographic Statistics, B.R. Publishing Corporation, New Delhi

Bogue, D.J. Principles of Demography, John Wiley, New York

Chenery H. and T.N. Srinivasan (Eds.) Hand Book of Development Economics, Vol. 1 & 2 Elsevier, Amsterdam

Choubey, P.K. Population Policy in India, Kanishka Publications, New Delhi.

Coale A.J. and E.M. Hoover, Population Growth and Economic Development in Low Income Countries: A Case Study of India's Prospects, Princeton University Press, Princeton

Gulati, S.C. Fertility in India: An Econometric Study of a Metropolis, Sage, New Delhi.

Simon, J.L. Population and Development in Poor Countries, Princeton University Press

Srinivasan, K. Basic Demographic Techniques and Applications, Sage, New Delhi

Srinivasan, K. and A. Shariff, India: Towards Population and Demographic Goals, Oxford University Press, New Delhi

Sryrock, H. et. al, The Methods and Materials of Demography, US Department of Commerce, Washington, D

Agarwal S.N. India's Population Problem, Tata McGraw-Hill Co., Bombay.

Bose, A. India's Basic Demographic Statistics, B.R. Publishing Corporation, New Delhi

Bogue, D.J, Principles of Demography, John Wiley, New York

Chenery H. and T.N. Srinivasan (Eds.) Hand Book of Development Economics, Vol. 1 & 2 Elsevier, Amsterdam

Choubey, P.K. Population Policy in India, Kanishka Publications, New Delhi.

Coale A.J. and E.M. Hoover, Population Growth and Economic Development in Low Income Countries: A Case Study of India's Prospects, Princeton University Press, Princeton

Gulati, S.C. Fertility in India: An Econometric Study of a Metropolis, Sage, New Delhi.

Simon, J.L. Population and Development in Poor Countries, Princeton University Press

Srinivasan, K. Basic Demographic Techniques and Applications, Sage, New Delhi

Srinivasan, K. and A. Shariff, India: Towards Population and Demographic Goals, Oxford University Press, New Delhi

Sryrock, H. et. Al, The Methods and Materials of Demography, US Department of Commerce, Washington, D.C.

Seth M. Women and Development : The Indian Experience, Sage, New Delhi.

Mishra S. Voluntary Action in Health and Population : The Dynamics of Social Transition, Sage, New Delhi

Krishnaji M., R.M. Sudarshan and A. Shariff, Gender Population and Development, Oxford University Press, New Delhi.

ECONOMICS OF CO- OPERATION

Course Name: Economics of Co-Operation

Course No: PG/ECO(E) 404 (II)

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Meaning, Nature and Characteristics of Cooperation, Importance and Objectives of Co-Operation, Principles of Co-operation, Manchester's Principles of co-operation, Co-Operation and other Economic Systems (Capitalism, and Socialism), Role of Co-operation in Planned Economy.

Unit-2

Co-operation in Great Britain, Denmark and Sweden, Rochdel, Principle, Consumers, Retails Societies, Cooperation Movement, British Cooperative Union, Livestock Farming Denmark, Cooperative Dairy Societies, Federation of Consumer Societies and Bakers and Cooperative Forbumentd or (K.F.) Federation Swedish Ramers Association, Cooperative Credit.

Unit-3

Co-operative Moment in India Indian Cooperative Societies Act 1904 and 1912. Recommendations of All India Rural Credit Survey Committee, Development of Cooperation under Five Year Plans, Organization of Credit Societies (Primary District and State Level), their Working, Achievement and Difficulties, Land Mortgage and Development Banks, Multi-purpose Societies, Service Cooperation.

Unit-4

Consumer Co-operative Departmental Stores, National Consumer Co-operative Federation, Co-operative Marketing and Ware-Housing, Co-operative and Collective Farming, Co-operative Housing Societies, Co-operative Education and Training, Role of R.B.I. in co-operative Development in India.

BOOKS RECOMMENDED: (LATEST EDITIONS)

All India – Rural Credit Survey Committee Report

All India Rural Credit Reviews Committee Report

C. R. Fey – Cooperation at Home and Abroad

Kulkarni – Theory and Practice in India and Abroad

Maresh Chand – Co-operative Problems in India
Memoria andSaxena – Co-operation in Foreign Lands
Relevant Chapters In Indian Planning Commission Report

HISTORY OF ECONOMIC THOUGHTS

Course Name: History of Economic Thoughts

Course No: PG/ECO (E) 404(III)

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit-1

Evolution of economic science, Pre-Classical Thought: Mercantilism, New Mercantilism, Physiocracy and their Role in the Development of Classical Theories, Classicism: Adam Smith, J.B.Say, David Ricardo, T.R. Malthus, J.S. Mill, Ancient Indian Economic Thought.

Unit-2

Critics of Classical Economics: Sismondi, Saint Simon, Karl Marx, Dialectical Materialism and Historical Materialism. Marxian Theories of Value, Surplus Value, Profit and Crisis of Capitalism, Fedrich List, Robert Owen, State Socialism & Rodbertus.

Unit-3

Historical School, Precursors to Marginalism: Gossen, Jevons, Menger and Walras, the Austrian School: Wiserr and Bohm-Bawerk, Wicksteed, edgeworth. Theory of Capital and Distribution.

Unit-4

Neo-Classical and Modern Thinkers: Alfred Marshall, A.C. Pigou, J.M. Keynes, J.R. Hicks, Indian Economic Thinkers- Mahadev Govind Ranade, M.K.Gandhi, B.R. Ambedkar, J.K. Mehta and Amratya Sen.

SUGGESTED READINGS: (LATEST EDITIONS)

Babatosh Datta, Indian Economic Thought, Twentieth Century Perspectives.

Dasgupta, A.K.Epochs of Economic Theory, Oxford university Press Delhi.

Ekelund, R.B. and R. Herbett , A Hisotry Economic Theory and Method. Mc Graw Hill,London.

Gandhi, K.K. Economics of village industries, , Navivan Publishing House Ahmedabad.

Gandhi, K.K.India of My Dreams, Navjivan Publishing House Ahmedabad.

Ganguli, B.N. Indian Economic thought a nineteenth century perspective, Tata, MacGraw-Hill, New Delhi.

Gide, Cand G. Rstm, A History of Economics Doctrines George G,. Harrap and Co.,London.

Gray, A,Development of Economic Doctrine, Longman Group, London

Gupta, J.N & R.C.Dutt-Life and works, London.

Hajela, T.N.History of Economic Thought Shivalal Agarwala and Co.,Agra

Kautilya Arthaqshastra tr. By R. Shayama Sastry, Rernond Priniting Press, Mysore

Rima, I.H.Development of Economic Analysis, Richard D Irvin, Homewood.

Roll E. A History of Economic Thought, Fabre, London.

ECONOMETRICS

Course Name: Econometrics

Course No: PG/ECO (E) 404(IV)

Maximum Marks: 100

(a) Semester Examination: 80 Marks

Duration of Examination: 2 Hours

(b) Sessional Assessment: 20 Marks

Unit – I

Meaning, Objectives, Nature and Scope of Econometrics. Relationship with Mathematical Economics, Economics and Statistics. The raw Material of Econometrics – Time Series and Cross Section Data. Methodology of Econometrics.

Unit – II

The Theory of Classical Least Squares, the OLS Method, Assumptions of the OLS. Desirable Properties of the Estimates, Properties of the OLS Estimates, Best, Linear, Unbiased estimates, Standard error of the OLS estimates, Test or Significance of these estimates, Coefficient of Determination and Test of its Significance.

Unit – III

Problems of the Single Equation Model: Misspecification in Variables – Specification Bias, Errors in Variables, Concept of Dummy Variable and Proxy Variable. Heteroscedasticity, Multicollinearity, Solution, Autocorrelation its Consequences, Testing the Inter-dependence of Regression Disturbances., Durbin Watson Test, Treatment of the First Order Markov scheme. Problems of Lagged Variables- Distributed Lag Model.

Unit – IV

Simultaneous Equations Model: Jointly Dependent Variables. Simultaneous Equations Bias: Predetermined Variables. Structural Form Reduced form and Final Form. The Identification Problem – Rank and Order Conditions of Identifiability (without proof) Methods of Estimation with Properties, Reduced Form Estimation and Indirect Least Squares, Two Stage Least Squares.

SUGGESTED READINGS: (LATEST EDITIONS)

Amemiya, T. Advanced Econometrics, Harvard University Press, Cambridge, Mass.

Baltagi, B.H. Econometrics, Springer, New York.

Dongherty, C. Introduction to Econometrics, Oxford University Press, New York.

Dongherty, C. Introduction to Econometrics, Oxford University Press, New York.

Goldberger, A.S. Introductory Econometrics, Harvard University Press, Cambridge, Mass

Gujarati, D.N. Basic Econometrics (2nd Edition), McGraw Hill, New Delhi.

Hill R. C., E.G. William and G.G. Judge (1997), Undergraduate Econometrics, Wiley, New York.

Kennedy. P. A Guide to Econometrics, MIT Press, New York.

Kmenta, J. (1997), Elements of Econometrics (Reprint Edition), University of Michigan Press, New York.

Koutsoyiannis, A. Theory of Econometrics (2nd ed.), The Macmillan Press Ltd.,

Krishna, K.L. (Ed.) Econometric Applications in India, Oxford University Press, New Delhi.

Maddala, G.S. (Ed.), Econometrics Methods and Application (2 Vols.), Aldershot

Theil, H. Introduction to Econometrics, Prentice Hall of India, New Delhi.

GUIDELINES FOR DISSERTATION

Course Title: Dissertation

Course No: PG/ECO (C) /405

Maximum Marks: 100

- (a) Field Study Report: 70 marks (b) Periodic Presentation (One): 10 Marks
(c) Viva Voce: 20 Marks
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Dissertation Course is offered for all students in the fourth Semester in lieu of Viva-Voce which is treated as one core course.

OBJECTIVE OF THE PROJECT

The objective of the project is to help the student to develop ability to apply economic concepts, percepts, tools and techniques to understand, describe, analyze and solve the real problems.

TYPES OF PROJECT

The project may be from any one of the following types and preferably from your area of specialization:

1. Leading economic issues related to our national or regional economy.
2. Comprehensive case study (covering single organization/multifunctional area problem, formulation, Analysis and recommendations).
3. Inter-organizational study aimed at inter-organizational. comparison/validation of theory/survey of practices.
4. Field study (empirical study).
5. An organizational study.

(PROJECT PROPOSAL (SYNOPSIS))

1. Synopsis of the project should be prepared in consultation with the supervisor. The synopsis should clearly state the objectives and research methodology of the proposed project to be undertaken. It should have full detail of the rationale, sampling, and instruments to be used.
2. Project Supervisors are also advised to restrict guiding projects in their core specialization area only.

PROJECT REPORT

1. The length of the report may be about 50 to 60 double spaced typed pages not exceeding approximately 18,000 words (excluding appendices and exhibits). However 10% variation on either side is permissible.
2. Each project report must adequately explain the research methodology adopted and the directions for future research.
3. The project report should also contain the following:
 - (a) Copy of the synopsis
 - (b) Certificate of originality duly signed by the student and the supervisor.

SUBMISSION OF PROJECT REPORT

1. Two typed copies of the project report are to be submitted to the department. The Project Work should be submitted in original in A-4 Size (29 x 20 cm), typed in double space, in a bound volume.
2. Project Report should be submitted before the final examinations of the fourth Semesters.
3. Dissertation for M. A. Economics (Fourth Semester)' should be written prominently on cover page of the dissertation.
4. The Dissertation should include the following:
 - (a) Rationale for the study
 - (b) Objectives of the study
 - (c) Research Methodology to be used for carrying out the study (detailing nature of data, data sources, collection methods, tools and techniques of analysis, sampling etc.)
 - (d) The expected contribution from the study
 - (e) Limitations if any, and the direction for future research

EVALUATION OF DISSERTATION

- (1) Performance of student in dissertation will be evaluated on the following three basis:

(a) Project report-	70 Marks
(b) Periodical Presentation (One)	10 Marks
(c) Viva Voce	20 Marks
Total:	100 Marks

- (2) Periodical presentation will be assessed by internal examiner but the dissertation and viva-voce will be assessed jointly by internal and external examiner.

SYLLABUS

**Sri Dev Suman Uttarakhand Vishwavidyalaya
Badshahithaul, Tehri (Garhwal)**

**M.A. HISTORY 02 YEARS SEMESTER SYSTEM
(Effective from Academic Session: 2018-19)**

SYLLABUS COMMITTEE

- | | |
|--|-----------------|
| 1. Prof. (Dr.) Sohan Lal Bhatt
Principal
Government Degree College
Chakrata (Dehradun) | Convener |
| 2. Dr. Ravi Sharan Dixit
Department of History
D.A.V. (P.G.) College
Dehradun | Member |
| 3. Dr. Sunil Kumar
Department of History
Government Degree College
Chakrata (Dehradun) | Member |

Sri Dev Suman Uttarakhand Vishwavidyalaya
Badshahithaul, Tehri (Garhwal)
Syllabus for Postgraduate course in History
M. A. First Semester

Paper I: Historiography- Concepts and Traditions

Paper II: Sources of Indian History

Paper III: World History (1453 A.D. to 1789 A.D.)

Paper IV: Political History of Ancient India (Harappan Period to 1206 A.D.)

M. A. Second Semester

Paper I: Political History of Great Britain (1815 A.D. to 1919 A.D.)

Paper II: Political and Cultural History of Uttarakhand

Paper III: World History (1789 A.D. to 1945 A.D.)

Paper IV: Political History of Medieval India (1206 A.D. to 1707 A.D.)

Paper V: Viva-Voce / Dissertation

M.A. Third Semester

Paper I: Social, Economic and Cultural History of India (Harappan Period to 1206 A.D.)

Paper II: Social, Economic and Cultural History of India (1206 A.D.- 1707 A.D.)

Paper III: World History (1945 A.D. to 2000 A.D.)

Paper IV (a): Ecology and Environment in History

Paper IV (b): Tourism in India

Paper IV (c): Women in Indian History

M.A. Fourth Semester

Paper I: Research Methodology

Paper II: Political History of Modern India (1707 A.D. - 1857 A.D.)

Paper III: National Movement and Constitutional Development of India
(1858 A.D.- 1950 A.D.)

Paper IV: Social, Economic and Cultural History of India (1707 A.D.- 1950 A.D.)

Paper V: Viva-Voce/ Dissertation

Note:- Each Semester will have four papers of 100 marks each; out of which 80 marks will be allotted for Semester End Examination and 20 marks will be earmarked for Sessional/Internal Assessment. The minimum marks required to pass any paper in a semester shall be 45% in theory and 45% in Sessional/Internal Assessment separately. In Semester 2nd and 4th Viva-voce/Dissertation will be fifth paper having 100 marks each.

Sri Dev Suman Uttarakhand Vishwavidyalaya
Badshahithaul, Tehri (Garhwal)
Syllabus for Postgraduate course in History

M. A. First Semester

Paper I

Historiography- Concepts and Traditions

- UNIT-I: Historiography- Concept and Trends; Meaning of History, Definition, Nature and Scope; Types of History- Political, Social, Economic etc.
- UNIT-II: History and its relationship with other disciplines- Archaeology, Geography, Sociology, Economics, Political Science, Physics, Chemistry etc.
- UNIT-III: Tradition of Historical Writings- Greek, Roman, Ancient India, Medieval and Modern India
- UNIT-IV: Historians- Banbhatt, Bilhan, Kalhan, Albaruni, Abul Fazal, Badauni

Suggested Readings

1. Carr, E.H, What is History
2. Thomson, David, The Aims of History
3. Mukherji, D.P, On Indian History
4. Thapar, Romila, The Past and the Prejudices
5. Pandey, G.C, Itihas Darshan
6. Khurana and Bansal, Itihas Lekhan, Avadharna tatha Paddhyatiya
7. Verma, L.B, Itihas Ke Baare Mein
8. Alton, G.R, The Practice of History

M. A. First Semester

Paper II

Sources of Indian History

UNIT-I: Ancient Indian History: Archaeological Sources- Inscriptions, Coins, Buildings etc. and Literary Sources- Sanskrit, Pali and Prakrit

UNIT-II: Medieval Sources- Sanskrit, Arabic, Persian and Urdu; Bhakti Literature

UNIT-III: Modern Sources- English and Vernacular Act

UNIT-IV: Modern Historians and their Writings- V. Smith, R.G. Bhandarkar, K.P. Jaiswal, R.C. Majumdar, D.D. Koshambi, Irfan Habib, Bipin Chandra, Romila Thapar

Suggested Readings

1. Toynbee Arnold, A Study of History
2. Verma, L.B, Itihas ke Baare Mein
3. Gandhi Leela, Post Colonial Theory
4. Mukherji, D.P, On Indian History
5. Thapar Romila, The Past and the Prejudices
6. Saxena, R.K, Sultanatekalin Itihas
7. Saxena, R.K, Madyakalin Itihas
8. Ali B Shaik, History: Its Theory and Methods
9. Carr, E.H, What is History

M. A. First Semester

Paper III

World History (1453 A.D. to 1789 A.D.)

UNIT-I: Factors of the Decline of Feudalism and Silent Features of Modern Europe

UNIT-II: Capitalism, Mercantilism; Renaissance and Reformation; Scientific Revolution

UNIT-III: Glorious Revolution (1688); American Revolution (1776)

UNIT-IV: French Revolution (1789)

Suggested Readings

1. Fisher, H.A.L, History of Europe
2. Langer, W.L, Diplomacy of Imperialism
3. Saboul, A, The French Revolution
4. Gupta, M.L, World History
5. Sharma, M.L, History of Europe
6. Khurana and Sharma, World History
7. Parth Sarthy, J., World History
8. Baghel, H.S, World History
9. Ketal Bey, Europe in Modern Time
10. Aggarwal, R.S, Adhunik Europe ka Itihas

M.A. First Semester

Paper IV

Political History of Ancient India (Harappan Period to 1206 A.D.)

UNIT-I: Development of Political Institutions upto Vedic Age

UNIT-II: Political Condition of North India in Sixth Century B.C.; Rise of Magadh Empire; Maurayan Dynasty- Chandra Gupta I and Asoka; Polity in Post Mauryan Period

UNIT-III: Gupta Age- Conquests and Administration; Harshwardhan- Achievements and Administration

UNIT-IV: Political Condition in Pre-medieval Age- Rajputs, Arabs, Ghaznavids and Gorids

Suggested Readings

1. Jha, D.N and Shrimali, K.N, Prachin Bharat Ka Itihas
2. Majumdar, R.C, History and Culture of the Indian People, Vol, II & III
3. Lunia, B.N, Bhartiya Sabhayta aur Sanskriti Ka Vikas
4. Sharma, L.P, Prachin Bharat
5. Bhargav, B.S, Prachin Bharat
6. Srivastava, K.C, Prachin Bharat Ka Itihas
7. Smith, V.A, Early History of India
8. Tripathi, R.S, History of Ancient India
9. Basham, A.L, The Wonder that was India
10. Ghosh, B.K, The Vedic Age

M.A. Second Semester

Paper I

Political History of Great Britain (1815 A.D. to 1919 A.D.)

UNIT-I: Castlereagh and Canning- Foreign Policy

UNIT-II: Splendid Isolation of England; Lord Palmerstone- Home and Foreign Policy

UNIT-III: Parliamentary Reforms in Britain- 1832, 1867 and 1911 Act

UNIT-IV: Robert Peel- Budgetary and Fiscal Reforms; New Terrorism- Benjamin Disraeli;
Gladstone and Irish Problem

Suggested Readings

1. Verma, R.C, History of England (1815-1939)
2. Kumar, Shiv, Jain, Saroj, England ka Itihas(1815-1919)
3. Sharma, L.P, England ka Itihas
4. Mahajan, V.D, England ka Itihas
5. Parth Sarthy, G, World History
6. Hezen, C.D, Modern Europe

M.A. Second Semester

Paper II

Political and Cultural History of Uttarakhand

UNIT-I: Sources of History of Uttarakhand

UNIT-II: Uttarakhand under Kunidas, Paurava, Katyuris, Chand and Gorkhas

UNIT-III: Society of Uttarakhand; Fairs and Pilgrims of Uttarakhand; Social Movements of Uttarakhand- Dola Palki, Gadi Sadak, Colie Begar, Char-Dham and Teerth Yatra Parampara

UNIT-IV: Art and Architecture of Uttarakhand; Folk Culture of Uttarakhand

Suggested Readings

1. Naithani, S.P, Uttarakhand ke Teerth avam Mandir
2. Chatak Govind, Madya Himalaya ki Sanskriti
3. Dabral, S.P, Uttarakhand ka Itihas, Vol. 1-17
4. Uniyal, D, Badrikedar ki Aur Haridwar
5. Raturi, H.K, Garhwal ka Itihas
6. Pandey, B.D, Kumaun ka Itihas
7. Nautiyal, S.N, Garhwal ke Lok Nirtya
8. Baludi, R.P, Uttarakhand ka Samgra Gyankosh
9. Tolia, R.S, British Kumaun-Garhwal, Vol. I & II
10. Negi, S.S, Madhya Himalaya ka Rajnitik evam Sanskritik Itihas
11. Katauch, Y.S, Uttarakand ka Naveen Itihas

M.A. Second Semester

Paper III

World History (1789 A.D. to 1945 A.D.)

- UNIT-I: Condition of Europe in 1789; French Revolution of 1789- Causes and Impact; National Assembly, National Convention and Directory in France; Rise of Napoleon Bonaparte; Vienna Congress, Concert of Europe
- UNIT-II: Opium Wars; Meiji Restoration; Unifications of Germany and Italy
- UNIT-III: Eastern Question- Crimian War, Berlin Congress, Young Turk Movement (1908) and Balkans Wars (1912-13)
- UNIT-IV: First World War; Second World War

Suggested Readings

1. Mathur and Jain, World History (1500-1950)
2. Langer, W.L, Diplomacy of Imperialism
3. Saboul, A, The French Revolution
4. Gupta, M.L, World History
5. Sharma, M.L, History of Europe
6. Khurana and Sharma, World History
7. Parth Sarthy, J., World History
8. Palmer, A History of Modern Europe

M.A. Second Semester

Paper IV

Political History of Medieval India (1206 A.D. to 1707 A.D.)

- UNIT-I: Political Condition of India during Turks' Invasion; Establishment of Delhi Sultanate- Mamluks and their Contribution; Khalji and Tughlaq Dynasty- Administration and Reforms; The Mongol Problem and North-West Frontier
- UNIT-II: Rise and Growth of Bahamani and Vijaynagar Empire
- UNIT-III: Advent of Mughals- Babar and Humayun; Shershah Suri- Administration; Akbar and his Policies; Jahangir, Shahjahan and Aurangzeb
- UNIT-IV: Rise of Maratha Power and Shivaji

Suggested Readings

1. Pandey, A.B, Purv Madyakalin Bharat
2. Verma, H.C, Madyakalin Bharat, Vol. I
3. Srivastava, A.L, Bharat ka Itihas
4. Mahajan, V.D, Medieval India
5. Sharma, L.P, Madyakalin Bharat
6. Ishwari Prasad, Medieval India
7. Khurana, K.L, Medieval India
8. Sharma, S.R, Muslim Rule in India
9. Kulshrestha, K.K, Mughal Rule in India (1526-1707)
10. Puri, Das, Chopra, Bharat ka Sanskritik evam Arthik Itihas Vol. II
11. Rai, Majumdar, Chaudhary, Bharat ka Itihas, Vol. I

M.A. Third Semester
Paper I
Social, Economic and Cultural History of India
(Harappan Period to 1206 A.D.)

- UNIT-I: Sources of Indian Economy and Culture; Structure of Society in Harappan and Vedic Period; Varna System, Ashram Vyavastha, Purusarth and Sanskara
- UNIT-II: Ancient Education System; Slavery System; Marriage and Family System, Condition of women
- UNIT-III: Culture, Society and Economy during Mauryan and Post-Mauryan Period; Literature, Religion, Art and Architecture
- UNIT-IV: Culture, Society and Economy during Gupta Period and Post- Gupta Period; Literature, Religion, Art and Architecture, Science and Technology

Suggested Readings

1. Jha, D.N and Shrimali, K.N, Prachin Bharat Ka Itihas
2. Majumdar, R.C, History and Culture of the Indian People, Vol, II & III
3. Lunia, B.N, Bhartiya Sabhayta aur Sanskriti Ka Vikas
4. Sharma, L.P, Prachin Bharat
5. Bhargav, B.S, Prachin Bharat
6. Pandey, V.C, Political and Cultural History of India
7. Majumdar, R.C, Advance History of India
8. Puri, Rai, Chopra, Bharat ka Arthik evam Sanskritik Itihas, Vol. I
9. Srivastava, K.C, Prachin Bharat ka Itihas

M.A. Third Semester

Paper II

Social, Economic and Cultural History of India (1206 A.D.- 1707 A.D.)

- UNIT-I: Society and Urbanization during Sultanate and Mughal Era; Economy and Land System in Medieval Period
- UNIT-II: Bhakti Movement: Nath Panthi, Kabir, Nanak, Dadu, Chaitanya, Tulsidas, Namdev and Meerabai; Sufism: Its origin, Concept and Practices and its impact on society
- UNIT-III: Art and Architecture, Mughal Paintings, Rajput Paintings
- UNIT-IV: Development of Literature; Persian, Hindi, Urdu, Marathi, Bengali and Sanskrit; Currency in Medieval Period

Suggested Readings

1. Pandey, A.B, Purv Madyakalin Bharat
2. Verma, H.C, Madyakalin Bharat, Vol. I
3. Srivastava, A.L, Bharat ka Itihas
4. Mahajan, V.D, Medieval India
5. Sharma, L.P, Madyakalin Bharat
6. Ishwari Prasad, Medieval India
7. Khurana, K.L, Medieval India
8. Sharma, S.R, Muslim Rule in India
9. Puri, Das, Chopra, Bharat ka Arthik evam Sanskritik Itihas
10. Rai, Majumdar, Chaudhary, Bharat ka Itihas

M.A. Third Semester

Paper III

World History (1945 A.D. to 2000 A.D.)

UNIT-I: Formation of UNO- Aims and Contribution

UNIT-II: Decolonization: Asia, Middle-East and Africa; Communist Revolution in China

UNIT-III: Cold War- Its ideologies and Impact, Disarmament; Disintegration of U.S.S.R. and abolition of Cold War

UNIT-IV: International Associations: Non-Aligned Movement, SAARC, OPEC, G-7, G-15, G-77 and European Union; India's Foreign Policy with its neighbors: China, Pakistan, Sri Lanka and Nepal

Suggested Readings

1. Carr, E.H, International Relations since 1919
2. Moon, P.T, Imperialism and World Politics since 1945
3. Palmer and Perkins, International Relations
4. Jain and Mathur, Vishwa ka Itihas
5. Hughes, H.S, Contemporary Europe
6. Chandran, S, India's Foreign Policy: Old Problems, New Challenges
7. Ganguly, Sumit, Indian Foreign Policy

M.A. Third Semester
Paper IV (a)
Ecology and Environment in History

UNIT-I: Ecology- Definition and Scope, Environment- Science or Art and its relation to other subjects

UNIT-II: Environmental Consciousness in Ancient India, Medieval India and Modern India

UNIT-III: Environmental Movements in Modern India

UNIT-IV: National Green Tribunal

Suggested Readings

1. Bharucha, I, Environmental Studies
2. Aggarwal, A, Environmentality
3. Guha, Sumit, Environment and Ethnicity in India
4. Gadgil, Madhav, and Guha, Ramachandra, The Fissured Land
5. William, P, Environmental Science

M.A. Third Semester
Paper IV (b)
Tourism in India

UNIT-I: Tourism- Concept and Definition; Its importance- Historical, Religious, Cultural and Trade

UNIT-II: Indian Culture: Features, Traditions and Customs

UNIT-III: Fairs as a source of Tourism- Kumbh, Nanda Raj-jaat Yatra

UNIT-IV: Temples and Religious Places of Uttarakhand- Badrinath, Kedarnath, Yamnotri, Gangotri, Kailash Mansarovar, Hemkund Sahib, Jageswar Dham, Piran Kaliyar, Hanol (Mahasu Devta)

Suggested Readings

1. Naithani, S.P, Uttarakhand ke Teerth avam Mandir
2. Chatak Govind, Madya Himalaya ki Sanskriti
3. Dabral, S.P, Uttarakhand ka Itihas, Vol. 1-17
4. Gupta, V.K, Tourism in India
5. Puri, Manohar, Travel and Tourism
6. Uniyal, D, Badrikedar ki Aur Haridwar
7. Bhatia, A,K, Tourism Development: Principles and Practices
8. Seth, P.N, Successful Tourism Management

M.A. Third Semester

Paper IV (c)

Women in Indian History

UNIT-I: Women's Studies and its objectives

UNIT-II: Condition of Women in Ancient and Medieval Period; Contribution of Women in Freedom Struggle

UNIT-III: Women's Organizations and Feminists Movements in Post-independence Period

UNIT-IV: Women's Contribution in Literature and Society; Legal and Constitutional rights of Women in India

Suggested Readings

1. Gandhi, M.K, Women and Social Justice
2. Srinivas, M.A, The Changing Position of Women
3. Mehta, Rama, Socio-Legal Status of Women in India
4. Tara Ali, Aog, India's Women Power
5. Kumar, Radha, The Women's Movements in India
6. Nanda, B.R, Indian Women from Parda to Modernity

M.A. Fourth Semester
Paper I
Research Methodology

UNIT-I: Research: Meaning and Objectives; Scope, History: Science or Art

UNIT-II: Significance of Research and Approaches; Types of Research and Data Analysis

UNIT-III: Objectivity in Research

UNIT-IV: Process of making synopsis, notes and appendix; New Technology: Its role in research

Suggested Readings

1. Carr, E.H, What is History
2. Thomson, David, The Aims of History
3. Thapar, Romila, The Past and the Prejudices
4. Pandey, G.C, Itihas Darshan
5. Rubin, A, Methodology for Social Work Research
6. Kothari, C.R, Research Methodology
7. Kumar Ranjit, Research Methodology
8. Ahuja, R, Research Methodology
9. Koul, Lokesh, Methodology of Educational Research

M.A. Fourth Semester

Paper II

Political History of Modern India (1707 A.D. - 1857 A.D.)

UNIT-I: Decline and Disintegration of Mughal Empire

UNIT-II: Expansion and Consolidation of British Power: Anglo-French Rivalry, Battle of Plassey and Buxer, Mysore, Awadh, Marathas and Punjab

UNIT-III: Administrative Structure under British Power; British Paramountcy and Indian States- Subsidiary Alliance, Doctrine of Lapse

UNIT-IV: Resistance to Colonial Rule: Peasant, Tribal and Revolt of 1857

Suggested Readings

1. Grover, B.L, Yashpal, Adhunik Bharat ka Itihas
2. Verma, H.C, Madyakalin Bharat, Vol. I
3. Srivastava, A.L, Bharat ka Itihas
4. Mahajan, V.D, Medieval India
5. Sharma, L.P, Madyakalin Bharat
6. Majumdar, R.C, History of Freedom Movement of India
7. Khurana, K.L, Medieval India
8. Bipin Chandra, Adhunik Bharat ka Itihas
9. Sumit Sarkar, Freedom Struggle of India
10. Majumdar R.C,(Ed) British Paramountcy and Indian Renaissance, Part II (The History and Culture of the Indian People, Volume 10)

M.A. Fourth Semester

Paper III

National Movement and Constitutional Development of India (1858.- 1950 A.D.)

- UNIT-I: Emergence of Nationalism in India; Role and Approaches of Indian National Congress and other Institutions in National Movement
- UNIT-II: Gandhian Era: Nature and Movements; Home Rule Movement, Khilafat Movement, Swaraj Party, Simmon Commission, Lahore Congress, Round Table Conferences, Communal Award, Poona Pact
- UNIT-III: Constitutional Development- 1858, 1861, 1892, 1909, 1919 and 1935 Act
- UNIT-IV: Communalism and Partition of India; Indian Independence Act (1947); Constituent Assembly: Constitution of India (1950); Its Salient Features

Suggested Readings

1. Grover, B.L, Yashpal, Adhunik Bharat ka Itihas
2. Verma, H.C, Madyakalin Bharat, Vol. I
3. Srivastava, A.L, Bharat ka Itihas
4. Mahajan, V.D, Medieval India
5. Sharma, L.P, Madyakalin Bharat
6. Majumdar, R.C, History of Freedom Movement of India
7. Khurana, K.L, Medieval India
8. Bipin Chandra, Adhunik Bharat ka Itihas
9. Sumit Sarkar, Freedom Struggle of India
10. Aggarwal, R.S, National Movement and Constitutional Development of India
11. Singh, Ayodhya, Bharat ka Mukti Sangram
12. IGNOU Course Material, EH 1.1 and EH 1.5
13. Desai, A.R, Social Background of Indian Nationalism

M.A. Fourth Semester

Paper IV

Social, Economic and Cultural History of India (1707 A.D. - 1950 A.D.)

- UNIT-I: Socio-Economic Condition in 18th Century; Socio-Religious Movements in 19th Century: Braham Samaj, Prathana Samaj, Arya Samaj, Ramkrishan Mission, Theosophical Society; Wahabi and Aligarh Movement
- UNIT-II: Drain of Wealth and Agrarian Policy of Government; Trade and Commerce: Cotton, Textile, Jute, Coal, Iron, Steel Industry; Banking System
- UNIT-III: Development of Education during British Period; Press, Judicial System
- UNIT-IV: M.K. Gandhi and Dr. B.R. Ambedkar as Social Reformer

Suggested Readings

1. Panigrahi, D.N, Economic Society and Politics in Modern India
2. Verma, H.C, Madyakalin Bharat, Vol. I
3. Srivastava, A.L, Bharat ka Itihas
4. Mahajan, V.D, Medieval India
5. Sharma, L.P, Madyakalin Bharat
6. Majumdar, R.C, History of Freedom Movement of India
7. Khurana, K.L, Medieval India
8. Bipin Chandra, Adhunik Bharat ka Itihas
9. Sumit Sarkar, Freedom Struggle of India
10. Aggarwal, R.S, National Movement and Constitutional Development of India
11. Singh, Ayodhya, Bharat ka Mukti Sangram
12. IGNOU Course Material, EH 1.1 and EH 1.5
13. Desai, A.R, Social Background of Indian Nationalism
14. Bhagwan, Vishnu, and Vidhyabhushan, Bhartiya Rashtriya Aandolan evam Samvaidhanik Vikas

**COURSE STRUCTURE
&
SYLLABUS**

**MASTER DEGREE (ARTS)
IN
HOME SCIENCE**

**WITH EFFECT FROM
JULY 2020**

**SRI DEV SUMAN UNIVERSITY
BADSHAHITHAUL
TEHRI GARHWAL
UTTARAKHAND**

Prof. (Dr.) Preeti Kumari
Dr. Pratha Buri
Dr. Preeti Sharma





STO श्रीवती अग्रवाल
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COURSE STRUCTURE

The Master of Arts (M.A.) in Home Science is full time course of Two Years. Each Year will have Two semester. Students Enrolled in M.A. Home Science Course will have to pass four semester Examination comprising of Core and Elective Courses. Each Semester will have four Theories and one practical paper. The Course break up for all the four semesters is as follows:

SEMESTER I: 4 CORE THEORY PAPER AND 1 PRACTICAL. ALL COMPULSORY.

SEMESTER II: 4 CORE THEORY PAPER AND 1 PRACTICAL. ALL COMPULSORY.

SEMESTER III: 3 CORE THEORY PAPER AND 1 PRACTICAL, and 1 ELECTIVE*
(Optional course)

- Student will have to elect any one elective course from the list of elective courses assigned for Third Semester.

SEMESTER IV: 3 CORE THEORY PAPER AND 1 PRACTICAL, and 1 ELECTIVE*
(Optional course)

- Student will have to elect any one elective course from the list of elective courses assigned for Fourth Semester.

EXAMINATION STRUCTURE:


Apart from Project Report/Dissertation and Practical, all the other courses in each semester will be evaluated on the basis of Sessional and End Term Examination. Firstly End Term Examination will be of 80 Marks. Secondly, one internal sessional assessment of the students which will be of 20 marks.

The evaluation will be made on three following basis.

End-Term Examination:

The end-term exams will be conducted at the end of every semester and will carry 80 marks. The distribution of the questions for each course in each end-term exam will be as Short Answer Type Questions and Long Answer Type Questions. There will be 7 short answer type questions out of which student will be asked to answer any four question. Each short answer type questions will carry 5 Marks. ($5 \times 4 = 20$) marks.

Same way there will be 7 Long Answer Type Questions, out of which student will be asked to answer any four question. Each Long answer type questions will carry 15 Marks. ($15 \times 4 = 60$) marks.



Internal sessional assessment:

One internal sessional assessments tests will be conducted by the department and will comprise of 20 marks. The internal sessional assessment tests will generally be conducted before the end-term examination. The Internal Evaluation will be based on classroom attendance, participation in class-room seminars and written tests.

Note Students will have to attain passing marks (40 per cent) in both end-term examination and internal sessional assessment.

1. Practical Examination:

End term practical exam will be conducted by external examiner appointed by competent authority of the university. Out of 50 marks, 30 marks practical exam will be evaluated jointly by internal and external examiner and 20 marks practical related assignment allotted during the semester will be evaluated by internal examiner.

Project Report/ Dissertation

The project report/Dissertation is an elective course and any student can opt the course. The project is to be allotted in the beginning of fourth semester and would be submitted during the examination of the Fourth Semester. Performance of student in Project report will be evaluated on the following basis.

(a) Project report/Dissertation 60 marks

(b) Viva-voce & Presentation 40 marks

Total 100 marks

Note: periodical presentation will be assessed by internal examiner but the field study project report/dissertation and vive-voce will be assessed jointly by internal and external examiner.

**COURSE OUT LINE
FIRST SEMESTER**

First Semester	Name of Course	Course Number	Marks
(July to December)	Theories of Human Development	HSC/C 101	100
	Adv. Food Science	HSC/C 102	100
	Extension Education and community Development	HSC/C 103	100
	Research Methodology in Home Science	HSC/C 104	100
	Practical		50
		Total Marks	

SECOND SEMESTER

Second Semester (January to June)	Name of Course	Course Number	Marks
	Food and Nutrition	HSC/C 201	100
	Apparel Designing	HSC/C 202	100
	Life Span Development	HSC/C 203	100
	Statistics	HSC/C 204	100
	Practical		50
		Total Marks	450

THIRD SEMESTER

Third Semester (July to December)	Name of Course	Course Number	marks
	Community Nutrition	HSC/C/301	100
	Traditional Indian Embroidery and Textiles	HSC/C/302	100
	Family housing and interior Decoration	HSC/C/303	100
	Practical		50
	Electives (Any one of the following):		100
	Consumer Education	HSC/E/304 (a)	
	Guidance and Counseling	HSC/E/304 (b)	
	Early Childhood education	HSC/E/304(C)	
		Total Marks	450

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FOURTH SEMESTER

Fourth Semester (January to June)	Name of Course	Course Number	Marks
	Food safety and preservation	HSC/C/401	100
	Dyeing and printing	HSC/C/402	100
	Children with Special Needs	HSC/C/403	100
	Practical		50
	Electives (Any one of the following)		100
	Psychological Testing and Measurement	HSC/E/404 (a)	
	Rural Sociology	HSC/E/404 (b)	
	Project Work	HSC/E/404 (C)	
		Total Marks	450

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**FIRST SEMESTER (CORE PAPER) I
THEORIES OF HUMAN DEVELOPMENT**

Course Title: **Theories of Human Development**
Course Code: HSC/(C)/101
Maximum Marks: 100
(a) End-semester Examination: 80 marks
(b) Sessional Assessment: 20 marks
(c) Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I:

Maslow's self-actualization theory
Freud's psychosexual or psychoanalytic theory
Erikson's psychosocial theory

Unit II:

Skinner's theory of operant or instrumental conditioning
Pavlov's theory of classical conditioning
Thorndike's Trial and Error Theory of learning

Unit III:

Kohlberg's six stages of moral reasoning

Unit IV:

Piaget's cognitive development theory

References:

1. Morgan, King et al (1999): "Introduction to Psychology", Tata McGraw-Hill Edition, Delhi India.
2. Hurlock E(2000): "Child Development", Tata McGraw-Hill Edition, Delhi, India.
3. Bal Vikas evam Bal Manovigyan, Brinda Singh, Panchseel Prakashan, Jaipur.



**FIRST SEMESTER (CORE PAPER) II
ADVANCED FOOD SCIENCE**

Course Title: Advanced Food Science

Course Code: HSC (C)/102

Maximum Marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I

Different food groups and their nutritive values

Beverages: Coffee, tea and Cocoa; Soft Drink; Alcoholic beverages

Unit 2

Fruits: Composition and nutritive value

Vegetables: Classification, composition, nutritive value and methods of cooking

Preserved and processed products from fruits and vegetables

Unit 3

Cereals: Breakfast cereals – Uncooked and ready to eat products; Cereal-based products – processed, fermented and baked

Pulses and legumes: Composition and processing; Toxic constituents of Pulses and Elimination of toxic factors.

Unit -4

Nuts and oilseeds: Use and processing

Fats and oils: Functions of oils and fats in food; Processing of fats

References

1. Amerine MA, Pengborn RM, Roceasier EB (1965). Principles of Sensory Evaluation and Academic Press, New York.
2. Srilakshmi, B. Food Science, 4th Edition, New Age Publishers, New Delhi
3. Food Science and Experimental Foods, M. Swaminathan, Bappco

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FIRST SEMESTER (CORE PAPER) III
EXTENSION EDUCATION AND COMMUNITY DEVELOPMENT

Course Title: **Extension Education and community Development**

Course Code: HSC/(C)/103

Maximum Marks: 100

(a) End-Semester Examination: 80 Marks.

(b) Sessional Assessment: 20 Marks

(c) Duration of End-Semester Examination: 02 Hours

Syllabus

Unit 1:

Home Science Extension Education-Definition, meaning, scope, objectives, need, importance, philosophy and principles.

Unit 2:

Extension Teaching methods-introduction, classification of extension teaching methods, Audio visual aids - Types and uses.

Unit III:

Agencies associated with extension education for rural development.
Communication – Meaning, Scope and elements of Communication.

Unit IV:

Community development - Definition, meaning, chief element, principle, objectives, philosophy, types, process, and scope of community development programmes in India.

References:

1. GrihaVigyanPrasarShiksha, ManjuPatney and U.S. Thakur, Shiva Prakashan Indore.
2. Communication for Development in the Third world theory and practices (1991). Sage Publication, New Delhi.
3. Chaubey BK (1990) A Handbook of Education Extension, Jyoti Publication, Allahabad
4. Singh, R. (1987) Text Book of Extension Sahitya Kala Prakashan, Ludhiana
5. Extension Education in Community (1961) Ministry of Food Agriculture, Government of India, New Delhi.
6. Extension programme Planning, Oxford and IBH publishing company PVT. Ltd. New Delhi.



**FIRST SEMESTER (CORE PAPER) IV
RESEARCH METHODOLOGY IN HOME SCIENCE**

Course Title: **Research Methodology in Home Science.**

Course Code: HSC/ (C/104

Maximum Marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 200 Marks

Duration of End-Semester Examination: 2:30 Hours.

Syllabus

Unit-1:

Research: Meaning, Objectives, Importance and Types of Research.
Research Process.

Unit-2:

Research problem: Definition and Identification of research problem. Selection of Problem
Hypothesis: Meaning, Characteristics, Formulation and Testing.

Unit-3:

Sources of Data: Primary and Secondary Data: Drafting of Questionnaires and Schedules; Measurement and Scaling.

Unit-4:

Use of ICT in Data Analysis. Report Writing.

Refernces

Business Research Methods, Donald R copper, McGraw Hill, New Delhi
Research Methodology, Cauvery. R, Sudhanayak U.K. Girija. M and Meenakshi. R, S. Chand & Company Ltd, New Delhi.

Research methodology: A guide for Researchers in Management and Social Sciences, Bill Taylor, GautamSinha, TaposhGhoshal, Prentice-Hall of India Private Limited, New Delhi.

Research methodology: Methods and Techniques, C.R. Kothari, New Age International, New Delhi.



**FIRST SEMESTER (CORE PAPER)
PRACTICAL**

Course Title: **Practical**

Maximum marks: 50

(a) End-Semester Examination: 30 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 3 Hours

PRACTICAL:

1. Preparation of Audio Visual Aids in Home Science Extension Management –
Chart, Poster, Folder, Flash Cards.
2. Preparation of Recipes from different Indian States.

 *Ritika*

SECOND SEMESTER (CORE PAPER) I
FOOD AND NUTRITION

Course Title: **Food and Nutrition**

Course Code: HSC/ (C)/201

Maximum Marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 Marks

Duration of End-Semester Examination : 2:30 Hours

Syllabus

Unit-1

Dietary nutrients in foods: Types, functions, requirements and sources, digestion, absorption and utilization of nutrients. Energy requirements and B.M.R.

Unit-2

Nutrition during different life cycles: Pregnancy, lactation, Infancy, pre-school old age etc.

Unit -3

National Nutrition Policy and Supplementary feeding programmes; National and International agencies in the field of nutrition.

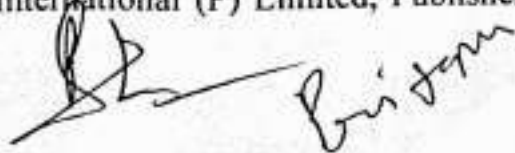
Therapeutic nutrition: Definition, importance and scope, adaption of normal diet for therapeutic purposes (soft diet, full fluid diet, bland diet etc.)

Unit-4

Etiology, causative factors, preventive measures and planning of diets in febrile conditions (acute fever, typhoid, tuberculosis), gastro-intestinal disorders (diarrhea, constipation, peptic ulcers), kidney diseases (acute and chronic nephritis), diabetes, mellitus, cardio-vascular diseases (hypertension, coronary heart diseases)

References

1. Cherley H (1982) food Science (2nd edition), John Wiley & Sons New York.
2. Gopalan C (1993) Recent Trends in Nutrition, Oxford University Press
3. Swaminathan M Essentials of foods and nutrition Vol 1 & 11: Ganesh and Co., Madras.
4. Sethi M. Malhan S (1993): Catering management: An integrated approach. Wiley eastern, New Delhi.
5. Amerine MA, Pangborn RM, Reiser EB (1965): Principles of sensory evaluation of foods: Academic Press. New York.
6. Srilakshmi B. Nutrition science New Age International (P) Limited, Publishers, New Delhi.



SECOND SEMESTER (CORE PAPER) II
APPAREL DESIGNING

Course Title: **Apparel Designing**

Course Code: HSC/ (C)/202

Maximum marks: 100

(a) End –Semester Examination: 80 Marks

(b) Sessional Assessment: 20 Marks.

Duration of End-Semester Examination: 2:30 Hours.

Syllabus

Unit-1

Principles of Design as Applied to Apparel Design
Scope and types of Design- Structural and Decorative
Elements of Arts with reference to Clothing.
Colour in relation to Apparel Designing.

Unit-2

Use of Construction features in Design Seams, Darts, Tucks, Pleats, Shirring,
Smoking.
Different types of neck lines, Collars, Yokes and Sleeves.
Renovation of Clothing.

Unit-3

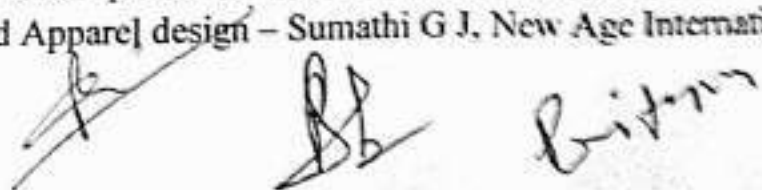
Fitting – Figure irregularities, Factors affecting good fitting.
Common problems encountered in fitting of Garments.

Unit-4

Fashion – Terminology and principles. Fashion Cycle, Factors Influencing Fashion.

References:

1. Parivarik Paridhan Vyavashtha – Sapna Henry & Manju Patni, Star Publication
2. Vastra evam Paridhan – Shashiprabha Jain and Archana Jain, Shiva Prakashan
3. Elements of Fashion and Apparel design – Sumathi G J, New Age International
Publisher



**SECOND SEMESTER (CORE PAPER) III
LIFE SPAN DEVELOPMENT**

Course Title: **Life Span Development**

Course Code: HSC/(C)/203

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I:

Adolescence – Puberty and Adolescence- Definition and Characteristics, Physical Changes during Puberty and adolescence. Problems of Adolescence, Social and Emotional development during Adolescence.

Unit II:

Early Adulthood: Characteristics, Developmental Tasks, Problems, Interests, Vocational, Marital Life and adjustment, Divorced marriage, Unmarried Life.

Unit III:

Middle and late Adulthood – Developmental Tasks of Middle and late Adulthood. Physical Changes and ageing. Family adjustments, Loss of Spouse, Health and Disease.

Unit IV:

Old Age - Characteristics, Developmental Tasks, Types of Changes during ageing , Physical, Sensory, Sexual, Health, Changes in interest, Retirement. Problems of Adjustment.

References :

1. Baal Vikas evam Baal Manovighyan- Vrinda Singh, Panchsheel Prakashan
2. Child growth and Development- Hurlock B Elizabeth (1978) , Tata Mc Graw Hill
3. Developmental Psychology - Hurlock B Elizabeth (1981) , Tata Mc Graw Hill



**SECOND SEMESTER (CORE PAPER) IV
STATISTICS IN HOME SCIENCE**

Course Title: **Statistics in Home Science**

Course Code: HSC/(C)/204

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I

Meaning and uses of statistics, classification and tabulation of data construction of frequency distribution table.

Unit II

Diagrammatic representation of data-Single dimensional diagrams (line and bar), two dimensional diagrams (Pie)

Graphical representation of data-graphs of frequency distribution (histogram, frequency polygon, frequency curve)

Unit III

Measures of central tendency – mean, median, mode Measures of dispersion-standard deviation

Unit IV

Analysis of data and writing a research report

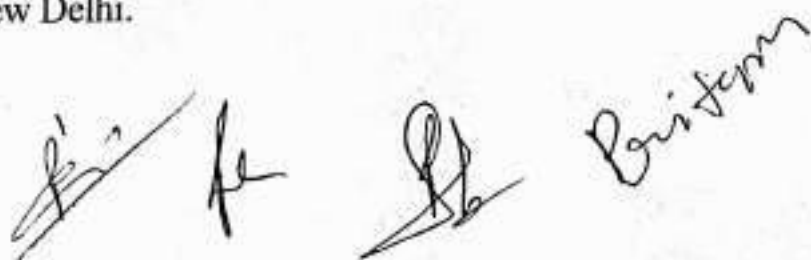
References

Gupta, S.C. (1993), Fundamentals of Applied Statistics, S. Chand & Sons, New Delhi.

Handry, A.T. (1999), Operations Research, Prentice Hall of India, New Delhi.

Speigal, M.R. (1992), Theory and Problems of Statistics, McGraw Hill Book Co., London.

Taha, H.A. (1997), Operations Research: An Introduction (6th Edition), Prentice Hall of India Pvt. Ltd. New Delhi.



**SECOND SEMESTER (CORE PAPER)
PRACTICAL**

Course Title: **Practical**

Course Code: HSC/(C)/205

Maximum marks: 50

(a) End-Semester Examination: 30 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 3 Hours

PRACTICAL

1. Construction of Pleats, Tucks, Basic Seams, Finishing of Necklines and Collars and types of Sleeves.
2. Preparing Therapeutic Diets for various diseases.

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Britannia

**THIRD SEMESTER (CORE PAPER) I
COMMUNITY NUTRITION**

Course Title: **Community Nutrition**

Course Code: HSC/(C)/301

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit-I

Prevalence, etiology, biochemical and clinical manifestation and preventive measures for; protein Calories Malnutrition-Kwashiorkor and Marasmus

Unit II

Prevalence, etiology, biochemical and clinical manifestation and preventive measures for; Iron deficiency, Iodine deficiency; Fluorine Deficiency and Toxicity

Unit III:

Prevalence, etiology, biochemical and clinical manifestation and preventive measures for Vitamin A deficiency; Beriberi, Pellagra; Scurvy; Rickets, Osteomalacia and Osteoporosis

Unit IV:

Nutritional assessment and surveillance-Meaning, need, objectives and importance
Anthropometry- need, importance, types, standards for reference
Clinical assessment - Need, Importance, Identifying signs of deficiency diseases.
Diet surveys- Need, Importance, Methods.

Reference:

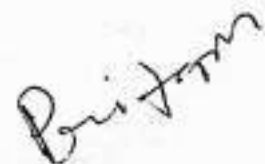
Joshi SA (1992) Nutrition & Dietetics: Tata McGraw Hill publication, New Delhi.

Sabherwal B. Meal Management, University Book House, Jaipur.

Gopalan C. (eds.) (1993) Recent Trends in Nutrition, Oxford University Press.

International Child Health: A digest of current information;

Jelliffe DE and Jelliffe EFP (1989).Community Nutritional Assessment.Oxford University Press.



**THIRD SEMESTER (CORE PAPER)II
TRADITIONAL INDIAN EMBROIDERY AND TEXTILES**

Course Title: **Traditional Indian Embroidery and Textiles**

Course Code: HSC/(C)/302

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I

Historical background of traditional Indian embroidery

General embroidery techniques; Hand embroidery-Knowledge of basic hand embroidery stitches

Unit II

Study of traditional embroideries of India: Texture, Design and colour

Chikankari of Uttar Pradesh, Kantha of Bengal, Kasuti of Karnataka, Kutch Kathiawar of Gujarat, Phulkari of Punjab, Sindhi embroidery

Unit III

Traditional Textiles of India: Texture, Design and colour

Woven (in design)-Patola, brocade, chanderi, paithani, pochampalli, ikat, maheshwari

Printed woven fabrics-Dhaka muslin, tassar, kotadoris

Printed Sanganeri, Kharhi print of Gujarat Painted-Kalamkari, Madhubani

Resist dye - Bandhej of Gujarat and Rajasthan

Unit IV

Khadi: Significance-National and economic; Revolution in Khadi

Handloom: Definition, role in national economy and some chief handloom clothes of India.

References:

ParivarikPariddhanVyavastha-Sapna Henry and ManjuPatni, Star Publications

VastraevamParidhan-Shashiprabhajain and Archana Jain, Shiva Prakashan, Indore



**THIRD SEMESTER (CORE PAPER) III
FAMILY HOUSING AND INTERIOR DECORATION**

Course Title: **Family Housing and Interior Decoration**

Course Code: HSC/(C)/303

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I

Family Housing

Needs and importance,. Different aspects- Protective, Economic, Affectional and Social aspects of family housing.

Unit II House Planning

Selection of site, Factors affecting house planning - Orientation, Room organization, Space requirements for various activities . House plans for different income groups .

Unit III

Housing Finance and Construction

House owning and renting-advantage and disadvantages factors influence cost of a house financing agency-L.I.C. Banks, housing board, Cooperative Housing societies Building Materials used in construction and finishing.

Unit IV

Furniture and Furnishing

Selection of Furniture, Principles of Furniture Arrangement, Materials used in Furniture. Factors influencing Furnishing of House.

Flower Arrangement – Meaning and Types

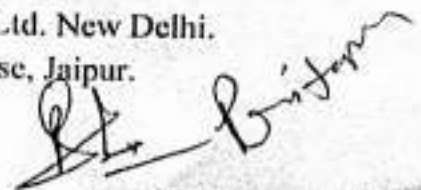
References:

Deshpande, R.S. (1943: Build your own Home, 6th ED. United Book Corporation, Poona.

Anna H. Rutt; Home furnishing, John Wiley Eastern Private Ltd. N.Y.

Gross Crandal; Management for modern families: Wiley eastern Ltd. New Delhi.

Bharthi V.V. Family resource management-University Book House, Jaipur.



**THIRD SEMESTER
PRACTICAL**

Course Title: **Practical**

Maximum marks: 50

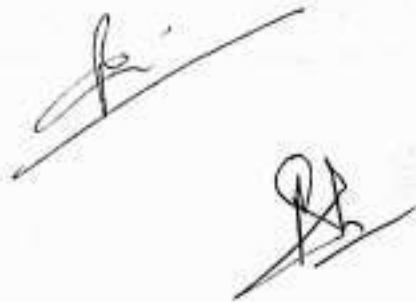
End-Semester Examination: 30 marks

(a) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 3 Hours

PRACTICAL :

1. Assessment of Nutritional Status – 24 hour Dietary Recall, Anthropometry
2. Preparation of Low Cost High Nutritive Value recipes.
3. One Article using Traditional Embroidery.



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**THIRD SEMESTER (ELECTIVE PAPER)
CONSUMER EDUCATION**

Course Title: **consumer Education**

Course Code: HSC/(E)/304 (a)

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I

Consumer-Definition, meaning, Characteristics, and types
Consumer Behavior- meaning, factors influencing, consumer and sales techniques
Steps in decision-making by the consumers

Unit II

Rights and responsibilities of the consumer problems of the Indian consumer
Consumer Protection-Meaning, definition, need, measures.

Unit III

Consumer and Law consumer welfare
Consumer protection services.

Unit IV

Introduction to tax and their kinds main taxes in India
Income Tax- meaning, Characteristics, definition and importance

References:

UnbhoktaArthshashtra, Karuna Sharma, ManjuPatni and Deepak Agarwal, Shiva Prakashan Indore
ParivarikVitEvamUpbhoktaShiksha, Karuna Sharma, Sandhya Sharma and Deepak Ararwal, Shiva Prakashan Indore.







**THIRD SEMESTER (ELECTIVE PAPER)
GUIDANCE AND COUNSELING**

Course Title: **GUIDANCE AND COUNSELING**

Course Code: HSC/ (E)/304 (b)

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

UNIT I

Guidance – Meaning, Aims, Scope, Need

Organs of guidance process

Foundations of guidance – philosophical, psychological and socio-cultural

Types – Educational, Vocational, Personal

UNIT II

Counseling – Meaning, Definition, Objectives, Need

Types of Counseling, Meaning, Characteristics, Steps, Advantages, Limitations

Relationship and difference between guidance and Counseling

UNIT III

Role of testing techniques in guidance, use of psychological tests, personality tests and aptitude

tests in guidance

Non-testing techniques in guidance – interview, observation, case-study, cumulative record, Sociometry

UNIT IV

Counselor – Qualities and Functions

Guidance and counseling during adolescence – vocational, choosing life-partner, marriage, parenthood and family life

References:

Kishore-awastha, Vivah evam Parivarik Jeevan, Alka David, Shiva Prakashan, Indore



**THIRD SEMESTER (ELECTIVE PAPER)
EARLY CHILDHOOD EDUCATION**

Course Title: Early Childhood Education

Course Code: HSC/(E)/304©

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I: Historical Perspective of early childhood education

Contribution of various thinkers (their ideology, applications and limitations)

Western: John Amos Comenius, Johann Heinrich Pestalozzi, John Lock, Friedrich Wilhelm Froebel, Jean Jacques Rousseau, Maria Montessori,

Unit II: Principles of Early Childhood Education

Objectives; need and significance; Basic principles; the Play way method; early Childhood education services in India-Government sector – ICDS, NIPCCD, NCERT etc; Voluntary Sector-ICCW, Balwadi, Mobile Creche's, ECCE centers etc.; private Sector (Nursery, Pre-Primary etc)

Unit III: Early Childhood Years (3-6 years)

Children in the Early Childhood years-Developmental Characteristics; Developmental needs; interests; Significance of First Five years of Life.

Unit IV: Play

Concept of Play; Play and Learning; Role of play in development; Play as a means of understanding children's' development; different types of play among preschool children (unoccupied behavior, onlooker, solitary independent play, parallel activity, associative play, cooperative or organized supplementary play)

Reference:

NCERT (1991), A Guide for Nursery School Teachers, NCERT, New Delhi

SethKanta, AhujaKavita (1996), Minimum specifications for pre-schools, NCERT, New Delhi.

Kohn Ruth (2003), the exploring child-A handbook for pre-primary teachers, orient Longman, Delhi.

Chowdhury D Paul (1995), Child Welfare/Development, Atma Ram & Sons. Delhi.

Certificate Course in Organizing child care services, IGNOU, (Block 1 to 6)

Grewal JS (1998), Early Childhood education-foundations and practice, Har Prasad Bhargava, Agra.



**FOURTH SEMESTER (CORE PAPER) I
FOOD SAFETY AND PRESERVATION**

Course Title: **Food Safety and Preservation**

Course Code: HSC/(C)/401

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit 1

Food Sanitation and Hygiene, Food borne diseases.

Unit 2

Food Adulteration and Consumer Protection, Food laws and Standards

Unit 3

Causes of Food Spoilage

Food preservation-Principles and Methods of Food Preservation.

Home scale methods of food preservation

Unit 4


Fortification of Foods with Vitamins and Minerals.

Novel and Processed Supplementary foods.

Enzymes in food processing

References:

1. Fundamentals of foods and nutrition, S.R. Mudambi and M.V. Rajagopal, New Age International (P) Ltd. Publishers.
A text book of Foods, Nutrition and Dietetics, M.R. Begum, Sterling Publishers Pvt. Ltd.
CherleyH(1982). Food Science (2nd edition), John Wiley & Sons, New York.



**FOURTH SEMESTER (CORE PAPER) II
DYEING AND PRINTING**

Course Title: Dyeing and Printing

Course Code: HSC/(C)/402

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I:

Dyes-Definition and classification of dyes, different types of dyes: natural dyes- Vegetable, animal and mineral; Synthetic dyes-Direct, acid, basic, reactive, vat, sulphur, mordant, disperse, pigments. Suitability of various dyes to different fibers

Unit II:

Dyeing methods at different stages of processing- fiber, yarn, piece, union and cross colour fastness characteristics- washing, sunlight, crocking, and perspiration Domestic methods of dyeing

Unit III:

Printing-Significance, methods- block, stencil screen, roller faults in printing advantages and disadvantages of different printing methods

Unit IV:

Preparation of printing paste, use of various ingredients and thickeners preparation of cloth for printing

After-treatment of printed goods

Printing of Cellulosic fabric with pigments, azoic, direct, vat and reactive dyes printing of wool and silk with acid and reactive dyes.

References:

Vastra Rachna Evam Chappai Takneek - Jain and Gupta, Shiva Prakashan, Indore.



**FOURTH SEMESTER (CORE PAPER) III
CHILDREN WITH SPECIAL NEEDS**

Course Title: Children With Special Needs

Course Code: HSC/(C)/403

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I:

Children with special needs: Definition, characteristics, classification according to types of impairment

Special education for children with special needs

Unit II:

Mental retardation: definition and levels, causes, identification, educational provisions

Gifted and creative children: definition, characteristics, special needs, identification and educational provisions

Unit III:

Visually handicapped children: Classification, identification and educational provisions

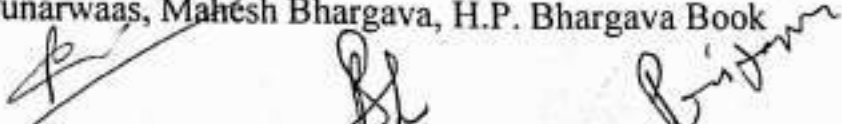
Hearing impaired: Classification, identification, causes and educational provisions

Unit IV:

Children with orthopaedic impairments: Definition, classification, causes, educational provisions and rehabilitation

Children with behaviour disorders: autism and aggressive behavior

References:

1. Bhargava M. (1994)–Introduction to Exceptional Children, Sterling Publishers, New Delhi.
 2. Kar Chintamani (1996)– Exceptional Children: Their Psychology and Education, Sterling Publishers, New Delhi. .
 3. Sahu B.K. (1993) – Education of the Exceptional Children, Kalyani Publishers, New Delhi.
 4. Vishisht Avashyakta wale bacchon ki shiksha tatha nirdeshan evam paramarsh, Vinay Rishivar, Agarwal Publications
 5. Vishisht Balak, Abha Rani Bisht and Swati Saxena, Agarwal Publications
 6. Vishesh Avakshyataon waale Bacche Part I and II, DECE-3, Bacchon ke liye sewayen evam karyakram, IGNOU
 7. Vishisht Baalak – Shiksha evam Punarwaas, Mahesh Bhargava, H.P. Bhargava Book House, Agra
- 

**FOURTH SEMESTER (CORE PAPER)
PRACTICAL**

Course Title: **Practical**

Maximum marks: 50

(a) End-Semester Examination: 30 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 3 Hours

PRACTICAL:

1. Construction of articles using different types of Printing and Dying Techniques.
2. Preparing an Educational Game or Teaching Aid for Exceptional Child.
3. A Visit to an Institution for Children with Special Need and Report Writing.
4. Home Scale Food Preservation – Preparing, Jam, Pickle, Sauce







**FOURTH SEMESTER (ELECTIVE PAPER)
PSYCHOLOGICAL TESTING AND MEASUREMENT**

Course Title: Psychological Testing and Measurement

Course Code: HSC/(E)/404(a)

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I

Introduction to psychological testing: Need, Meaning, Objectives, uses and design

Difference between Testing and Measurement

Criteria of a good psychological test - Reliability, Validity and Standardization

Unit II

Measurement of intelligence and creativity

Intelligence: meaning, types of intelligence tests; some standardized intelligence tests

Creativity: meaning, some standardized tests of creativity

Unit III

Measurement of Aptitude and Attitude

Aptitude: meaning, types of Aptitude tests

Attitude - Meaning, Attitude scales.

Unit IV

Assessment of personality Behavioral

Method of Personality Assessment

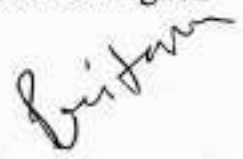
Personality inventories

Projective techniques

References:

Adhunik Manovaigyan ki Parikshan evam Maapan - Mahesh Bhargava, H.P. Bhargava
Book House, Agra

Psychological Testing - Urbina Anastasi



**FOURTH SEMESTER (ELECTIVE PAPER)
RURAL SOCIOLOGY**

Course Title: **Rural Sociology**

Course Code: HSC/ (E)/404 (b)

Maximum marks: 100

(a) End-Semester Examination: 80 marks

(b) Sessional Assessment: 20 marks

Duration of End-Semester Examination: 2:30 Hours

Syllabus

Unit I

Rural sociology: Meaning, Definition, need to study, scope and importance difference between rural and urban society

Unit II

Characteristics of rural life caste system in rural society

Unit III

Physical structure of rural society social organization of rural society

Unit IV

Rural leadership-meaning, principles of leadership, types of leaders, qualities of leader, selection of rural leader

Reference

Doshi S.L. Rural Sociology, University Book House, Jaipur

Ahuja Ram Social Problem in India University Book House, Jaipur.



**FOURTH SEMESTER (ELECTIVE PAPER)
PROJECT/DISSERTATION**

Course Title: Project/Dissertation
Course Code: **SOS/ECO (E)/404 (C)**
Maximum Marks: 100

Note: Any Student can elect the project/Dissertation as an elective paper. Student can select any relevant issues/Problems related to different fields of Home Science. The study will largely base on the collection of primary/secondary data and observation. Project/Dissertation will be carried by the student under the supervision of Student advisor (teacher of department). At the end of the study the student will submit a study Report to the Department.

Methods of Evaluation:

Performance of Student in Project work / Dissertation will be evaluated on the following three basis:

- | | |
|---|----------|
| (a) Project Report (By external and internal experts) | 60 Marks |
| (b) Viva-Voce (By External expert) | 20 Marks |
| (c) Periodical Presentation (By supervisor-internal expert) | 20 Marks |

Total: 100 Marks

Note: Name of the External expert will be decided by the University.



B. A. II YEAR (HOME SCIENCE)

PRACTICAL

- 1) Meal planning and preparation for the following:
 - a) Children
 - b) Adolescents
 - c) Adults
 - d) Old age
 - e) Pregnant women and lactating mother
- 2) Preparing meals for special occasions - like festival and birthday party.
- 3) Case profile of- (any one of the following)
 - a) Preschooler
 - b) Adolescents
 - c) Working women
 - d) Old man

SRI DEV SUMAN UTTARAKHAND UNIVERSITY



**BADSHAHITHAUL (TEHRI GARHWAL) UTTARAKHAND
AS PER NEP 2020**

U.G. SYLLABUS HOME SCIENCE FOR

**MAJOR, MINOR ELECTIVE & VOCATIONAL/SKILL
ENHANCEMENT COURSE**

**SESSION - 2022-23 (ONWARDS)
DEVELOPED BY :**

DEPARTMENT OF HOME SCIENCE

**Pt. L.M.S. SRI DEV SUMAN UTTARAKHAND UNIVERSITY
CAMPUS RISHIKESH**

SRI DEV SUMAN UTTARAKHAND UNIVERSITY



**BADSHAHITHAUL (TEHRI GARHWAL) UTTRAKHAND
AS PER NEP 2020**

SYLLABUS PREPARATION COMMITTEE

DEPARTMENT OF HOME SCIENCE

**Pt. L.M.S. SRI DEV SUMAN UTTARAKHAND UNIVERSITY
CAMPUS RISHIKESH**

S.N.	NAME	DESIGNATION	SIGNATURE
1.	Prof.(Dr.) Preeti Kumari	Prof. & Head	

Semester-wise Titles of the Papers in U.G. Programme (HOME-SCIENCE)

Year	Semester	Course Code	Paper Title	Theory/Practical	Credits
B.A-1	I	HSC/UG001 Core/Major	Food and Nutrition	THEORY	4
		HSC/UG002 Core/Major	Cooking Skills and Healthy Recipe Development	PRACTICAL	2
		HSC/UG Minor/ Elective	Human Development	THEORY	4
		HSC/UG Vocational Minor	Food Processing and Preservation	THEORY	3
	II	HSC/UG003	Introduction to Clothing and Textile	THEORY	4
		HSC/UG004	Clothing and Textile	PRACTICAL	2
		HSC/UG Minor/ Elective	Resource Management	THEORY	4
		HSC/UG Vocational Minor	Women Empowerment	THEORY	3

DETAILED SYLLABUS

B.A. I

B.A. I Semester I Home Science Food and Nutrition (Theory)

Programme/Class: Certificate	Year: 1	Semester:1
Subject: Home Science		
Course Code: HSC/UG001 Major/Core	Course Title: Food and Nutrition (Theory)	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none">● Gain Knowledge of Nutrition.● Students will get familiar with different methods of cooking● Acquaint students with practical knowledge of nutrient rich foods.		
Credits:4	Core Compulsory / Elective	
Max. Marks: 25+75	Min. Passing Marks:	
Total No. of Lectures-60		
Units	Topic	No. of Lectures
I	Food and Nutrition Food-meaning, Classification and function of Food. Basic Food Groups. Energy- Factors affecting total energy requirements of the body. Balanced Diet- Definition and Factors affecting a Balanced diet.	20
II	Nutrition-Concept of Nutrition Nutrients-Macro and Micro,(Protein, Carbohydrate, Fat, Vitamins, Minerals, Water) sources, Functions, Requirements, Digestion, absorption and deficiency diseases.	20
III	Cooking Methods - Different Methods of Cooking, Advantages and Disadvantages. Preservation of Nutrients while Cooking.	12
IV	Traditional methods of enhancing nutritional value of foods-Germination, Fermentation, Food Synergy etc.	8

Suggested Reading

- Sumati R Mudami, “Fundamentals of food Nutrition and Diet Therapy”, New Age International Pvt. Ltd, New Delhi, 6th Ed. (2018)
- Punita Sethi and Poonam Lakda, “AaharVigyan, SurakshaevamPoshan”; Elite Publishing House, New Delhi; 2015
- Dr. Anita Singh, AaharEvamPoshanVigyan, star Publication, Agra
- Dr. Devina Sahai, AaharVigyan, New Age International Publishers, New Delhi
- Suggestive digital platforms web links-ePG-Pathshala, IGNOU & UPRTOU online study material
Svayam Portal
<http://heecontent.upsdc.gov.in/Home.aspx>

This course can be opted as an elective by the students of the following subjects: Open for all
The eligibility for this paper is 10+2 with any subject

Suggested Continuous Evaluation Methods:

- Seminar / Presentation on any topic of the above syllabus
- Test with multiple choice question/ short and long answer questions

Attendance

Course prerequisites: The eligibility for this paper is 10+2 with any subject

B.A. I Semester I Home Science
Cooking skills and Healthy Recipe Development (Practical)

Programme/Class: Certificate	Year: 1	Semester:1
Subject: Home Science		
Course Code: HSC/UG002	Course Title: Cooking skills and healthy recipe development(Practical)	
Course Outcomes:		
<ul style="list-style-type: none"> ● Students will get familiar with different methods of cooking ● Acquaint students with practical knowledge of nutrient rich foods 		
Credits:2	Core Compulsory / Elective	
Max. Marks: 25+75	Min. Passing Marks:	
Total No. of Lab Periods-30(60 hours)		
Unit	Topic	No. of Lab periods /Lectures
I	Basic Cooking skills <ul style="list-style-type: none"> - Weighing of raw materials - Preparing different food items - Different styles of cutting fruits and vegetables - Salad Decoration/Dressing 	15/30
II	Preparation of nutrient rich dishes <ul style="list-style-type: none"> - Protein rich dish - Carbohydrate rich dish - Fat rich dish - Vitamins rich dish - Minerals Rich Dish - Fiber Rich Dish 	15/30

Suggested Readings:

- ❖ Sumati R Mudambi, “Fundamentals of Food Nutrition and Diet Therapy”, New Age International Pvt. Ltd. New Delhi, 6th Edition (2018)
 - ❖ Punita Sethi and Poonam Lakda, “ Aahar Vighyan, Suraksha evam Poshan”; Elite Publishing House, New Delhi; 2015
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This course can be opted as an elective by the students of the following subjects: Open for all

Suggested Continuous Evaluation Methods:

- Test with Multiple Choice question/Short and Long answer questions
 - Menu Planning and Calculation of Nutrient requirement
 - Nutritive value calculation of various nutrient rich dish
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Course Prerequisites: The eligibility for this paper is 10+2 with any subject.

Suggested equivalent online courses

IGNOU/ and other centrally/State operated Universities/ MOOC platforms such as SWAYAM in India and abroad. <http://heecontent.upsdc.gov.in/home.aspx>

Further Suggestions:

Student may develop their cooking skills with new healthy recipe development after completion of this course and even start their own food service center.

B.A. I Semester I Home Science**Human Development (Theory)**

Programme/Class: Certificate	Year: 1	Semester: 1
Subject: Home Science		
Course Code: HSC/UG Minor/Elective	Course Title: Human Development (Theory)	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none"> ● Explain the need and importance of studying human growth and development across lifespan ● Identify the biological and environmental factors affecting human development ● Learn about the characteristics, needs and developmental tasks of infancy & early childhood years 		
Credits:4	Minor / Elective	
Max. Marks: 25+75	Min. Passing Marks:	
Total No. of Lectures-60		
Units	Topic	No. of Lectures
I	Introduction to Human Development <ul style="list-style-type: none"> ● Concept, Definition and need to study Human Development ● Domains, Stages and contexts of development. Principles of Growth and Development. Determinants of Development-Heredity and Environment. 	15
II	Prenatal Development and Birth Process: <ul style="list-style-type: none"> ● Conception, Pregnancy and Childbirth, Stages of birth ● Types of delivery (Natural, C-section, breech, home vs. assisted delivery) ● Physical appearance and capacities of the new- born Factors affecting prenatal development	15
III	Infancy: <ul style="list-style-type: none"> ● Developmental task during Infancy and Preschool Stage ● Physical and Motor Development ● Social and emotional development ● Cognitive and language development 	15
IV	Early Childhood (Pre School) years: <ul style="list-style-type: none"> ● Developmental Tasks during Early Childhood ● Physical and Motor Development ● Social and emotional development ● Cognitive and language development 	15

Suggested Reading

- Dr. Brinda Singh, Manav Sharirevam Kriya Vigyan Panchcheel Prakashan, Jaipur, 2015, 15th Ed.
- Berk, L.E. Child Development New Delhi: Prentice Hall (2005) (5th ed.).
- Berk L.E. Child Development Allyn and Bacon 1992 (6th) Edition.
- Keenan, T., Evans, S., & Crowley, K. An introduction to child development, Sage (2016)
- Hurlock E. Child Development.
- Aadhunik Vikasatmak Manovigyan, Shri Vinod Pustak Mandir Agra Edition 3rd 2015
- Suggestive digital platforms web links-ePG-Pathshala, IGNOU & UPRTOU online study material Svayam Portal.

This course can be opted as an elective by the students of the following subjects: Open for all
The eligibility for this paper is 10+2 with any subject

Suggested Continuous Evaluation Methods:

- Seminar / Presentation on any topic of the above syllabus
- Test with multiple choice question/ short and long answer questions

Attendance

Course prerequisites: The eligibility for this paper is 10+2 with any subject

<http://heecontent.upsdc.gov.in/Home.aspx>

Programme/Class: Certificate		Year: 1	Semester:1
Subject: Home Science			
Course Code: HSC/UG Vocational/Minor		Course Title: Food Processing and Preservation(Theory)	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none"> ● Students will get familiar with various methods of Food Processing and Food Preservation. ● Development of the skill of preparation of various food items like jams,jellies and pickles. 			
Credits:3		Core Minor / Elective	
Max. Marks: 25+75		Min. Passing Marks:	
Total No. of Lectures-60			
Units	Topic	No. of Lectures	
I	Introduction: a. Preservation of fruits and vegetables b. Reasons for the deterioration of fruits and vegetables c. Common methods of preservation of fruits and vegetables.		
II	Canning of fruits and vegetables.		
III	Preparation: jam,jelly,murabba,toffee,fruit juices,pickle,chutney and ketchup.		
IV	a. Drying of fruits and vegetables. b. Preservation and storage at a small level.		
Suggested Reading <ul style="list-style-type: none"> - Vyavharik Fal Sabji parirakhan- Panram Arya and Padam Prakash Rastogi - Fundamentals of Foods and Nutrition, S.R. Mudambi and M.V. Rajagopal, New Age International (P) Ltd. Publishers - A Textbook of Foods, Nutrition and Dietetics, M.R. Begum, Sterling Publishers Pvt. Ltd. - Cherley H (1982). Food Science (2nd edition), John Wiley & Sons, New York - Gopalan C. (eds.) (1993) Recent Trends in Nutrition, Oxford University Press - Handbook of food and nutrition, M. Swaminathan, Bappco. 			
This course can be opted as an elective by the students of the following subjects: Open for all The eligibility for this paper is 10+2 with any subject			

Suggested Continuous Evaluation Methods:

- Seminar / Presentation on any topic of the above syllabus
- Test with multiple choice question/ short and long answer questions

Attendance

Course prerequisites: The eligibility for this paper is 10+2 with any subject

<http://heecontent.upsdc.gov.in/Home.aspx>

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**B.A. I Semester 2 Home Science
Introduction to Clothing & Textiles (Theory)**

Programme/Class: Certificate	Year: 1	Semester:2
Subject: Home Science		

Course Code: HSC/UG003 Major/Core		Course Title: Introduction to Clothing & Textiles (Theory)
Course Outcomes:		
<ul style="list-style-type: none"> ● Learn about scope of textile and clothing ● Understanding why fabrics are different ● Learn how fabrics can be manufactured ● Understand basic clothing concepts and garment making 		
Credits: 4		Core Compulsory
Max. Marks: 25+75		Min. Passing Marks:
Total No. of Lec. Periods-60		
Unit	Topic	No. of Lectures
I	Introduction a) Introduction to Clothing and Textile (b) Its importance in day-to-day life (c) Scope (d) Classification of textile fiber on the basis of their source (e) General properties of fibers-primary and secondary	15
II	Knowing Fibers- Manufacture, processing, properties and uses of (a) Cellulosic Fiber-cotton, Linen (b) Protein fibers-Wool, Silk (c) Synthetic/Manmade fibers-Nylon, Polyester, Acrylic, Rayon	15
III	Yarn to fabrics (a) Definition of Yarn, Manufacture of Yarn and Yarn Properties (b) Different fabric construction techniques (Weaving, Knitting, Felting, Braiding, Non-woven) (c) Weaving of Cloth-Terminologies and Steps in Weaving (d) Types of weaves-Basic and Decorative	15
IV	Clothing Construction (a) Tools for Clothing construction (b) Introduction to sewing machine, its parts and maintenance, (c) Importance of Drafting, Flat pattern techniques-advantages & disadvantages (d) Fabric preparatory steps for stitching a garment-preshrinking, straightening, layout, pinning, marking and cutting.	15

Suggested Readings:

- ❖ Colbmen P Bernard: Textiles Fiber To Fabric
- ❖ Hollen & Saddler: Introduction to Textile
- ❖ Joseph M: Introduction to Textiles
- ❖ Trotman: Textile Fiber Science

Cutting Tailoring and Dress Making: National open School, B-31-B Kailash Colony, New Delhi-96-3

- ❖ R Bhatia & C Arora (1999), Introduction to Clothing and Textile, Printed by Macho Printery, Raopura, Baroda.
- ❖ Complete Guide to Sewing by Reader's Digest: published by the Reader's Digest Association (Canada) Ltd. Montreal-Pleasantville, NY,2002.

This course can be opted as an elective by the students of the following subjects:
Open for all

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Suggested Continuous Evaluation Methods:

- Seminar on any topic of the above syllabus.
- **Test with multiple choice question/short and long answer questions**
- **Attendance**

Course prerequisites: To study this course, a student must have had ALL in class 12th.

Suggested equivalent online courses
IGNOU and other centrally/state operated Universities/MOOC platforms such as "SWAYAM" in India and abroad.

Further Suggestions:
Students may develop their managerial skills after completion of this course and may join any field.
As management of Resources is applicable everywhere.

At the End of the whole syllabus any remarks/suggestions:

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**B.A. I Semester 2 Home Science
Clothing & Textiles (Practical)**

Programme/Class: Certificate		Year: 1	Semester:2
Subject: Home Science			
Course Code: HSC/UG004		Course Title: Clothing & Textiles (Practical)	
Course Outcomes:			
<ul style="list-style-type: none"> ● Ability to identify fibers and fabrics ● Understanding why fabrics are different ● Learning basic sewing skills ● Learn how garments are stitched 			
Credits:2		Core Compulsory	
Max. Marks: 25+75		Min. Passing Marks:	
Total No. of lab. periods-30(60)			
Unit	Topic	No. of lab. periods	
I	Identification of fibers and fabrics (a) Fiber identification tests- Visual burning and microscopic test- natural and synthetic, pure and blended fibers.(b) Weaves identification and understanding their usage		
II	Learning to Stitch- (a) Knowing how to stitch- straight-line stitching, stitching at curves and corners (b) Basic Stitching-Temporary Stitching, Permanent and decorative stitching		
III	Basic Sewing -(a) Seams-Plain seams and its finishing, run and fell seam, French seam (b) Attaching different fasteners (c) Disposal of fullness-darts, gathers, tucks and pleats (d) Neckline Finishing-Facing & Binding		
Suggested Readings:			
<ul style="list-style-type: none"> ❖ Cutting Tailoring and Dress Making: National open School, B-31-B Kailash Colony, New Delhi-1100048 ❖ R Bhatia & C Arora (1999), Introduction to Clothing And Textile, Printed by Macho Printery, Raopura, Baroda. ❖ Complete Guide To Sewing By Reader's Digest: published by the Reader's Digest Association (Canada) Ltd. Montreal-Pleasantville, NY,2002. ❖ Helen J Armstrong, Pattern Making for Fashion Design, Prentice Hall. ❖ Gerry Cooklin, Introduction to Clothing Manufacture, Blackwell Science, UK, 1991 ❖ Metric Pattern cutting & Grading by Winfred Aldrich. ❖ Suggestive digital platform weblinks- Swayam Portal, http://heecontent.upsdc.gov.in/Home.asp 			
Suggested Continuous Evaluation Methods:			
<ul style="list-style-type: none"> ● Preparation of samples of various types on fabrics' ● Evaluation of Prepared garment 			

- Record file preparation and evaluation, Attendance

Course prerequisites: Class 12th with any subject

B.A. I

B.A. I Semester II Home Science Resource Management (Theory)

Programme/Class: Certificate	Year: 1	Semester: II
Subject: Home Science		
Course Code: HSC/UG Minor/Elective	Course Title: Resource Management (Theory)	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none">● Learn the family resource management as a whole● Understand the Decision making and use of resources throughout the Family life cycle.● Gain knowledge about Time, Money & Energy as a Resource.● Appreciate Household Equipments for work simplification		
Credits:4	Core Compulsory / Elective	
Max. Marks: 25+75	Min. Passing Marks:	
Total No. of Lectures-60		
Units	Topic	No. of Lectures
I	Introduction to Home Management: Basic Concepts, Purpose and Obstacles of Management. Process of Management –Planning, Organization, Controlling and Evaluation. Motivating Factors in Management –Values, Goals and Standards-Definition and Classification.	
II	Resources, Decision making & Family life cycle: Meaning, Characteristics, Types and Factors affecting the use of Resources. Steps and Role of decision making in management. Stages of family life cycle.	
III	Time, Energy and Money Management: Time as a Resource, Steps in making Time Plan, Tools and Aids in Time Management.	
IV	Energy as a Resource, Work Curve, Fatigue-Types, Causative Factors and alleviating techniques, Family income as a Resource, Source of Income and Expenditure and Saving. Preparation of family budget in view of family income	

Suggested Reading

- ❖ Deacon R.E. and Firebaugh F.M. (1998) Family Resource Management- Principles and application. N.Delhi: Roy Houghton Mifflin Company.
- ❖ Faulkner, R. & Faulkner, S. (1961). Management for Modern Families. N. Delhi: Sterling Publisher Ltd.
- ❖ Moorthy G. (Ed.). (1985). Home Management. N. Delhi.: Arya Publishers, Mullick, P. Text book of Home Science. Ludhiana.: Kalyani Publishers.
- ❖ Nickell, P., and Dorsey, J.M. (2002). *Management in Family Living*. New Delhi: CBS Publishers (ISBN 13: 9788123908519)
 - ❖ Patni Manju & Sharma Lalita, GrahPrabandh, Star Publication Agra

This course can be opted as an elective by the students of the following subjects: Open for all
The eligibility for this paper is 10+2 with any subject

Suggested Continuous Evaluation Methods:

- Seminar / Presentation on any topic of the above syllabus
- Test with multiple choice question/ short and long answer questions

Attendance

Course prerequisites: The eligibility for this paper is 10+2 with any subject

<http://heecontent.upsdc.gov.in/Home.aspx>

B.A. I

B.A. I Semester II Home Science Women Empowerment (Theory)

Programme /Class: Certificate	Year: 1	Semester: II
Subject: Home Science		
Course Code: HSC/UG Vocational/Minor	Course Title: Women Empowerment (Theory)	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none">● To develop insight into the general issues of women.● To understand strategies for the empowerment of women.		
Credits:3	Core Compulsory / Elective	
Max. Marks: 25+75	Min. Passing Marks:	
Total No. of Lectures-60		
Units	Topic	No. of Lectures
I	Empowerment of women: Meaning, objectives and target Areas of empowerment: Education, health, social life, economic status, communication skills, political life, cultural life, decision making and mobility	
II	Gender-based discrimination – Discrimination in social, health, economical, political and educational; Violence against women, dowry etc. Discrimination against girl child – social, nutrition, education etc Female foeticide (pre-birth and pre-conception elimination), Female infanticide	
III	Sex ratio – Definition, declining sex ratio of women and girl child – causes and consequences	
IV	Laws protecting women from violence and discrimination	

V	National Policy for Empowerment of women Programs for women	
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Suggested Reading

- Antony M. J. (1989) women's rights, New Delhi.
- Bhattacharya R. Career Management, A new Challenge Vol: 1, New Delhi.
- Chandra Shekhar © 1992 – Women's Resource & National Development A – Perspective New Delhi – (Publishing House)
- Gove. M. S. India Youth – Process of Socialization – New Delhi, 8, VishvaYuvak Kendra.
- Gupta J. L. (1988) Challenge to their Sex, Indian women's problems.

This course can be opted as an elective by the students of the following subjects: Open for all
The eligibility for this paper is 10+2 with any subject

Suggested Continuous Evaluation Methods:

- Seminar / Presentation on any topic of the above syllabus
- Test with multiple choice question/ short and long answer questions

Attendance

Course prerequisites: The eligibility for this paper is 10+2 with any subject

<http://heecontent.upsdc.gov.in/Home.aspx>

हिन्दी (वार्षिक)

श्रीदेव सुमन उत्तराखण्ड राज्य विश्वविद्यालय, बादशाहीथौल, टिहरी
गढ़वाल।

बी०ए० हिन्दी त्रिवर्षीय पाठ्यक्रम (वार्षिक प्रणाली के अंतर्गत)

(शैक्षणिक सत्र 2019-20 से प्रभावी)

(पाठ्यक्रम निर्माण समिति)

1. डॉ० अल्पना जोशी (संयोजक)
प्रोफेसर एवं विभागाध्यक्ष, हिन्दी विभाग
(पं०ल०मो०श० राजकीय स्नातकोत्तर महाविद्यालय ऋषिकेश कैम्पस कालेज)
श्रीदेव सुमन उत्तराखण्ड राज्य विश्वविद्यालय, बादशाहीथौल, टिहरी गढ़वाल।
2. डॉ० नंद किशोर ढौंडियाल (सदस्य)
प्रोफेसर—हिन्दी विभाग
(पं०ल०मो०श० राजकीय स्नातकोत्तर महाविद्यालय ऋषिकेश कैम्पस कालेज)
श्रीदेव सुमन उत्तराखण्ड राज्य विश्वविद्यालय, बादशाहीथौल, टिहरी गढ़वाल।
3. डॉ० मुक्तिनाथ यादव (सदस्य)
प्रोफेसर—हिन्दी विभाग
(पं०ल०मो०श० राजकीय स्नातकोत्तर महाविद्यालय ऋषिकेश कैम्पस कालेज)
श्रीदेव सुमन उत्तराखण्ड राज्य विश्वविद्यालय, बादशाहीथौल, टिहरी गढ़वाल।
4. डॉ० मृदुला जुगरान (बाह्य विषय विशेषज्ञ)
प्रोफेसर, हिन्दी विभाग
हे०नं०ब० केन्द्रीय विश्वविद्यालय श्रीनगर ,गढ़वाल

श्रीदेव सुमन उत्तराखण्ड राज्य विश्वविद्यालय, बादशाहीथौल, टिहरी गढ़वाल।
बी0ए0 हिन्दी त्रिवर्षीय पाठ्यक्रम (वार्षिक प्रणाली के अंतर्गत)

(शैक्षणिक सत्र 2019-20 से प्रभावी)

पाठ्यक्रम की संरचना

बी0ए0 हिन्दी(प्रथम वर्ष)

क्रम सं०	प्रश्न पत्र का नाम	कुल अंक	परीक्षा का समय
01	प्रथम: हिन्दी भाषा एवं साहित्य	100	03 घंटा
02	द्वितीय: काव्यांग एवं हिन्दी कविता	100	03 घंटा

बी0ए0 हिन्दी(द्वितीय वर्ष)

क्रम सं०	प्रश्न पत्र का नाम	कुल अंक	परीक्षा का समय
01	प्रथम: गद्य एवं नाट्य साहित्य	100	03 घंटा
02	द्वितीय- आधुनिक हिन्दी कविता	100	03 घंटा

बी0ए0 हिन्दी(तृतीय वर्ष)

क्रम सं०	प्रश्न पत्र का नाम	कुल अंक	परीक्षा का समय
01	प्रथम: प्रयोजनमूलक हिन्दी	100	03 घंटा
02	द्वितीय: जनपदीय भाषा साहित्य अथवा उत्तरांचल का हिन्दी साहित्य	100	03 घंटा

बी0ए0 प्रथम वर्ष

हिन्दी प्रथम प्रश्नपत्र

हिन्दी भाषा एवं साहित्य

इकाई 01

- हिन्दी शब्द का आशय एवं प्रयोग
- हिन्दी भाषा का उद्भव एवं विकास , हिन्दी की प्रमुख बोलियाँ
- भाषा के विविध रूप— बोली, राष्ट्रभाषा, राजभाषा, मानक भाषा आदि।

इकाई 02

- देवनागरी लिपि का नामकरण
- देवनागरी लिपि का उद्भव और विकास
- देवनागरी लिपि की वैज्ञानिकता, मानकीकरण ,देवनागरी लिपि के गुण और दोष

इकाई 03

- साहित्य शब्द की व्युत्पत्ति ,अर्थ एवं स्वरूप, काव्य के रूप— प्रबन्ध, मुक्तक
- हिन्दी गद्य की विविध विधाएं : (सामान्य परिचय एवं उनके तत्त्व)
उपन्यास, कहानी, निबन्ध
- नाटक, एकांकी, नाटक और एकांकी में अंतर

इकाई 04

- रेखाचित्र, संस्मरण,
- आत्मकथा, डायरी, रिपोर्टाज, यात्रा वृत्तांत, जीवनी , साक्षात्कार।

अंक—विभाजन

दस वस्तुनिष्ठ प्रश्न: 10 अंक (प्रत्येक 01 अंक)

पांच लघुउत्तरीय प्रश्न: 30 अंक (सात में से पांच प्रश्न, प्रत्येक 06 अंक)

तीन दीर्घउत्तरीय प्रश्न:60 अंक (छह में से तीन प्रश्न, प्रत्येक 20अंक)

संदर्भ ग्रंथ

1. हिन्दी भाषा – भोलानाथ तिवारी
2. हिन्दी भाषा का इतिहास – धीरेन्द्र वर्मा
3. हिन्दी भाषा– हरदेव बाहरी
4. लिपि की कहानी– गुणाकर मूले
5. हिन्दी भाषा अतीत से आजतक– विजय अग्रवाल
6. साहित्य सहचर – हजारीप्रसाद द्विवेदी
7. साहित्य का स्वरूप – नित्यानंद तिवारी
8. काव्य के रूप – बाबू गुलाब राय
9. साहित्य और समीक्षा– बाबू गुलाब राय
10. साहित्य विधाएं – शशिभूषण सिंघल

बी0ए0 प्रथम वर्ष

हिन्दी द्वितीय प्रश्नपत्र

काव्यांग एवं हिन्दी कविता (आदिकाल से शैली काल)

इकाई 01

- रस परिचय , रस के अंग व भेद , अलंकार परिचय, शब्दालंकार – अनुप्रास, यमक,श्लेष
- अर्थालंकार– उपमा,रूपक, उत्प्रेक्षा
- छंद परिचय, मात्रिक छंद– दोहा, सोरठा, चौपाई, हरिगीतिका, कुंडलिया,
- शब्द शक्ति– अभिधा, लक्षणा, व्यंजना

इकाई 02

पृथ्वीराज रासो (पद्मावती समय) प्रारंभ के पांच पद

अमीर खुसरौ – जेहाल मिस्की मकुन तगाफुल....., खुसरौ दरिया प्रेम का, खुसरौ रैन सुहाग की।

इकाई 03. कबीर ग्रंथावली – सं० रामकिशोर वर्मा – गुरुदेव को अंग– दोहा सं० 03,06,08 सुमिरण को अंग 09, 23 विरह को अंग 01,03,06 परचा को अंग 03,04,07

जायसी– पद्मावत (मानसरोदक खण्ड)

सूरदास – भ्रमरगीत सार (सं० रामचंद्र शुक्ल) पद सं० 06,07,13,23,25

तुलसीदास– कवितावली – 01– अवधेश के द्वारे सकारे गई..... 02. कबहूं शशि मांगत..... 03.

पुरते निकसी रघुवीर बधु04.बालधी विसाल विकराल..... 05. खेती न किसान।

इकाई 04

बिहारी – बिहारी रत्नाकर (सं०) जगन्नाथ दास रत्नाकर दोहा सं० 01, 03, 05, 13,22,32

भूषण – 01. इन्द्र जिमि जम्भ पर02 साजि चतुरंग सेन...03. ऊंचे घोर मंदर के अंदर

अंक–विभाजन

दस वस्तुनिष्ठ प्रश्न: 10 अंक (प्रत्येक 01 अंक)

पांच लघुउत्तरीय प्रश्न: 30 अंक (सात में से पांच प्रश्न प्रत्येक 06 अंक)

दो दीर्घउत्तरीय प्रश्न: 40 अंक (चार में से दो प्रश्न, प्रत्येक 20 अंक)

दो व्याख्या 20 अंक(चार में से दो व्याख्या ,प्रत्येक 10 अंक)

संदर्भ ग्रंथ

1. काव्यांग परिचय – मानवेन्द्र पाठक
2. काव्य के तत्त्व– देवेन्द्र नाथ शर्मा
3. शब्द शक्ति, रस एवं अलंकार – तारा चंद्र शर्मा
4. त्रिवेणी–आ० रामचन्द्र शुक्ल, नागरी प्रचारिणी सभा, काशी।
5. 5. पृथ्वीराज रासो – डॉ० नामवर सिंह
6. कबीर – हजारी प्रसाद द्विवेदी.
7. हिन्दी साहित्य का अतीत (भाग 1. 2.) आ० विश्वनाथ प्रसाद मिश्र
8. मध्यकालीन बोध का स्वरूप– डॉ० हजारी प्रसाद द्विवेदी
9. जायसी: एक नयी दृष्टि– डॉ० रघुवंश

बी0ए0 द्वितीय वर्ष
हिन्दी प्रथम प्रश्नपत्र
गद्य एवं नाट्य साहित्य

इकाई 01 उपन्यास—त्यागपत्र— जैनेन्द्र

कहानी संग्रह— ग्यारह कहानियाँ, सं०—प्रो० हरिमोहन

इकाई 02 हिन्दी निबंध एवं स्फुट गद्य विधारं (सं० आशा जुगरान)

- साहित्य जन समूह के हृदय का विकास है— बालकृष्ण भट्ट
- क्रोध — रामचंद्र शुक्ल
- कबीर और गांधी — पीतांबर दत्त बड़थवाल
- आम फिर बौरा गये — हजारी प्रसाद द्विवेदी
- निंदा रस— हरिशंकर परसाई
- रेखाचित्र —लछमा — महादेवी वर्मा
- यात्रासंस्मरण— सुनहरे त्रिकोण में तेरह दिन — हरिमोहन

इकाई 03. नाटक — ध्रुवस्वामिनी — जयशंकर प्रसाद

इकाई 04 चार एकांकी — सं० देव सिंह पोखरिया

दीपदान, सूखी डाली, बसंत ऋतु का नाटक और ऊसर

अंक—विभाजन

दस वस्तुनिष्ठ प्रश्न: 10 अंक (प्रत्येक 01 अंक)

पांच लघुउत्तरीय प्रश्न: 30 अंक (सात में से पांच प्रश्न प्रत्येक 06 अंक)

दो दीर्घउत्तरीय प्रश्न: 40 अंक (चार में से दो प्रश्न, प्रत्येक 20 अंक)

दो व्याख्या 20 अंक(चार में से दो व्याख्या ,प्रत्येक 10 अंक)

संदर्भ ग्रंथ

1. उपन्यासकार जैनेन्द्र: मूल्यांकन और मूल्यांकन—डॉ मनमोहन सहगल
2. जैनेन्द्र के उपन्यास : मर्म की तलाश, चंद्रकांत वादिबडेकर
3. कहानी, नई कहानी—डॉ नामवर सिंह
4. हिन्दी कहानी: पहचान और परख— डॉ इन्द्रनाथ मदान
5. हिन्दी कहानी का तीसरा आयाम— डॉ बटरोही
6. उपन्यास का पुनर्जन्म—डॉ परमानन्द श्रीवास्तव
7. हिंदी नाटक — बच्चन सिंह
8. रंग दर्शन — नेमिचन्द्र जैन
9. जयशंकर प्रसाद के नाटकों का शास्त्रीय अध्ययन — जगन्नाथ शर्मा
10. नाटक के रंगमंचीय प्रतिमान — वशिष्ठ नारायण त्रिपाठी
11. हिंदी नाट्यशास्त्र का स्वरूप — डॉ० नर्वदेश्वर राय

बी०ए० द्वितीय वर्ष

हिन्दी द्वितीय प्रश्नपत्र

आधुनिक हिन्दी कविता

इकाई 01. आधुनिक हिन्दी कविता का प्रवृत्तिगत इतिहास

इकाई 02. सरोज स्मृति – सूर्यकांत त्रिपाठी निराला

इकाई 03. आंसू के अंश. कामायनी–लज्जा सर्ग –जयशंकर प्रसाद

नौका विहार, प्रथम रश्मि, परिवर्तन–सुमित्रानंदन पंत

चन्द्रकुंवर बर्तवाल– मेघनदिनी, हेमंतप्रात, कालनागिनी, जीतू, काफल पाककू

इकाई 04. यह दीप अकेला, कलगी बाजरे की , नदी के द्वीप, सांप–अज्ञेय

टिहरी वर्णन, फिरंगी वर्णन से दस छंद – गुमानी

वीरों का कैसा हो बसंत, झांसी की रानी – सुभद्राकुमारी चौहान

अंतर्देशीय , पेड़ की आजादी – लीलाघर जगूड़ी

पाठ्यपुस्तक : अर्वाचीन हिन्दी काव्य (सं० डॉ० मृदुला जुगरान, हे०न०ब०ग०वि०वि० प्रकाशन)

अंक–विभाजन

दस वस्तुनिष्ठ प्रश्न: 10 अंक (प्रत्येक 01 अंक)

पांच लघुउत्तरीय प्रश्न: 30 अंक (सात में से पांच प्रश्न प्रत्येक 06 अंक)

दो दीर्घउत्तरीय प्रश्न: 40 अंक (चार में से दो प्रश्न, प्रत्येक 20 अंक)

दो व्याख्या 20 अंक(चार में से दो व्याख्या ,प्रत्येक 10 अंक)

सन्दर्भ ग्रंथ

1. छायावाद– नामवर सिंह
2. आधुनिक कविता यात्रा – रामस्वरूप द्विवेदी
3. हिन्दी के आधुनिक कवि–द्वारिका प्रसाद सक्सेना
4. समकालीन हिन्दी कविता–विश्वनाथ प्रसाद तिवारी

बी0ए0 तृतीय वर्ष
हिन्दी प्रथम प्रश्नपत्र
प्रश्न पत्र-1 प्रयोजनमूलक हिन्दी

इकाई 01 प्रयोजनमूलक हिन्दी का अभिप्राय।

कामकाजी हिन्दी के विविध रूप, संपर्क भाषा, माध्यम भाषा, राजभाषा, बोलचाल की हिन्दी, मानक हिन्दी, साहित्यिक हिन्दी, संविधान में हिन्दी।

इकाई 02 पत्राचार-कार्यालयी पत्र, व्यवसायिक पत्र। संक्षेपण, पल्लवन, प्रारूपण, टिप्पण।

भाषा कम्प्यूटिंग- वर्ड प्रोसेसिंग, डाटा प्रोसेसिंग और फॉन्ट प्रबंधन।

पत्रकारिता-पत्रकारिता का स्वरूप और वर्तमान परिदृश्य, समाचार-लेखन, पृष्ठसज्जा एवं प्रस्तुतीकरण पृष्ठविन्यास।

इकाई 03 संपादनकला- प्रिंट मीडिया, इलैक्ट्रॉनिक मीडिया, फीचर लेखन, पृष्ठसज्जा एवं प्रस्तुतीकरण।

इकाई 04 मीडिया लेखन- संचार भाषा का स्वरूप और वर्तमान संचार व्यवस्था।

प्रमुख जनसंचार माध्यम- प्रेस, रेडियो, टी0वी0, फिल्म, वीडियो तथा इन्टरनेट।

माध्यमोपयोगी लेखन-प्रविधि।

अनुवाद- स्वरूप एवं प्रक्रिया, कार्यालयी अनुवाद, वैज्ञानिक अनुवाद, तकनीकी अनुवाद, वाणिज्यिक अनुवाद, विधिक अनुवाद, पारिभाषिक शब्दावली, आशु अनुवाद।

अंक-विभाजन

दस वस्तुनिष्ठ प्रश्न: 10 अंक (प्रत्येक 01 अंक)

पांच लघुउत्तरीय प्रश्न: 30 अंक (सात में से पांच प्रश्न, प्रत्येक 06 अंक)

तीन दीर्घउत्तरीय प्रश्न: 60 अंक (छह में से तीन प्रश्न, प्रत्येक 20अंक)

सन्दर्भ ग्रंथ

1. हिन्दी कार्मिक प्रयोजनमूलक हिन्दी, डॉ. शंकर 'क्षेम' एवं डॉ. कंचन शर्मा, प्रकाश बुक डिपो बरेली,
2. प्रयोजनमूलक हिन्दी, विनोद गोदरे, वाणी प्रकाशन, दरियागंज, नई दिल्ली,
3. प्रयोजनमूलक हिन्दी : सिद्धान्त और प्रयोग, दंगल झाल्टे, वाणी प्रकाशन, नई दिल्ली,

4 प्रयोगात्मक एवं प्रयोजनमूलक हिन्दी, डॉ. रामप्रकाश, राधाकृष्ण प्रकाशन, दरियागंज, नई दिल्ली,

5 प्रारूपण, टिप्पण और प्रूफपठन, डॉ. भोलानाथ तिवारी, वाणी प्रकाशन, नई दिल्ली,

6. कामकाजी हिन्दी, डॉ. कैलाशचन्द्र भाटिया, दिल्ली,

7. कम्प्यूटर और हिन्दी, डॉ. हरिमोहन तक्षशिला प्रकाशन, नई दिल्ली,

8. कम्प्यूटर के प्रोगाम तथा सिद्धान्त, डॉ. जोखनसिंह, मध्यप्रदेश हिन्दी ग्रंथ अकादमी, रविन्द्रनाथ ठाकुर मार्ग, भोपाल-3,

9. पर्सनल कम्प्यूटर, संतोष चौबे, मध्यप्रदेश हिन्दी ग्रंथ अकादमी, भोपाल,

10. समाचार, फीचर-लेखन एवं सम्पादन कला प्रूफपठन, डॉ. हरिमोहन, तक्षशिला प्रकाशन कला प्रूफपठन, डॉ. हरिमोहन, तक्षशिला प्रकाशन,, नई दिल्ली-2,

11. हिन्दी पत्रकारिताएं की दिशाएं, जोगेन्द्र सिंह, सुरेन्द्र कुमार एण्ड संज, 30/21ए-गली नं. 9 विश्वासनगर, शाहदरा, दिल्ली-32,

12. सूचना प्रौद्योगिकी और माध्यम, डॉ. हरिमोहन, तक्षशिला प्रकाशन,, नई दिल्ली,

वी0ए0 तृतीय वर्ष
हिन्दी द्वितीय प्रश्नपत्र
जनपदीय भाषा साहित्य
विकल्प-अ

पाठ्यविषय-

इकाई 01- गढ़वाली तथा कुमाउँनी का उद्भव और विकास।

इकाई 02- गढ़वाली तथा कुमाउँनी में रचित शिष्ट साहित्य का संक्षिप्त इतिहास।

इकाई 03 (क)-गढ़वाली रचनाकार-

1. तारादत्त गैरोला- सदेई गीत, 2. तोताकृष्ण गैरोला- प्रेमी पथिक -पूर्वार्द्ध के केवल 24 छंद, 3. जीवानन्द श्रीयाल-डाली माटी, जागृति, 4. अबोधबंधु बहुगुणा-भूम्याल (औल)।

(ख) कुमाउँनी रचनाकार-

1. गौर्दा, 2. शेरदा 'अनपढ़', 3. चारुचन्द्र पाण्डेय, 4. देवकी महारा

इकाई 04 1. डॉ. महावीर प्रसाद गैरोला- 'कपाल की छमोट' से दो कविताएं, 2. मोहनलाल नेगी की कहानी-न्यौं निवास, 3. गिरदा की रचना- उत्तराखण्ड काव्य के 15 छंद 4. चन्द्रलाल वर्मा 'घौंघरी'- 'प्यास' की भूमिका।
संग्रह का सम्पादन- डॉ. शेरसिंह बिष्ट तथा डॉ. सुरेन्द्र जोशी
संग्रह का नाम- जनपदीय भाषा-साहित्य, अंकित प्रकाशन।

अंक-विभाजन

दस वस्तुनिष्ठ प्रश्न: 10 अंक (प्रत्येक 01 अंक)

पांच लघुउत्तरीय प्रश्न: 30 अंक (सात में से पांच प्रश्न प्रत्येक 06 अंक)

दो दीर्घउत्तरीय प्रश्न: 40 अंक (चार में से दो प्रश्न, प्रत्येक 20 अंक)

दो व्याख्या 20 अंक(चार में से दो व्याख्या ,प्रत्येक 10 अंक)

संदर्भग्रंथ—

1. गढ़वाली भाषा और उसका साहित्य, डॉ. हरिदत्त भट्ट, शैलेन्द्र, हिन्दी समिति, उ.प्र. शासन, लखनऊ
2. मध्य पहाड़ी का भाषाशास्त्रीय अध्ययन, डॉ. गोविन्द चातक, नई दिल्ली,
3. गढ़वाल में हिन्दी साहित्य का उद्भव और विकास, डॉ. ब्रह्मदेव शर्मा, राजस्थानी ग्रंथागार, जोधपुर,
4. कुमाऊँनी भाषा और उसका साहित्य, डॉ. त्रिलोचन पाण्डे, हिन्दी समिति, उ.प्र. शासन, लखनऊ,
5. कुमाऊँनी भाषा और संस्कृति, डॉ. केशवदत्त रूवाली, ग्रंथायन, अलीगढ़,
6. कुमाऊँनी भाषा, साहित्य और संस्कृति, डॉ. देवसिंह पोखरिया, श्री अल्मोड़ा बुक डिपो अल्मोड़ा,
7. हिन्दी साहित्य को कूर्माचल की देन, डॉ. भगतसिंह, नैशनल पब्लिशिंग हाउस, नई दिल्ली,
8. उत्तराखण्ड की संत परम्परा, डॉ. गिरिराज शाह, उत्तराखण्ड शोध संस्थान कुरीस रोड़, अलीगंज, लखनऊ।

बी०ए० तृतीय वर्ष
हिन्दी द्वितीय प्रश्नपत्र

उत्तरांचल का हिन्दी साहित्य
विकल्प -ब

इकाई 01. उपन्यास- जहाज का पंछी (छात्र संस्करण) इलाचन्द जोशी, लोकभारती प्रकाशन, 15-ए, महात्मा गाँधी मार्ग, इलाहाबाद।

इकाई 02. नाटक-बाँसुरी बजती रही, गोविन्द चातक, तक्षशिला प्रकाशन, 23/4762 अंसारी रोड़, नई दिल्ली-2।

इकाई 03 . प्रबंधकाव्य-अग्निसागर, डॉ. श्यामसिंह 'शशि', किताबघर प्रकाशन, 24 अंसारी रोड़, नई दिल्ली-2।

यात्रावृत्तांत- पत्थर और पानी, नेत्रसिंह रावत, संभावना प्रकाशन, रेलवे रोड़ हापुड़।

इकाई 04 रचनाकार-1.1 कहानी-हरिदत्त भट्ट 'शैलेश' सुभाष पंत सुरेश उनियाल, धीरेन्द्र अस्थाना। 1-1 कविता-रत्नांबर दत्त चंदोला, पार्थसारथि डबराल, चारुचन्द्र चंदोला, मंगलेश डबराल। 1-1 निबंध-डॉ. शिवानन्द नौटियाल, यमुनादत्त वैष्णव 'अशोक'।

पाठ्यपुस्तक उत्तरांचल का हिन्दी साहित्य (सं० डॉ० मंजुला राणा, अंकित प्रकाशन)

अंक-विभाजन

दस वस्तुनिष्ठ प्रश्न: 10 अंक (प्रत्येक 01 अंक)

पांच लघुउत्तरीय प्रश्न: 30 अंक (सात में से पांच प्रश्न प्रत्येक 06 अंक)

दो दीर्घउत्तरीय प्रश्न: 40 अंक (चार में से दो प्रश्न, प्रत्येक 20 अंक)

दो व्याख्या 20 अंक(चार में से दो व्याख्या ,प्रत्येक 10 अंक)

संदर्भ ग्रंथ-

- 1 गढ़वाली भाषा और उसका साहित्य, डॉ. हरिदत्त भट्ट शैलेन्द्र, हिन्दी समिति, उ.प्र. शासन, लखनऊ,
- 2.मध्य पहाड़ी का भाषाशास्त्रीय अध्ययन, डॉ. गोविन्द चातक, नई दिल्ली,
3. हिन्दी साहित्य को कूर्मांचल की देन, डॉ० भगतसिंह, नैशनल पब्लिशिंग हाउस, नई दिल्ली।
- 4.कुमाऊनी भाषा और साहित्य , डॉ० त्रिलोचन पाण्डेय
1. हिन्दी साहित्य को कूर्मांचल की देन , डॉ० भगत सिंह

एम0ए0 हिन्दी स्नातकोत्तर पाठ्यक्रम
श्रीदेव सुमन उत्तराखण्ड राज्य विश्वविद्यालय, बादशाहीथौल, टिहरी गढ़वाल।

प्रथम वर्ष (प्रथम सत्र)

- पहला प्रश्न पत्र – हिन्दी साहित्य का इतिहास (आरम्भ से रीतिकाल तक)
दूसरा प्रश्न पत्र – आदिकालीन एवं निर्गुण काव्य
तीसरा प्रश्न पत्र – मध्यकालीन सगुण एवं रीतिकालीन काव्य
चौथा प्रश्न पत्र – हिन्दी साहित्य का इतिहास (भारतेन्दु युग से अब तक)

द्वितीय सत्र

- पांचवा प्रश्न पत्र – भारतीय काव्य शास्त्र एवं हिन्दी आलोचना
छठवां प्रश्न पत्र – आधुनिक गद्य (निबन्ध, नाटक एवं अन्य गद्य विधाएँ)
सातवां प्रश्न पत्र – उपन्यास एवं कथा साहित्य
आठवां प्रश्न पत्र – पाश्चात्य काव्य शास्त्र
नौवां प्रश्न पत्र – आधुनिक काव्य (भारतेन्दु युग से उत्तर छायावाद तक)

द्वितीय वर्ष (तृतीय सत्र)

- दसवां प्रश्न पत्र – भाषा विज्ञान एवं हिन्दी भाषा
ग्यारहवां प्रश्न पत्र – आधुनिक काव्य (छायावादोत्तर हिन्दी कविता)
बारहवां प्रश्न पत्र – (विकल्प) (क) लघु शोध प्रबन्ध
(ख) भारतीय साहित्य
(ग) जयशंकर प्रसाद
(घ) चंद्रकुंवर बर्तवाल
तेरहवां प्रश्न पत्र – (विकल्प) (क) सूरदास
(ख) तुलसीदास
(ग) हिन्दी नाटक और रंगमंच
(घ) प्रेमचन्द

चतुर्थ सत्र

- चौदहवां प्रश्न पत्र – भाषा विज्ञान और हिन्दी भाषा
पन्द्रहवां प्रश्न पत्र – प्रयोजन मूलक हिन्दी और मीडिया लेखन
सोलहवां प्रश्न पत्र – (विकल्प) (क) संस्कृत
(ख) गढ़वाली लोक साहित्य
(ग) अनुवाद : सिद्धान्त और प्रयोग
सत्रहवां प्रश्न पत्र – (विकल्प) (क) जनपदीय भाषा साहित्य (गढ़वाली भाषा साहित्य)
(ख) हिन्दी आलोचना साहित्य
(ग) अनुसंधान : प्रविधि और प्रक्रिया
अठ्ठारहवां प्रश्न पत्र – मौखिकी

प्रथम वर्ष (प्रथम सत्र)

पहला प्रश्न पत्र – हिन्दी साहित्य का इतिहास (आरम्भ से रीतिकाल तक)

इकाई 01 –

- इतिहास दर्शन और साहित्येतिहास, हिन्दी साहित्य के इतिहास लेखन की परम्परा एवं प्रविधि, काल विभाजन एवं नामकरण।
- आदिकाल – आदिकालीन साहित्य की पृष्ठभूमि, नामकरण, सिद्ध, नाथ, जैन और रासो काव्य की प्रमुख साहित्यिक विशेषतायें।

इकाई 02 –

- मध्ययुगीन बोध का स्वरूप, भक्ति आंदोलन, हिन्दी साहित्य के मध्यकाल के सन्दर्भ में रामचन्द्र शुक्ल, हजारी प्रसाद द्विवेदी और रामविलास शर्मा का चिन्तन।
- प्रमुख निर्गुण मार्गी सन्त कवि और उनकी काव्यगत विशेषतायें, भारतीय संस्कृति पर प्रभाव तथा भारत में सूफी मत का विकास, प्रमुख सूफी कवि और काव्य ग्रन्थ, सूफी काव्य में भारतीय संस्कृति एवं लोक जीवन के तत्व।

इकाई 03 –

- रामभक्ति शाखा एवं कृष्ण भक्ति शाखा के प्रमुख कवि एवं काव्य, रामभक्ति शाखा एवं कृष्ण भक्ति शाखा का भारतीय संस्कृति में योगदान व उनकी सामाजिक-दार्शनिक पृष्ठभूमि।

इकाई 04 –

- उत्तर मध्यकाल (रीतिकाल) की ऐतिहासिक-सामाजिक पृष्ठभूमि, काल सीमा और नामकरण, दरबार लोक और सम्प्रदाय।
- रीतिकालीन साहित्य की प्रमुख काव्य धाराएं – रीतिबद्ध, रीतिसिद्ध, रीतिमुक्त काव्य और वीर तथा नीतिपरक काव्य। प्रमुख कवि, काव्य और काव्यगत विशेषतायें।

सन्दर्भ ग्रन्थ –

1. हिन्दी साहित्य का इतिहास – रामचन्द्र शुक्ल।
2. हिन्दी साहित्य का आदिकाल – हजारी प्रसाद द्विवेदी।
3. हिन्दी साहित्य की भूमिका – हजारी प्रसाद द्विवेदी।
4. हिन्दी साहित्य का उद्भव और विकास – हजारी प्रसाद द्विवेदी।
5. हिन्दी साहित्य का अतीत भाग –1,2 – भगीरथ मिश्र।
6. साहित्य और इतिहास दृष्टि – मैनेजर पाण्डे।
7. हिन्दी साहित्य का इतिहास – डॉ० नगेन्द्र।
8. हिन्दी साहित्य का दूसरा इतिहास – बच्चन सिंह।
9. हिन्दी साहित्य और संवेदना का इतिहास – रामस्वरूप चतुर्वेदी।
10. मध्यकालीन बोध का स्वरूप – हजारी प्रसाद द्विवेदी।

दूसरा प्रश्न पत्र – आदिकालीन एवं निर्गुण काव्य

इकाई 01 –

- पृथ्वीराज रासो (पदमावती समय) प्रारम्भ के पन्द्रह पद।
- विद्यापति पदावली सं० रामवृक्ष बेनीपुरी, प्रारम्भ के पच्चीस पद।

इकाई 02 –

- कबीरदास, कबीर ग्रन्थावली सं० श्यामसुन्दर दास। गुरुदेव को अंग – 3,6,12,17,20। विरह को अंग – 1,3,6,11,12। परचा को अंग – 4,7,8,12,14। पद संख्या – 2,10,11,15,16,19,27,40,43,44।
- जायसी – पदमावत सं० रामचन्द्र शुक्ल, नागमती वियोग वर्णन खण्ड।

इकाई 03 –

- रैदास, रैदास ग्रन्थावली। प्रारम्भ के बीस दोहे।
- रहीम, रहीम ग्रन्थावली, सं० विद्यानिवास मिश्र। दोहा संख्या – 8,9,15,20,33,46,47,49,57,68,75,93,96,105,140।

इकाई 04 –

- उपरोक्त कवियों से सम्बन्धित आलोचनात्मक प्रश्न।

सन्दर्भ ग्रन्थ –

1. त्रिवेणी – रामचन्द्र शुक्ल।
2. पृथ्वीराज रासो : भाषा और साहित्य – नामवर सिंह।
3. विद्यापति – शिवप्रसाद सिंह।
4. जायसी – विजयदेव नारायण साही।
5. जायसी एक नई दृष्टि – रघुवशं।
6. सूफीमत और हिन्दी सूफी काव्य – नरेश।

तीसरा प्रश्न पत्र – मध्यकालीन सगुण एवं रीतिकालीन काव्य

इकाई 01 –

- सूरदास, भ्रमरगीत सार, सं० रामचन्द्र शुक्ल, व्याख्या के लिए पद संख्या 50 से 100 तक।
- तुलसीदास, रामचरितमानस (सुन्दर कांड), 01 से 50 तक के दोहे व चौपाइयां।

इकाई 02 –

- बिहारी, बिहारी रत्नाकर, सं० जगन्नाथ दास रत्नाकर (व्याख्या के लिए प्रारम्भ के 25 दोहे)।
- घनानन्द कवित्त, सं० आचार्य विश्वनाथ प्रसाद मिश्र (व्याख्या हेतु आरम्भ के 20 छन्द)।

इकाई 03 –

- पदमाकर (जगत विनोद), व्याख्या हेतु पद
 1. सुंदर सुरंग नैन सोभित अनंग रंग
 2. झांकति है झरोखे लगी लग लागीबे
 3. ए ब्रजचंद चलौ किन वा लूकें
 4. वा अनुराग की फाग लखौ
 5. एक संग धाये नन्दलाल और गुलाल दोउ
 6. फाग की भीर अभीरन में गही गोविंद
- मतिराम (रसरराज), व्याख्या हेतु पद
 1. कुन्दन को रंग फीकौ लगै
 2. कानन लौं लागे मुस्कान
 3. क्यों इन आंखिन
 4. गौने के द्यौस सिंगारन को
 5. मानहु पायौ है राज कहुं
 6. मोरपखा मतिराम किरीट

इकाई 04 –

- सेनापति (ऋतु वर्णन), व्याख्या हेतु पद
 1. वर्षा ऋतु – सेनापति उनए गए जलद सावन के
 2. शरद ऋतु – कातिक की राति थोरी
 3. हेमंत ऋतु – सीत को प्रबल सेनापति
 4. बसंत ऋतु – लाल लाल टेसू फूलि रहे हैं
 5. ग्रीष्म ऋतु – वृष को तरनि तेज
 6. शिशिर ऋतु – शिशिर में ससि को, सरूप पवै सबिताऊ

- रसखान रचनावली, सं० विद्यानिवास मिश्र/सत्यदेव मिश्र (व्याख्या हेतु सवैया संख्या – 1,2,3,5,10,16)

सन्दर्भ ग्रन्थ –

1. बिहारी का नया मूल्यांकन – बच्चन सिंह।
2. मुक्तक काव्य परम्परा और बिहारी – रामसागर त्रिपाठी।
3. तुलसीदास – रामचन्द्र तिवारी।
4. तुलसी काव्य मीमांसा – उदयभानु सिंह।
5. सूर की काव्य कला – मनमोहन गौतम।
6. रीतिकालीन कवियों की प्रेम व्यंजना – बच्चन सिंह।
7. मतिराम – त्रिभुवन सिंह।
8. घनानन्द का काव्य – रामदेव शुक्ल।
9. पदमाकर कवि – शुकदेव दुबे।
10. रसखान काव्य और आलोचना – ब्रजभूषण सावलिया।
11. पदमाकर – विश्वनाथ प्रसाद मिश्र।

चौथा प्रश्न पत्र – हिन्दी साहित्य का इतिहास (भारतेन्दु युग से अब तक)।

इकाई 01 –

- आधुनिक बोध का स्वरूप, मध्यकालीन साहित्य का आधुनिक साहित्य में रूपान्तरण, आधुनिक काल की सामाजिक, राजनैतिक, आर्थिक व सांस्कृतिक पृष्ठभूमि। 1857 की क्रांति और पुनर्जागरण।
- भारतेन्दु युग – प्रमुख साहित्यकार और उनकी काव्यगत विशेषताएँ।

इकाई 02 –

- द्विवेदी युग – काव्यगत विशेषताएँ एवं रचनाकार।
- हिन्दी स्वछन्दतावादी काव्य का विकास, छायावाद और उत्तर छायावादी काव्य की काव्यगत विशेषताएँ।

इकाई 03 –

- प्रयोगवाद, प्रगतिवाद, नई कविता के प्रमुख कवि और काव्यगत विशेषताएँ।

इकाई 04 –

- हिन्दी गद्य का विकास और गद्य के विकास की वैचारिक पृष्ठभूमि।
- हिन्दी गद्य की विविध विधाओं का विकास।

सहायक ग्रन्थ –

1. हिन्दी साहित्य का इतिहास – रामचन्द्र शुक्ल।
2. हिन्दी साहित्य का आलोचनात्मक इतिहास – रामकुमार वर्मा।
3. हिन्दी साहित्य का दूसरा इतिहास – बच्चन सिंह।
4. दक्खिनी साहित्य का आलोचनात्मक इतिहास – इकबाल सिंह।
5. आधुनिकता और हिन्दी साहित्य – इन्द्रनाथ मदान।
6. आधुनिक हिन्दी साहित्य का इतिहास – बच्चन सिंह।
7. हिन्दी नवजागरण और संस्कृति – शम्भूनाथ सिंह।
8. हिन्दी वाङ्मय : बीसवीं शती – सं० नगेन्द्र।

द्वितीय सत्र

पांचवां प्रश्न पत्र – भारतीय काव्य शास्त्र और हिन्दी आलोचना।

इकाई 01 –

- संस्कृत काव्य शास्त्र का परिचय, काव्य लक्षण, काव्यहेतु, काव्य प्रयोजन और काव्य के भेद।
- रस सिद्धान्त – स्वरूप, रस के अंग, रस निष्पत्ति, साधारणीकरण, सहृदय की अवधारणा।

इकाई 02 –

- अलंकार सिद्धान्त की मूल स्थापनाएँ।
- रीति सिद्धान्त, काव्य गुण, रीति और शैली।
- वक्रोक्ति सिद्धान्त की मुख्य अवधारणाएँ एवं भेद।

इकाई 03 –

- ध्वनि सिद्धान्त – ध्वनि का स्वरूप, प्रमुख स्थापनाएँ, ध्वनि काव्य के भेद।
- औचित्य सिद्धान्त की प्रमुख स्थापनाएँ।

इकाई 04 –

- हिन्दी आलोचना का विकास, प्रमुख हिन्दी आलोचक व उनके सिद्धान्त (रामचन्द्र शुक्ल, हजारी प्रसाद द्विवेदी, नगेन्द्र, रामविलास शर्मा, नामवर सिंह)।
- हिन्दी आलोचना की प्रमुख प्रवृत्तियाँ – शास्त्रीय, स्वछंदतावादी, सौन्दर्यशास्त्रीय, ऐतिहासिक-सामाजिक, समाजशास्त्रीय।

सन्दर्भ ग्रन्थ –

1. भारतीय साहित्य शास्त्र – बलदेव उपाध्याय।
2. काव्यशास्त्र – भगीरथ मिश्र।
3. भारतीय काव्यशास्त्र की भूमिका – नगेन्द्र।
4. भारतीय काव्यशास्त्र – राममूर्ति त्रिपाठी।
5. भारतीय काव्यशास्त्र – तारकनाथ बाली।
6. हिन्दी आलोचना का सैद्धान्तिक आधार – कृष्णदत्त पालीवाल।
7. हिन्दी आलोचना के नये वैचारिक सरोकार – कृष्णदत्त पालीवाल।
8. हिन्दी साहित्य शास्त्र – नंदकिशोर नवल।
9. बीसवीं शताब्दी की हिन्दी आलोचना – निर्मला जैन।
10. हिन्दी आलोचना – विश्वनाथ त्रिपाठी।

छठवां प्रश्न पत्र – आधुनिक गद्य (निबन्ध, नाटक एवं अन्य गद्य विधाएँ)।

इकाई 01 –

- नाटक – चन्द्रगुप्त (जयशंकर प्रसाद)।
लहरों के राजहंस (मोहन राकेश)।

इकाई 02 – निबन्ध।

- अद्भुत अपूर्व स्वप्न – भारतेन्दु हरीशचन्द्र।
- कविता क्या है – रामचन्द्र शुक्ल।
- अशोक के फूल – हजारी प्रसाद द्विवेदी।
- उत्तराखण्ड में सन्त मत और सन्त साहित्य – पीताम्बर दत्त बड़थवाल।
- शिक्षा का उद्देश्य – महादेवी वर्मा।
- भारतीयता – अज्ञेय।

इकाई 03 –

- पथ के साथी (महादेवी वर्मा) निराला और प्रसाद पर लिखे संस्मरण।

इकाई 04 –

- रामवृक्ष बेनीपुरी की पुस्तक 'माटी की मूर्तें' से एक रेखाचित्र – रजिया।

सन्दर्भ ग्रन्थ –

1. प्रसाद के नाटकों का शास्त्रीय अध्ययन – जगन्नाथ प्रसाद शर्मा।
2. हिन्दी नाटक और रंगमंच : पहचान और परख – सं० इन्द्रनाथ मदान।
3. प्रसाद के नाटक : स्वरूप और संरचना – गोविन्द चातक।
4. नाटककार मोहन राकेश – पुष्पा वंसल।
5. साहित्य में गद्य की नयी विधाएँ – कैलाशचंद्र भाटिया।

सातवां प्रश्न पत्र – उपन्यास एवं कथा साहित्य ।

इकाई 01 –

- गोदान – प्रेमचन्द ।

इकाई 02 –

- मैला आंचल – फणीश्वरनाथ रेणु ।

इकाई 03 –

- शेखर एक जीवनी – अज्ञेय ।

इकाई 04 – हिन्दी कहानी ।

- उसने कहा था – चन्द्रधर शर्मा गुलेरी ।
- कफन – प्रेमचन्द ।
- आकाशदीप – जयशंकर प्रसाद ।
- दोपहर का भोजन – अमरकान्त ।
- राजा निरवंसिया – कमलेश्वर ।
- पिता – ज्ञानरंजन ।
- जंगलजातकम – काशीनाथ सिंह ।
- पालगोमरा का स्कूटर – उदय प्रकाश ।

सन्दर्भ ग्रन्थ –

1. गोदान : पुनर्मूल्यांकन – गोपाल राय ।
2. हिन्दी उपन्यास एक अन्तर्यात्रा – रामदरश मिश्र ।
3. राष्ट्रीय आन्दोलन और हिन्दी उपन्यास – तेज सिंह ।
4. उपन्यास : स्वरूप और संवेदना – राजेन्द्र यादव ।
5. हिन्दी उपन्यास का इतिहास – गोपाल राय ।
6. कहानी : नई कहानी – नामवर सिंह ।
7. नई कहानी : सन्दर्भ और प्रकृति – सं० देवीशंकर अवस्थी ।
8. कहानी पाठ और प्रक्रिया – सुरेन्द्र चौधरी ।

आठवां प्रश्न पत्र – पाश्चात्य काव्य शास्त्र

इकाई 01 –

- प्लेटो के काव्य सिद्धान्त
- अरस्तू का अनुकरण, त्रासदी व विरेचन सिद्धान्त
- लॉजाइनस की उदात्त की अवधारणा

इकाई 02 –

- वर्ड्सवर्थ का काव्य भाषा सिद्धान्त
- कॉलरिज का कल्पना सिद्धान्त
- मैथ्यू आर्नाल्ड – कला और नैतिकता, आलोचना के प्रकार्य

इकाई 03 –

- आई0ए0 रिचर्डस – काव्य मूल्य, संवेगों सन्तुलन, व्यावहारिक आलोचना
- टी0एस0 इलियट – परम्परा और व्यैक्तिक प्रज्ञा, निर्व्यैक्तिकता का सिद्धान्त, वस्तुनिष्ठ समीकरण

इकाई 04 –

- नई समीक्षा, स्वछंदतावाद, शास्त्रीयतावाद, मनोविश्लेषणवाद, अस्तित्ववाद, उत्तरआधुनिकतावाद, संरचनावाद और विखण्डनवाद

सन्दर्भ ग्रन्थ –

1. पाश्चात्य काव्यशास्त्र – तारकनाथ बाली।
2. काव्य चिन्तन की पश्चिमी परम्परा – निर्मला जैन।
3. उदात्त के विषय में – निर्मला जैन।
4. पाश्चात्य काव्यशास्त्र – निर्मला जैन।
5. पाश्चात्य काव्यशास्त्र – देवेन्द्रनाथ शर्मा।
6. पाश्चात्य काव्यशास्त्र : अधुनातन सन्दर्भ – सत्यदेव मिश्र।
7. अरस्तू का काव्यशास्त्र – डॉ० नगेन्द्र।
8. उत्तर आधुनिकता कुछ विचार – सं० देवीशंकर नवीन।

नौवां प्रश्न पत्र – आधुनिक काव्य (भारतेन्दु युग से उत्तर छायावाद तक)

इकाई 01 –

- मैथिलीशरण गुप्त – साकेत का नौवां सर्ग।
- अयोध्या सिंह उपाध्याय हरिऔध – प्रियप्रवास का प्रथम सर्ग।

इकाई 02 –

- जयशंकर प्रसाद – कामायनी का लज्जा सर्ग।
- सुमित्रानन्दन पंत – प्रथम रश्मि, मौन निमंत्रण, बादल, नौका विहार, द्रुत झरो जगत के जीर्ण पत्र, ताज, पर्वत प्रदेश में पावस।

इकाई 03 –

- निराला – राम की शक्ति पूजा, बादल राग 1 और 2, सरोज स्मृति।
- महादेवी वर्मा – यामा के प्रारम्भिक चार गीत।

इकाई 04 –

- रामधारी सिंह दिनकर – रश्मि रथी सर्ग तीन से (वर्षों तक वन में घूम घूम..... दोनों पुकारते थे जय जय।)
- हरिवंशराय बच्चन – मधुशाला प्रारम्भ के बीस छन्द, इस पार प्रिये मधु है।

सहायक ग्रन्थ –

1. निराला की साहित्य साधना, भाग 1,2 और 3 – रामविलास शर्मा।
2. कामायनी रूपक – विनय।
3. प्रसाद का पूर्ववर्ती काव्य – उषा मिश्र।
4. प्रसाद निराला और पंत : छायावाद और उसकी वृहत त्रयी – विजय बहादुर सिंह।
5. साकेत एक अध्ययन – नगेन्द्र।
6. छायावाद – नामवर सिंह।
7. महादेवी – बच्चन सिंह।
8. कामायनी एक पुनर्विचार – मुक्तिबोध।
9. आधुनिक कविता यात्रा – रामस्वरूप चतुर्वेदी।

द्वितीय वर्ष – तृतीय सत्र

दसवां प्रश्न पत्र – भाषा विज्ञान एवं हिन्दी भाषा

इकाई 01 –

- भाषा की परिभाषा, अभिलक्षण, भाषा परिवर्तन के कारण, दिशाएँ, भाषिक संरचना के स्तर और प्रकार्य, भाषा व्यवस्था और भाषा व्यवहार।

इकाई 02 –

- स्वन विज्ञान – स्वन विज्ञान का स्वरूप और शाखाएँ, वाक अवयव और उनके कार्य, स्वन की अवधारणा, स्वनों का वर्गीकरण, स्वनिम की अवधारणा और भेद।

इकाई 03 –

- रूपिम विज्ञान – रूप प्रक्रिया का स्वरूप और शाखाएँ, रूपिम की अवधारणा और भेद – मुक्त और आबद्ध, सम्बन्ध तत्व और अर्थ तत्व।
- वाक्य विज्ञान – परिभाषा, भेद, वाक्य विश्लेषण, निकटस्थ अवयव विश्लेषण।

इकाई 04 –

- अर्थ विज्ञान – अर्थ की अवधारणा, शब्द और अर्थ का सम्बन्ध, अर्थ परिवर्तन के कारण और दिशाएँ, पर्यायता, विलोमता, अनेकार्थता।

सन्दर्भ ग्रन्थ –

1. भाषा विज्ञान – भोलानाथ तिवारी।
2. आधुनिक भाषा विज्ञान – कृपाशंकर सिंह।
3. भाषा और समाज – रामविलास शर्मा।
4. भाषा विज्ञान की भूमिका – देवेन्द्र नाथ शर्मा।

ग्यारहवां प्रश्न पत्र – आधुनिक काव्य (छायावादोत्तर हिन्दी कविता)

इकाई 01 –

- अज्ञेय – नदी के द्वीप, कलगी बाजरे की, साम्राज्ञी का नैवेद्य दान, यह दीप अकेला, असाध्य वीणा।
- मुक्तिबोध – अंधेरे में, ब्रह्मराक्षस, भूल गलती, आत्मा के मित्र मेरे।

इकाई 02 –

- नागार्जुन – सिंदूर तिलकित भाल, अकाल के बाद, फसल, प्रतिबद्ध हूँ....., अमल धवल हिमगिरी के शिखरों पर।
- रघुवीर सहाय – दो अर्थ का भय, बडी हो रही लडकी, रामदास, औरत की जिंदगी।

इकाई 03 –

- केदारनाथ सिंह – सुई और तागे के बीच में, उस आदमी को देखो, बाघ 1,2,3 और 4।
- शमशेर बहादुर सिंह – एक पीली शाम, उषा, काल तुझसे होड़ है मेरी।

इकाई 04 –

- वीरेन डंगवाल – या देवी, परम्परा, दुष्चक्र में स्रष्टा।
- मंगलेश डबराल – यहां थी वह नदी, पहाड़ पर लालटेन, आवाजें, संगतरास।

सहायक ग्रन्थ –

1. आधुनिक कविता यात्रा – रामस्वरूप चतुर्वेदी।
2. कविता के नए प्रतिमान – नामवर सिंह।
3. आधुनिक हिन्दी कविता – विश्वनाथ प्रसाद तिवारी।
4. कविता की जमीन और जमीन की कविता – नामवर सिंह।
5. आधुनिक हिन्दी कविता में बिम्ब विधान का विकास – केदारनाथ सिंह।

बारहवां प्रश्न पत्र – (विकल्प) (क) लघु शोध प्रबन्ध

छात्र/छात्रा विभागाध्यक्ष एवं शोध निर्देशक के सहयोग एवं अनुमति से लघु शोध प्रबन्ध के विषय का चयन करेंगे। लघु शोध प्रबन्ध लगभग पचास पृष्ठों का होना चाहिए, जिसका मूल्यांकन आन्तरिक एवं वाह्य परीक्षक द्वारा होगा। लघु शोध प्रबन्ध का चयन वही छात्र कर सकते हैं जिन्होंने एम0ए0 प्रथम वर्ष (प्रथम एवं द्वितीय सेमेस्टर) में न्यूनतम 60 % अंक प्राप्त किये हों।

विकल्प (ख) भारतीय साहित्य

इकाई 01 –

- भारतीय साहित्य का स्वरूप, भारतीय साहित्य के अध्ययन की समस्याएँ, भारतीय साहित्य में आज के भारत का बिम्ब।
- भारतीयता का समाजशास्त्र।

इकाई 02 –

- दक्षिणात्य भाषा वर्ग – तमिल, तेलगु, कन्नड़, मलयालम।
- पूर्वांचल भाषा वर्ग – उड़िया, बंगला, असमिया, मणिपुरी।
- पश्चिमोत्तर भाषा वर्ग – मराठी, गुजराती, कश्मीरी, उर्दू।
उपरोक्त भाषाओं के साहित्य की विशेषताएँ और प्रतिनिधि साहित्यकार।

इकाई 03 – पाठ्य पुस्तकें

- संस्कार – (कन्नड़) यू0आर0 अनन्तमूर्ति।

इकाई 04 –

- बीच का रास्ता नहीं होता। पाश (पंजाबी कविता संग्रह)।
- घासीराम कोतवाल। विजय तेन्दुलकर (मराठी नाटक)।

सहायक ग्रन्थ –

1. भारतीय साहित्य – नगेन्द्र।
2. भारतीय साहित्य के इतिहास की समस्याएँ – रामविलास शर्मा।
3. आधुनिक भारतीय चिन्तन – विश्वनाथ नरवणे।
4. भारतीय साहित्य – रामछबीला त्रिपाठी।
5. भारतीय साहित्य – मूलचन्द गौतम।

विकल्प (ग) जयशंकर प्रसाद

इकाई 01 –

- कामायनी – आशा, श्रद्धा, इडा और काम सर्ग।
- लहर काव्य संग्रह की ऐतिहासिक पृष्ठभूमि पर आधारित कविताएँ।

इकाई 02 –

- ध्रुवस्वामिनी नाटक

इकाई 03 –

- कंकाल उपन्यास।
- प्रतिध्वनि, आकाशदीप, पुरस्कार, मधुवा कहानियाँ।

इकाई 04 –

- काव्य कला तथा अन्य निबन्ध (प्रथम और अंतिम निबन्ध)।

नोट – पाठ्यक्रम में जयशंकर प्रसाद का सम्पूर्ण साहित्य है। उपरोक्त पुस्तकों का निर्देश केवल व्याख्या के लिए किया गया है।

सहायक ग्रन्थ –

1. जयशंकर प्रसाद – नन्ददुलारे वाजपेई।
2. जयशंकर प्रसाद : वस्तु और कला – रामेश्वर खण्डेलवाल।
3. प्रसाद और उनका साहित्य – विनोद शंकर व्यास।
4. प्रसाद का काव्य – प्रेमशंकर।
5. प्रसाद का गद्य साहित्य – राजमणि शर्मा।
6. कामायनी का पुनर्मुल्यांकन – रामस्वरूप चतुर्वेदी।
7. प्रसाद साहित्य में अतीत चिन्तन – धर्मपाल कपूर।

विकल्प (घ) चंद्रकुंवर बर्तवाल

चंद्रकुंवर बर्तवाल के निम्नलिखित पाठ्य ग्रन्थ पाठ्यक्रम में हैं –

1. मेघनन्दिनी।
2. पयस्विनी।
3. विराट ज्योति।
4. गीत माधवी एवं जीतू।
5. कंकड़ पत्थर।

नोट – पाठ्यक्रम में चंद्रकुंवर बर्तवाल का सम्पूर्ण साहित्य है। उपरोक्त पुस्तकों का निर्देश केवल व्याख्या के लिए किया गया है।

सहायक ग्रन्थ –

1. छायावाद के आधार स्तम्भ – गंगा प्रसाद पाण्डेय।
2. छायावाद – सम्भूनाथ सिंह।
3. चंद्रकुंवर, काव्य प्रसंग और काव्य संहिता – श्रीकंठ, जय श्री ट्रस्ट, 310, बसन्त विहार, देहरादून।

तेरहवां प्रश्न पत्र – (विकल्प) (क) सूरदास

इकाई 01 –

- सूरसागर (दोनों खण्ड), सं० नन्ददुलारे वाजपेई।

इकाई 02 –

- कृष्णभक्ति शाखा की दार्शनिक पृष्ठभूमि और सूरदास, सामाजिक सांस्कृतिक अवदान, सूर का वातसल्य।

इकाई 03 –

- भ्रमरगीत परम्परा और सूरदास, भ्रमरगीत में सूर की मौलिक उदभावनायें और उद्देश्य।

इकाई 04 –

- भ्रमरगीत में गोपियों का वाग्वैदग्ध्य, सूर का काव्य शिल्प – अलंकार, बिम्ब और गीतात्मकता आदि।

सहायक ग्रन्थ –

1. सूर की काव्य कला – मनमोहन गौतम।
2. सूरदास – रामचन्द्र शुक्ल।
3. सूर साहित्य – हजारी प्रसाद द्विवेदी।
4. भक्ति आन्दोलन और सूरदास का काव्य – मैनेजर पाण्डेय।

5. सूर और उनका साहित्य – हरवशं लाल शर्मा।

विकल्प (ख) तुलसीदास

पाठ्यग्रन्थ –

- रामचरितमानस – बालकाण्ड और अयोध्याकाण्ड।
- विनयपत्रिका – प्रारम्भ के पचास पद।
- कवितावली – सम्पूर्ण।

नोट – पाठ्यक्रम में तुलसीदास का सम्पूर्ण साहित्य है। उपरोक्त पुस्तकों का निर्देश केवल व्याख्या के लिए किया गया है।

सहायक ग्रन्थ –

1. गोस्वामी तुलसीदास – रामचन्द्र शुक्ल।
2. तुलसी दर्शन – डॉ० बलदेव मिश्र।
3. तुलसी मीमांशा – डॉ० उदयभान सिंह।
4. तुलसी विविध संदर्भों में – डॉ० वचन देव कुमार।
5. तुलसी साहित्य और साधना – डॉ० इन्द्रपाल सिंह।

विकल्प (ग) हिन्दी नाटक और रंगमंच

इकाई 01 –

- अंधेर नगरी – भारतेन्दु हरीशचन्द्र।
- आधे अधूरे – मोहन राकेश।
- अंधा युग – धर्मवीर भारती।
- संशय की एक रात – नरेश मेहता।

इकाई 02 –

- हिन्दी रंगमंच का इतिहास – अव्यवसायिक, व्यवसायिक, पेशेवर, शौकिया, पारसी रंगमंच, पृथ्वी थियेटर, इप्ता, आजादी के बाद का रंगमंच।

इकाई 03 –

- भरत, स्तानिस्लावस्की और बर्टोल्ट ब्रेख्ट के अभिनय सिद्धान्त।

इकाई 04 –

- भारतेन्दु, जयशंकर प्रसाद और मोहन राकेश का नाट्य चिन्तन।

सहायक ग्रन्थ –

1. भारतीय और पाश्चात्य रंगमंच – सीताराम चतुर्वेदी।
2. नाट्य शास्त्र – राधा वल्लभ त्रिपाठी।
3. रंगमंच – बलवन्त गार्गी।
4. रंगदर्शन – नेमिचन्द्र जैन।
5. पारम्परिक भारतीय रंगमंच – कपिला वात्स्यायन
6. पारसी हिन्दी रंगमंच – लक्ष्मी नारायण लाल।
7. नाट्य शास्त्र की भारतीय परम्परा और दशरूपक – हजारी प्रसाद द्विवेदी।
8. भारत की हिन्दी नाट्य संस्थाएँ और नाट्यशालाएँ – विश्वनाथ शर्मा।
9. ग्रीक नाट्य कला कोष – कमल नसीम।
10. हिन्दी नाटक और रंगमंच : ब्रेख्ट का प्रभाव – सुरेश वशिष्ठ।
11. खड़िया का घेरा (भूमिका) – सं० कमलेश्वर।
12. स्तानिस्लावस्की : चरित्र की रचना प्रक्रिया – अनु० विश्वनाथ प्रसाद मिश्र।
13. स्तानिस्लावस्की : अभिनेता की तैयारी – अनु० विश्वनाथ प्रसाद मिश्र।

विकल्प (घ) प्रेमचन्द

निम्नलिखित रचनायें पाठ्यक्रम में हैं –

1. रंगभूमि।
2. कर्मभूमि।
3. कुछ विचार।
4. मानसरोवर (खण्ड 1)।

नोट – पाठ्यक्रम में प्रेमचन्द का सम्पूर्ण साहित्य है। उपरोक्त पुस्तकों का निर्देश केवल व्याख्या के लिए किया गया है।

सहायक ग्रन्थ –

1. प्रेमचन्द एक विवेचन – इन्द्रनाथ मदान।
2. कथाकार प्रेमचन्द – जाफर रजा।
3. कहानीकार प्रेमचन्द : रचना दृष्टि और रचना शिल्प – शिव कुमार मिश्र।
4. प्रेमचन्द और भारतीय किसान – रामवक्ष।
5. प्रेमचन्द का सौन्दर्यशास्त्र – नंदकिशोर नवल।
6. प्रेमचन्द के उपन्यासों की कथा संरचना – मीनाक्षी श्रीवास्तव।
7. प्रेमचन्द और उनका युग – रामविलास शर्मा।

चतुर्थ सत्र

चौदहवां प्रश्न पत्र – भाषा विज्ञान और हिन्दी भाषा

इकाई 01 –

- हिन्दी की ऐतिहासिक पृष्ठभूमि, प्राचीन भारतीय आर्य भाषाएँ – वैदिक संस्कृत, लौकिक संस्कृत।
- मध्यकालीन भारतीय आर्य भाषाएँ – पालि, प्राकृत, अपभ्रंश और उनकी विशेषताएँ।
- आरंभिक या पुरानी हिन्दी।

इकाई 02 –

- हिन्दी का भौगोलिक विस्तार, हिन्दी की प्रमुख उपभाषाएँ, खड़ी बोली के रूप में हिन्दी का विकास, दखिनी हिन्दी।
- प्रमुख बोलियाँ – ब्रज, अवधि और खड़ी बोली की विशेषताएँ व उनकी विरासत।

इकाई 03 –

- हिन्दी का भाषिक स्वरूप – हिन्दी की स्वनिम व्यवस्था। हिन्दी शब्द रचना – उपसर्ग, प्रत्यय, समास, रूपरचना।
- रूपरचना – लिंग, वचन, कारक व्यवस्था के सन्दर्भ में हिन्दी के संज्ञा, सर्वनाम, विशेषण व क्रियारूप। हिन्दी वाक्य रचना – पदक्रम और अन्विति।

इकाई 04 –

- हिन्दी के विविध रूप – सम्पर्क भाषा, राष्ट्रभाषा, राजभाषा के रूप में हिन्दी और हिन्दी की संवैधानिक स्थिति।

सहायक ग्रन्थ –

1. हिन्दी भाषा का उद्भव और विकास – गुणानन्द जुयाल।
2. हिन्दी भाषा : अतीत से आज तक – विजय अग्रवाल।
3. हिन्दी भाषा – हरदेव बाहरी।
4. हिन्दी भाषा का इतिहास – भोलानाथ तिवारी।
5. राष्ट्रभाषा हिन्दी : समस्याएँ और समाधान – देवेन्द्रनाथ शर्मा।
6. हिन्दी भाषा का उद्गम और विकास – उदय नारायण तिवारी।

पन्द्रहवां प्रश्न पत्र – प्रयोजन मूलक हिन्दी और मीडिया लेखन

इकाई 01 –

- प्रयोजन मूलक हिन्दी का स्वरूप, अभिप्राय, उद्देश्य तथा क्षेत्र – सामान्य हिन्दी, साहित्यिक हिन्दी तथा प्रशासनिक हिन्दी का सम्बन्ध एवं अन्तर।
- प्रयोजन मूलक हिन्दी के प्रकार – प्रशासनिक, कार्यालयी, वित्त-वाणिज्य, बैंकिंग, बीमा, व्यापार, विधि, विज्ञापन एवं संचार माध्यम आदि।

इकाई 02 –

- प्रशासनिक व्यवस्था में हिन्दी – पत्राचार का स्वरूप एवं महत्व, पत्राचार के प्रकार, सरकारी-अर्द्धसरकारी पत्र, ज्ञापन, परिपत्र, आदेश, पृष्ठांकन, टिप्पणी, प्रारूपण, प्रतिवेदन, विज्ञप्ति आदि।
- प्रशासनिक भाषा की विशेषताएँ – विशिष्ट प्रयुक्तियाँ, क्रिया शब्द, पदबन्ध, पारिभाषिक शब्दावली, कार्यालयी हिन्दी की प्रयुक्तियाँ।

इकाई 03 –

- मीडिया लेखन – जनसंचार के श्रव्य-दृश्य माध्यमों की भाषिक विशेषताएँ, सोशल मीडिया और इन्टरनेट।

इकाई 04 –

- टेली-ड्रामा/डॉक्यूमेन्टरी ड्रामा आदि के लिए पटकथा लेखन एवं संवाद लेखन, विज्ञापनों की भाषिक विशेषताएँ, इन्टरनेट सामग्री सृजन, ब्लॉग का स्वरूप, ब्लॉग निर्माण और हिन्दी ब्लॉग।

सहायक ग्रन्थ –

1. प्रयोजनमूलक हिन्दी – विनोद गोदरे।
2. प्रारूपण, शासकीय पत्राचार और टिप्पण लेखन विधि – राजेन्द्र प्रसाद श्रीवास्तव।
3. प्रयोजनमूलक हिन्दी और जनसंचार – राजेन्द्र मिश्र।
4. कामकाजी हिन्दी – कैलाश चन्द्र भाटिया।
5. जनसंपर्क प्रचार एवं विज्ञान – विजय कुलश्रेष्ठ।
6. सूचना प्रौद्योगिकी और जन माध्यम – हरिमोहन।

सोलहवां प्रश्न पत्र – (विकल्प) (क) संस्कृत

इकाई 01 –

- कादम्बरी (केवल शुकनासोपदेश) – बाणभट्ट ।

इकाई 02 –

- कुमारसम्भवम् (पंचम सर्ग) – कालिदास ।

इकाई 03 –

- ऋतु वर्णन समुच्चय (केवल बसन्त ऋतु वर्णन) – वाल्मीकि ।

इकाई 04 –

- संस्कृत साहित्य का सामान्य परिचय और संधि व समास पर आधारित प्रश्न ।

नोट – केवल वे ही छात्र यह प्रश्न पत्र ले सकते हैं जिन्होंने इण्टरमीडिएट से उपर की कक्षाओं में संस्कृत विषय का अध्ययन न किया हो ।

सहायक ग्रन्थ –

1. संस्कृत साहित्य का इतिहास – ए0 वी0 कीथ ।
2. संस्कृत नाटक – ए0 वी0 कीथ ।
3. संस्कृत साहित्य का इतिहास – बलदेव उपाध्याय ।
4. संस्कृत कवि दर्शन – भोलाशंकर व्यास ।
5. उपमा कालिदासस्य – शशिभूषण दास गुप्त ।
6. संस्कृत साहित्य की रूपरेखा – चन्द्रशेखर ।
7. बाणभट्ट और उनकी कादम्बरी – महेश भारती ।

विकल्प (ख) गढ़वाली लोक साहित्य

इकाई 01 –

- लोक साहित्य की अवधारणा और गढ़वाली लोक साहित्य, लोक संस्कृति और लोक साहित्य का सम्बन्ध, गढ़वाली भाषा का विकास, शब्द सम्पदा और अर्थ भेद।
- लोक साहित्य की विविध विधाएँ और गढ़वाली लोक साहित्य की विविध विधाओं का परिचय।

इकाई 02 –

- लोकगीत का स्वरूप और विशेषताएँ, गढ़वाली लोकगीतों की विशेषताएँ और उनका वर्गीकरण।
- लोकगाथा का अर्थ, स्वरूप और विशेषताएँ, गढ़वाली लोकगाथाओं की विशेषताएँ और उनका वर्गीकरण।

इकाई 03 –

- लोककथा का स्वरूप और विशेषताएँ, गढ़वाली लोककथाओं की विशेषताएँ।
- गढ़वाली पखाणा एवं आणा (पहेली एवं लोकोक्तियाँ)।
- गढ़वाली लोकगीतों, लोकगाथाओं, लोककथाओं और प्रकीर्ण साहित्य में प्रतिबिम्बित गढ़वाली समाज और जन अनुभवों का समाजशास्त्रीय अध्ययन।

इकाई 04 –

- गढ़वाली लोक वाद्य, ढोल सागर, औजी-बादी और नंदाजात।
- गढ़वाल के प्रसिद्ध लोक साहित्य संकलनकर्ता और लोक साहित्य में उनका योगदान।

सहायक ग्रन्थ –

1. लोक साहित्य विज्ञान – सत्येन्द्र।
2. गढ़वाली लोक गीत : एक सांस्कृतिक अध्ययन – गोविन्द चातक।
3. गढ़वाली भाषा और उसका साहित्य – डॉ० हरिदत्त भट्ट शैलेश।
4. गढ़वाल के लोकगीत और लोकनृत्य – शिवानन्द नौटियाल।
5. गढ़वाली लोक साहित्य का सन्दर्भ : मध्य हिमालय – गोविन्द चातक।
6. गढ़वाली लोकमानस – शिवानन्द नौटियाल।
7. भारतीय लोक साहित्य कोश, खण्ड 4 – सुरेश गौतम।

विकल्प (ग) अनुवाद : सिद्धान्त और प्रयोग

इकाई 01 –

- अनुवाद : परिभाषा, क्षेत्र और सीमाएँ।
- प्राचीन परम्परा, इतिहास और पृष्ठभूमि, आधुनिक अनुवाद कर्म : अनुवाद की प्रक्रिया, भाषिक विश्लेषण, अन्तरण और पुनर्गठन, रूपान्तरण और मिश्रण के नये रूप।

इकाई 02 –

- दुभाषिया कर्म, आशु अनुवाद, यांत्रिक अनुवाद, कम्प्यूटर अनुवाद आदि।

इकाई 03 –

- अनुवाद के क्षेत्र और प्रकार – कार्यालयी, वैज्ञानिक एवं तकनीकी साहित्य, विधि, मानविकी आदि।
- अनुवाद की समस्याएँ, सृजनात्मक या साहित्यिक अनुवाद की समस्याएँ, वैज्ञानिक-तकनीकी अनुवाद की समस्याएँ, कोश एवं पारिभाषिक शब्दार्थ के निर्माण की समस्याएँ आदि।

इकाई 04 –

- अनुवाद के उपकरण – कोश, पारिभाषिक शब्दकोश, थिसारस, कम्प्यूटर आदि।
- अनुवादक के गुण।
- पाठ की अवधारणा और प्रकृति : पाठ शब्द, प्रति शब्द, शाब्दिक अनुवाद, भावानुवाद, छायानुवाद, पूर्ण और आंशिक अनुवाद, आशु अनुवाद।

सहायक ग्रन्थ –

1. अनुवाद कला – एन0 ई0 विश्वनाथ अय्यर।
2. अनुवाद विज्ञान : सिद्धान्त और अनुप्रयोग – नगेन्द्र।
3. अनुवाद : सिद्धान्त और समस्याएँ – रविन्द्र नाथ श्रीवास्तव।
4. अनुवाद : सिद्धान्त और प्रयोग – जी0 गोपीनाथन।
5. अनुवाद सिद्धान्त की रूपरेखा – रीता रानी पालीवाल।
6. अनुवाद की समस्याएँ – जी0 गोपीनाथन।
7. अनुवाद के विविध आयाम – पूरन चन्द्र टण्डन।

सत्रहवां प्रश्न पत्र – (विकल्प) (क) जनपदीय भाषा साहित्य (गढ़वाली भाषा साहित्य)

इकाई 01 –

- बुराशं की पीड़ – मोहन लाल नेगी।
- सदेई – तारदत्त गैरोला, (प्रारम्भ के पचास छन्द)।
- सिंह सूक्तियां, हमारि जननि – भजन सिंह 'सिंह', देव बण को वर्णन – चन्द्रमोहन रतूड़ी, ढिमढिग – भगवती चरण निर्मोही, ब्रै की चिट्ठी – सुदामा प्रसाद प्रेमी, मुट्ठ बोटिक रख – नरेन्द्र सिंह नेगी।
- खबेश – प्रेमलाल भट्ट (निबन्ध), क्या गोरी क्या सौळी – गोविन्द चातक (निबन्ध)।

इकाई 02 –

- गढ़वाली भाषा और साहित्य का उद्भव, विकास और मुख्य साहित्यिक प्रवृत्तियां।

इकाई 03 –

- कहानी और निबन्ध पर आधारित आलोचनात्मक प्रश्न।

इकाई 04 –

- कविता पर आधारित आलोचनात्मक प्रश्न।

सहायक ग्रन्थ –

1. गढ़वाली लोक गीत : एक सांस्कृतिक अध्ययन – गोविन्द चातक।
2. गढ़वाली भाषा और उसका साहित्य – डॉ० हरिदत्त भट्ट शैलेश।
3. गढ़वाल के लोकगीत और लोकनृत्य – शिवानन्द नौटियाल।
4. गढ़वाली लोक साहित्य का सन्दर्भ : मध्य हिमालय – गोविन्द चातक।
5. गढ़वाली लोकमानस – शिवानन्द नौटियाल।

विकल्प (ख) हिन्दी आलोचना साहित्य

इकाई 01 –

- साहित्य और आलोचना का सम्बन्ध, आलोचना और आलोचक का सामाजिक-सांस्कृतिक दायित्व, आलोचना और समाज।
- आचार्य शुक्ल पूर्व हिन्दी आलोचना – भारतेन्दु, महावीर प्रसाद द्विवेदी, मिश्र बन्धु, पदम सिंह शर्मा आदि।

इकाई 02 –

- आचार्य रामचन्द्र शुक्ल की सैद्धान्तिक और व्यवहारिक आलोचना।

इकाई 03 –

- शुक्लोत्तर हिन्दी आलोचना – हजारी प्रसाद द्विवेदी, विश्वनाथ प्रसाद मिश्र, नन्ददुलारे वाजपेई, नगेन्द्र, रामविलास शर्मा, नामवर सिंह।

इकाई 04 –

- रचनाकार आलोचक – प्रेमचन्द, प्रसाद, पंत, निराला, महादेवी, दिनकर, अज्ञेय, मुक्तिबोध, विजयदेव नारायण साही।

सहायक ग्रन्थ –

1. चिन्तामणि भाग 1 और 2 – रामचन्द्र शुक्ल।
2. भारतेन्दु हरिश्चन्द्र और हिन्दी नवजागरण की समस्याएँ – रामविलास शर्मा।
3. आस्था और सौन्दर्य – रामविलास शर्मा।
4. नई कविता का आत्मसंघर्ष और अन्य निबन्ध – मुक्तिबोध।
5. एक साहित्यिक की डायरी – मुक्तिबोध।
6. सर्जना और सन्दर्भ – अज्ञेय।
7. रचना और आलोचना – देवीशंकर अवस्थी।
8. आलोचना और आलोचना – देवीशंकर अवस्थी।
9. हिन्दी आलोचना के बीज शब्द – बच्चन सिंह।
10. आलोचना की सामाजिकता – मैनेजर पाण्डेय।
11. छठवां दशक – विजयदेव नारायण साही।
12. यथार्थवाद – शिव कुमार मिश्र।
13. कविता से साक्षात्कार – मलयज।
14. कविता के नये प्रतिमान – नामवर सिंह।
15. दूसरी परम्परा की खोज – नामवर सिंह।
16. आधुनिक हिन्दी कवियों के काव्य सिद्धान्त – सुरेश चन्द्र गुप्त।

विकल्प (ग) अनुसंधान : प्रविधि और प्रक्रिया

इकाई 01 –

- अनुसंधान : स्वरूप, मूल तत्व और प्रकार।
- अनुसंधान और आलोचना।

इकाई 02 –

- विषय निर्वाचन, सामग्री संकलन, शोध कार्य का विभाजन : अध्याय, शीर्षक, उपशीर्षक और अनुपात।
- रूपरेखा, विषय सूची, प्रस्तावना, भूमिका, सहायक ग्रन्थ सूची, सन्दर्भ उल्लेख, पाद टिप्पणी।

इकाई 03 –

- साहित्यिक अनुसंधान में ऐतिहासिक तथ्यों और पद्धतियों का उपयोग।
- साहित्यिक अनुसंधान में समाजशास्त्रीय प्रविधि का उपयोग।
- हिन्दी अनुसंधान में सम्बद्ध विषयों की भूमिका।

इकाई 04 –

- पाठानुसंधान, हस्तलेखों का संकलन व उपयोग।
- भाषा वैज्ञानिक अनुसंधान।

सहायक ग्रन्थ –

1. अनुसंधान का स्वरूप – सं० सावित्री सिन्हा।
2. अनुसंधान की प्रक्रिया – सं० सावित्री सिन्हा व विजयेन्द्र स्नातक।
3. शोध प्रविधि – विनय मोहन शर्मा।

अठारहवां प्रश्न पत्र – मौखिकी

NATIONAL EDUCATION POLICY-2020

**Common Minimum Syllabus for all
Uttarakhand State Universities and Colleges for
First Three Years of Higher Education**

**PROPOSED STRUCTURE OF
UG - SOCIOLOGY
SYLLABUS**

2021

Curriculum Design Committee, Uttarakhand

Sr.No.	Name & Designation
1.	Prof. N.K. Joshi Vice-Chancellor , Kumaun University Nainital Chairman
2.	Prof. O.P.S. Negi Vice-Chancellor , Uttarakhand Open University Member
3.	Prof. P. P. Dhyani Vice-Chancellor , Sri Dev Suman Uttarakhand University Member
4.	Prof. N.S. Bhandari Vice-Chancellor, Soban Singh Jeena University Almora Member
5.	Prof. Surekha Dangwal Vice-Chancellor, Doon University, Dehradun Member
6.	Prof. M.S.M. Rawat Advisor, Rashtriya Uchchatar Shiksha Abhiyan, Uttarakhand Member
7.	Prof. K. D. Purohit Advisor, Rashtriya Uchchatar Shiksha Abhiyan, Uttarakhand Member

Syllabus Expert Committee

S.N.	Name	Designation	Department	Affiliation
1	Prof. Indu Pathak	Professor	Department of Sociology	Kumaun University, Nainital
2	Prof. D.S. Bisht	Professor	Department of Sociology	Kumaun University, Nainital
3	Prof. Jyoti Joshi	Professor	Department of Sociology	Kumaun University, Nainital
4.	Prof Ila Sah	Head, Professor	Department of Sociology	S.S.J University, Almora
5.	Dr, Anand Prakesh Singh	Professor	Department of Sociology	Pt. L.M.S Campus, Rishikesh
6.	Prof. Archana Srivastava	Head, Professor	Department of Sociology	Kumaun University, Nainital
7.	Dr. Priyanka N. Ruwali	Associate Professor	Department of Sociology	Kumaun University, Nainital
8.	Dr. Kamruddin Alam (Online)	Associate Professor	Department of Sociology	Kumaun University, Nainital
9.	Neeraj Singh (Online)	-	Department of Sociology	Uttarakhand Open University, Haldwani
10	Arun Yadav (Online)	-	Department of Sociology	Govt. P.G College Berinag
11.	Amita Gupta(Online)	-	Department of Sociology	Govt. P.G College Kashipur

Syllabus Preparation Committee

S.N.	Name	Designation	Department	Affiliation
1.	Prof Ila Sah	Head	Department of Sociology	S.S.J University, Almora
2.	Dr. Kusum Lata Arya	Associate Professor	Department of Sociology	S.S.J University, Almora
3.	Dr. Pushpa Verma	Associate Professor	Department of Sociology	S.S.J University, Almora
4.	Indra Mohan Pant	Research Scholar	Department of Sociology	S.S.J University, Almora

List of all Papers in Six Semesters					
Semester-wise Titles of the Papers in Sociology					
Year	Sem.	Course Code	Paper Title	Theory/ Practical	Credits
<i>Certificate Course in UG (Arts)</i>					
FIRST YEAR	I	UGSOC- CC101	Introductory Sociology(Core Course)	Theory	06
		UGSOC- ME102	Industrial Sociology(Minor Elective)	Theory	04
	II	UGSOC- CC201	Indian Social System (Core Course)	Theory	06
		UGSOC- V/SD202	Gender Sensitization (Vocational/Skill Development)	Theory	03
<i>Diploma in UG (Arts)</i>					
SECOND YEAR	III	UGSOC- CC301	Indian Social Problems (Core Course)	Theory	06
		UGSOC- ME302	Applied Sociology(Minor Elective)	Theory	04
	IV	UGSOC- CC401	Social Control (Core Course)	Theory	06
		UGSOC- V/SD402	Techniques of Social Research (Vocational/Skill Development)	Theory	03
<i>Bachelor of Arts</i>					
THIRD YEAR	V	UGSOC- CC501	Development of Sociological Thought (Core Course)	Theory	05
		UGSOC- CC502	Research Methodology in Sociology(Core Course)	Theory	05
		UGSOC- RP503	Research Project/Industrial Training Survey(Qualifying)	Field work	04
	VI	UGSOC- CC601	Indian Sociological Thought (Core Course)	Theory	05
		UGSOC- CC602	Social Change (Core Course)	Theory	05
		UGSOC- RP603	Research Project on Contemporary Social Issues (Qualifying)	Field work	04

COURSE INTRODUCTION

B.A. Sociology is a bachelor level course in Sociology with duration of three years. It is a social science, a term with which it is sometimes synonymous, which uses various methods of empirical investigation and critical analysis to develop and refine a body of knowledge about human social activity. A Bachelor degree in Sociology teaches the fundamental concepts related to structure of society, organization of society, and how humans interact within these constructs.

Various types of job opportunities after B.A. Sociology

- Teacher, Home Tutor & Lecturer
- Market Survey Researcher
- Labour Leader & Mediator
- Human Services Assistant
- Community Service Worker
- Training Advisor
- Census workers & Research Assistant

Various Areas for job after B.A. Sociology

- Educational Institutes
- Corporations
- Criminal Justice Field
- Human Services
- Labour Unions
- Prisons
- Radio Stations
- Trade Associations
- Research Organizations

Programme outcomes (POs):	
PO 1	This course will introduce students to key concepts in the discipline of Sociology.
PO2	It will provide them broad knowledge about development of sociological thought.
PO 3	It will give them basic understanding and skill related to social research.
PO 4	It will provide them basic understanding of the Indian society
PO 5	It will also sensitize them about social problems.

Programme specific outcomes (PSOs):

UG I Year / Certificate Course in Arts

- After completion of the course, the students will be able to understand the key concepts in Sociology.
- They would develop keen insights to distinguish between the common-sense knowledge and Sociological knowledge.
- They will understand the basic features of the Indian social system and social problems.
- They will have basic knowledge and skill related to social research, and also sensitivity about gender issues in society.

Programme specific outcomes (PSOs):

UG II Year/ (Diploma in Arts)

- After doing the programme, the students will develop in-depth understanding of sociological concepts, thoughts.
- They will have knowledge about the Traditional Social Institutions of Indian Society in context of continuity and change.
- Their sociological knowledge and analytical skills that would enable them to think critically about Indian society and emerging social problems and issues.
- They will have the knowledge and skill to conduct social research.

Programme specific outcomes (PSOs): <i>UG III Year / Bachelor of Arts</i>	
PSO 1	<ul style="list-style-type: none"> • After completing some courses, the students will be able to understand the development of Sociology as a discipline and its basic concepts. • They will have the knowledge of the works of classical sociological thinkers and their contribution in the field of Sociology. This would equip them with theoretical insights to understand social scenario around them and also familiarize them with different perspectives and theories. • They will be able to distinguish between macro-level sociological perspectives, specify the theoretical components of each perspective, and connect each perspective to their historical and contemporary theorists. • They will understand the emergence of intellectual traditions and also its impact upon the society
PSO2	<ul style="list-style-type: none"> • Courses in 'Research Methodology in Sociology', will enable the students to understand social research techniques which are used to investigate social phenomena. • They will have the skills to conduct Social Survey. • They will be familiar with formulation of significant hypothesis, Methods of Data collection and Sampling Techniques. • They will have basic knowledge on Elementary Statistics.
PSO3	<ul style="list-style-type: none"> • Some courses will help the students gain knowledge of field work and project work. • They will also have practical experience about field work and research project. • This empirical learning will help them in becoming good researcher in future.
PSO4	<ul style="list-style-type: none"> • Having done the course on Indian Sociology, the students would understand emergence and development of Sociology as a discipline in India and influence of the growth of Nationalism on the discipline • They would understand the philosophical foundations of Sociology and its application in the study of Indian society. • They would have conceptual clarity and articulate the main debates/arguments within Sociology in India. • They would be able to apply the sociological imagination and sociological concepts and principles to understand the society and also their own life.
PSO5	<ul style="list-style-type: none"> • Paper on Social Change will help the students understand the concept, dynamics and processes related to change in and change of society. • A critical understanding of social change would enable students to come out with suggestions contributing to social cohesion in society.
PSO6	<ul style="list-style-type: none"> • Some papers will help the students to get an in-depth understanding of socio-cultural realities of Indian Society and culture, including the tribal society and industrial scenario.

Year wise Structure of Sociology (CORE / ELECTIVE COURSES & PROJECTS)											
	Subject:										Total Credits /hrs
Course/Entry-Exit Levels	Year	Sem.	Paper 1	Credits / hrs	Paper 2	Credits / hrs	Paper 3	Credits /hrs	Research Project	Credit/	
<i>Certificate Course In Arts</i>	I	I	Introductory Sociology (Core Course)	06	Industrial Sociology (Minor or Elective)	04	Techniques of Social Research (Vocational/Skill Development)	03			
		II	Indian Social System (Core Course)	06		--					
<i>Diploma in Arts</i>	II	III	Indian Social Problems (Core Course)	06	Applied Sociology (Minor Elective)	04	--				
		IV	Social Control (Core Course)	06		-					
<i>Bachelor of Arts</i>		V	Development of Sociological Thought (Core Course)	05	Research Methodology in Sociology (Core Course)	05	Research Project/Industrial Training Survey (Qualifying)	04			

	III									
		VI	Indian Sociological Thought (Core Course)	05	Social Change (Core Course)	05	Research Project on Contemporary Social Issues			
Comments										
Internal Assessment & External Assessment										
Internal Assessment				Marks	External Assessment				Marks	
				25					75	
Assignments on any topic of the syllabus				10	External Assessment on the basis of University Examination System					
Seminar/Written Test				10	Research Project Work: Evaluation and Viva-voce by Internal and External Examiner					
Attendance				05						

Programme/Class: Certificate	Year: first	Semester: I
Subject: Sociology		
Course code: UGSOC-CC 101	Course Title: Introductory Sociology	
Credits: 06	Core: Compulsory	
Max. Marks: 100	Passing marks: As per University Rules	

Course Outcome:

This Paper will introduce students to new concept of Sociological discipline. These Concepts will enhance the conceptual learning and understanding of the basic concepts used in Sociology. This paper will contribute in enriching the vocabulary and scientific temperament of the students. The course is designed to incorporate all the key concepts of sociology which would enable the learner to develop keen insights to distinguish between the common-sense knowledge and Sociological knowledge.

Units	Topics	No. of Lectures
Unit I	Origin and Growth of Sociology, Meaning, Scope and Nature of Sociology, New Trends in Sociology.	15
Unit II	Relationship of Sociology with Other Social Sciences: Philosophy, Anthropology, Social Work, History, Political Science & Economics.	15
Unit III	Sociological Concept - Society : Definition and Characteristics, Community : Definition and Characteristics, Association : Definition and Characteristics, Institutions : Definition and Characteristics,	15
Unit IV	Social Processes: Associative- Co-operation : Meaning and Characteristics, Accommodation : Meaning and Characteristics, Assimilation: Meaning and Characteristics, Dissociative-Conflict : Meaning and Characteristics, Competition, & Contravention : Meaning and Characteristics,	15
Unit V	Social Groups: Meaning and Types of Social Group: Primary and Secondary Groups, Reference Group.	15
Unit VI	Culture & Civilization: Meaning, Characteristics, Relationship and Differences between Culture & Civilization.	15

Suggested Readings:

- Giddens, A, "Sociology", Oxford University Press, London, 2006
- MacIver and Page, "Society", McMillan, London, 1949
- Inkeles, A, "What is Sociology", Prentice Hall of India, New Delhi, 1987
- Harton, P.B and hunt C.L, "Sociology" McGraw Hill, New York, 1985
- Harlambos and Holborn, "Sociology: Themes and Perspectives", Harper Collins, USA, 2014
- N.K. Boss, Culture and Society in India, Asia Publishing House, Bombay, 1967

- T.B. Bottomore, Sociology: A Guide to Problems and Literature, George Allen and Unwin Bombay, 1972
- MacIver and Page, Society: An Introductory analysis, McMillan 1974
- N. Jayram, Introductory Sociology, McMillan India, Madras, 1988
- Harry M. Johnson, Sociology: A Systematic Introduction, Allied, 1995
- Kingsley Davis, Human Society, Surjeet Publication, Delhi, 1995
- K. L. Sharma, Social Stratification and Mobility, 2007
- गुप्ताएम0एल0 औरडी0डी0 (2020), समाजशास्त्र, साहित्यभवनपब्लिकेशन
- सिंहजे0पी0 (2013), समाजशास्त्रअवधारणाएंएवंसिद्धान्त, पी0एच0आई0 लर्निंगप्राइवेटलिमिटेड।

Suggested Online Link:

MOOC platforms such as “SWAYAM” in India and Abroad.

Suggested equivalent online courses:

IGNOU & Other centrally/state operated universities

This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:

Course Prerequisites:

CERTIFICATE COURSE IN UG (Arts)		
Programme: <i>Certificate Course in UG(Arts)</i>		Year: I Semester: I
Subject: Sociology		
Course Code: UGSOC- ME102	Course Title: Industrial Sociology	
Course Outcomes:		
This Paper describes the nature and scope of Industrial Sociology. This Paper Elaborate changing structure of modern Industrial enterprises and principles of organization-Formal and Informal.		
Credits: 04		Minor Elective
Max. Marks:		Min. Passing Marks: As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Industrial Sociology: Meaning, Definition, Nature and Scope, Development of Industrial Sociology.	15
Unit II	Industrial Organization: Formal and Informal Organization. Structure and Features of Industrial Organization, Prerequisites of Industrial Organization.	15
Unit III	Industrial Management and Worker's Participation. The Management Structure-Line and Staff Organization, White collar Workers, Blue Collar Workers and Specialist.	15
Unit IV	Labour Welfare: Concept and Measures, Trade Union: Growth, functions and role in industrial organization.	15

Suggested Reading:

- Charles, A. Myers and SubbiahKannappan, Industrial Relations in India, Asia Publishing House, Bombay.
- Giri, V. V., Labour Problems in Indian Industry, Asia Publishing House, Bombay.
- Gisbert, P., Fundamental of Industrial Sociology, Tata McGraw-Hill Publishing Co., New Delhi.
- Karnik, V. B., Indian Labour: Problems and Prospects, Minerva Associates Pvt. Ltd., Calcutta.
- Kohli, A. S., S. K. Sharma, Labour Welfare and Social Security, Anmol Publications Pvt. Ltd., New Delhi.
- Mamoria, C. B. and S. Mamoria, Dynamics of Industrial Relations, Himalaya Publishing House, New Delhi.
- Mathur, A. S. and J. S. Mathur, Trade Union Movement in India, Chaitanya Publishing House, Allahabad.

- Mehrotra, S. N., Labour Problems in India, S. Chand and Co., New Delhi.
- Miller, C. Delbert and William H. Form, Industrial Sociology, Harper and Row Publishers, New Delhi.
- Ramanujan, G., Indian Labour Movement, Sterling Publishers, New Delhi.
- Reddy, Ram, Industrial Relations in India, Mittal Publications, New Delhi.
- Sanjivaygya, D., Labour Problems and Industrial Development in India, Oxford and IBH, New Delhi.
- Schneider, E., Industrial Sociology, Tata McGraw-Hill Publishing Co., New Delhi.
- Vaid, K. N., Labour Welfare in India, S. R. C., New Delhi.
- Prashad, J. 2012. " Industrial Sociology" Vayu Education.
- Singh, N. , 2012. "Industrial sociology" Rawat publication.
- Subramanya, G. 2015. "Principles of Industrial Sociology". Sapna book house Bangalore.
- Millen, D. and Form, W. 1980. " Industrial Sociology: Work in organizational life". Joana cotler Books.
- अग्रवाल और छापड़ियाए2015: औद्योगिक समाजशास्त्र, एस0बी0पी0डी0 पब्लिशिंग हाउस।
- झा विश्वनाथ (2012) “औद्योगिक समाजशास्त्र, रावतपब्लिकेशन।

Suggested Online Link:

MOOC platforms such as “SWAYAM” in India and Abroad.

Suggested equivalent online courses:

IGNOU & Other centrally/state operated universities MOOC platforms such as “SWAYAM” in India and Abroad.

This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:

Course Prerequisites:

CERTIFICATE COURSE IN UG (Arts)		
Programme: <i>Certificate Course in UG(Arts)</i>		Year: I Semester: II
Subject: Sociology		
Course Code: UGSOC-CC201	Course Title: Indian Social System	
Course Outcomes:		
<ul style="list-style-type: none"> • Students will be able to develop in-depth understanding and get detailed insight into the past and contemporary Indian Society. • Students will be familiarized about the Traditional Social Institutions of Indian Society in context of continuity and change. • The programme seeks to build among students the sociological knowledge and analytical skills that would enable them to think critically about Indian society and emerging social issues. • The ability to formulate effective and convincing written and oral arguments about issues and challenges within Indian Society. 		
Credits: 06		Core Compulsory
Max. Marks: 100		Min. Passing Marks: As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Features of Indian Society: Unity in Diversity, Diversities in Indian society and culture, Causes and Consequences of diversities, India as a Pluralistic Society: Concept, Evolution of India as Plural society, Present bases of Plural society in India, Problems of Plural society in India.	15
Unit II	Dharma, Varna ashram vyavastha: Meaning, Characteristics, Types and Sociological Importance of Varna Vyavastha ; Purushartha: Meaning, Forms, Sociological Importance of Purushartha ; Sanskar: Meaning, Objectives, Major Sanskar of Hindu Life, Sociological Importance of Sanskar ; Doctrine of Karma.	24
Unit III	Marriage: Concept, Objectives, Marriage among Hindus and Muslims: Meaning, Traditional Forms. Family: Definitions, Types of Family, Functions of Family. Caste: Meaning, Characteristics and Theories of origin: Traditional Theory, Racial Theory, Occupational Theory, Brahminic Theory, Religious Theory, Merits and Demerits of Caste System. Kinship: Definitions, Types, Kinship Terms, Kinship Usages and Social Significance of Kinship.	24
Unit IV	Jajmani System: Meaning, Structure and Functioning, Importance, Change in Jajmani System.	12
Unit V	Social Legislations: Constitutional provisions in favour of Dalits, Tribes and other Backward Classes, Women and Children.	15

Suggested Reading:

- Ghurye, G.S, "Caste class and Occupation", Popular publishers Bombay, 1961
- Goode, William J, "The Family", Prentice Hall, New Delhi, 1965
- Kapadia, K.M, "Marriage and Family in India", Oxford University Press, 1996
- Srivastava, A.K, "Class and Family in India", Chung Publication, Allahabad, 1986
- Prabhu, P.H, "Hindu Social Organization", Sage Publications India Private Ltd, 2016
- Wiser, W, "The Hindu Jajmani System", Munshiram Manoharlal Publishers, 1998
- Srinivas, M.N, "Caste in Modern India", Asia Publishing House, London, 1970
- आहूजा राम, 'सामाजिक व्यवस्था' रावत पब्लिकेशन्स, जयपुर।
- सिंह जे०पी०, 'समाजशास्त्र के मूल तत्व' 2011. पी०एच०आई०।

Suggested Online Link:

MOOC platforms such as "SWAYAM" in India and Abroad.

Suggested equivalent online courses:

IGNOU & Other centrally/state operated universities MOOC platforms such as "SWAYAM" in India and Abroad.

This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:**Course Prerequisites:**

CERTIFICATE COURSE IN UG (Arts)		
Programme: <i>Certificate Course in UG(Arts)</i>		Year: I Semester:II
Subject: Sociology		
CourseCode: UGSOC- V/SD202	Course Title: Gender Sensitization (Vocational/Skill Development)	
Course Outcomes:		
<ul style="list-style-type: none"> • Sensitize students to issues related to gender and equality among all sexes. • Provide them with the tools and skills to develop and integrate a gendered perspective in work and life. 		
Credits: 03	Vocational/Skill Development	
Max. Marks: 100	Min. Passing Marks: As per University Rules	
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Understanding Gender 1.1 Sex 1.2 Gender 1.3 Gender Identity: Masculinity and Femininity 1.4 Gender Roles	16
Unit II	Social Construction of Gender 2.1 Family 2.2 Marriage 2.3 Education 2.4 Religion.	20
Unit III	Gender and Work 3.1 Household Work 3.2 Invisible Work 3.3 Women in Organized and Unorganized Sector 3.4 Gender Division of Labour.	20
Unit IV	Gender Issues 4.1 Health 4.2 Violence 4.3 Sex ratio 4.4 Media.	19

Suggested Reading:

- KamlaBhasin,. 2000. What is Patriarchy, New Delhi : Kali for women.
- Kamla Bhasin.1999. Some Questions on Feminism, New Delhi: Kali for women,
- Neera Desai, and Krishnaraj Maithreyi.1987. Women and Society in India, New Delhi: Ajanta Publications.
- Ann Oakley. 1972. Sex Gender and Society, New York: Harper and Row.
- Neera Desai and Usha Thakkar. 2003. Women in Indian society, New Delhi: NBT.

- VishavRaksha. 2008. 'Domestic Violence: A Sociological Insight', Literati- A multidisciplinary.
- 7V. Geetha, 2002. Gender, Calcutta: Stree.
- V.Geetha, 2007. Patriarchy, Calcutta: Stree.
- Government of India. 1975. Towards Equality -A Report of the committee on the Status of Women in India. New Delhi: Ministry of Education & Social Welfare.
- R. Indira. (ed). 1999. Gender & Society in India. Delhi: Manak Publications.
- U. Kalpagam, 1994. Labour and Gender, New Delhi : Sage Publications.
- M.Krishnaraj and K.Chanana 1989. Gender & the Household domain, New Delhi : Sage Publications.
- Radha Kumar. 1998. History of Doing, New Delhi: Kali for women.

Suggested Online Link:

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Suggested equivalent online courses:

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This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:

Course Prerequisites:

DIPLOMA COURSE IN UG ARTS		
Programme: DIPLOMA COURSE IN UG ARTS		Year: I Semester: III Paper-I
Subject: Sociology		
Course Code: UGSOC-CC301	Course Title: Indian Social Problems	
Course Outcomes:		
<p>The syllabus is designed to introduce students to the emerging social problems, the concept and issues of development in Indian Society. The course intends to focus upon the deviant and delinquent behaviour, issue of corruption and other disorganizational and structural problems of the Indian Society. The end aim of the course is to make learners aware about the social problems and developmental issues in the Indian Society.</p>		
Credits: 06		Core Compulsory
Max. Marks: 100		Min. Passing Marks :As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Social Problems: Concept, Characteristics, Types, Causes.	15
Unit II	Poverty: Concept and Types, Causes and Effects, Poverty Alleviation Programmes : Integrated and Rural Development Programmes, Indira Avas Yojna, Sampoorn Grameen Rojgar Yojna and MGNREGA.	15
Unit III	Unemployment: Concept and Definition, Types, Causes and Effects.	15
Unit IV	Family Problems: Domestic Violence, Dowry, Divorce, Problems of Elderly People.	15
Unit V	Structural Problems: Caste Inequality, Problems: Religious, Ethnic and Regional.	15
Unit VI	Deviance: Concept and Meaning, Crime and Juvenile Delinquency, White Collar Crime, Cyber Crime.	15

Suggested Reading:

- Ahuja, R, “Social Problems in India”, Rawat Publication, Jaipur, 2020
- Chandru, B, “Communalism in Modern India”, Vikas Publication, New Delhi, 1974
- Merton, R. and Nisbet R, “Contemporary Social Problems”, Saunders college Publishing USA 1976
- Gupta K. and Tomar N, “Indian Woman: Problems and Prospects”, Kala Publication, India, 2013
- Cloward, R, Delinquency and Opportunity, 1960
- Charles, L. C., Michael, W. F., Crime and Deviance: Essays and Innovations of Edwin M Lemert, 2000
- Cohen, Albert, K., Delinquent Boys: The Culture of the gang, 1955
- H, Travis, Causes of delinquency, 1969
- E, Sutherland, D. Cressey, D. F., Luckenbill, Principles of Sociology, 1934
- Betellie, Andre, “Social Inequalities”, Oxford university Press, New Delhi, 1974
- Gill, S. S., The Pathology of Corruption, 1988
- Lewis, Oscar, Culture of Poverty, Scientific American, Vol. II & V, 1966
- Gadgil, Madhav and Gupta, Ramchandra, Ecology and Equality: The Use and Abuse of Nature in Contemporary India, 1996
- Berreman, G.D, Caste and other Inequalities: Essays in Inequality, 1979
- आहूजाराम (2016), सामाजिकसमस्याएं, रावतपब्लिकेशन।

Suggested equivalent online courses:

IGNOU & Other centrally/state operated universities/ MOOC platforms such as “SWAYAM” in India and Abroad.

Suggested Online Link:

MOOC platforms such as “SWAYAM” in India and Abroad.

This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:**Course Prerequisites:**

Diploma Course in UG (Arts)		
Programme: . Diploma Course in UG(Arts)		Year: II
Subject: Sociology		
CourseCode: UGSOC- ME302	Course Title: Applied Sociology	
Course Outcomes: The Objective of this Paper is to help students acquire an appreciation of the potential application of the discipline.		
Credits: 04		Elective Minor II
Max. Marks:		Min. Passing Marks: As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Applied Sociology: Concept, Nature and Scope of Applied Sociology, Importance of Applied Sociology- Formulation of Social Policy, Social Planning and Resolution of Social Problem.	15
Unit II	Social Policy: Concept, Characteristics and Formulation of Social Policy.	15
Unit III	Social Planning: Meaning and Objectives-Social Welfare (Child welfare, Women Welfare, Labour Welfare and Welfare of SC, ST and OBC), Social Reconstruction of Effective Planning, Limitations of Social Planning.	15
Unit IV	NGO: Meaning, Importance and Role of NGOs in Social Development.	15

Suggested Reading:

- Gillian and Ditter, “Social Problems”, Generic, 1928
- Ford, J, “Social Problems and Social Policy”, Ginn, Boston London, 1930
- Lewis, D, “Non-Governmental Organization: Management and Development”, Routledge, USA, 2014, 3rd edition
- Walsh and Furfey, “Social Problems and Social Action”, Prentice-Hall, New Jersey, 1958

Suggested Online Link:

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This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:

Course Prerequisites:

Diploma Course in UG Arts		
Programme: Diploma Course in UG Arts		Year: II
Subject: Sociology		
Course Code: UGSOC-CC401	Course Title: Social Control	
Course Outcomes:		
<p>1.This paper is designed to aware the students about the concept of social control from sociological lens.</p> <p>2.It will help the students to grasp the concepts like- Social Control, self-control, socializationand maladjustment.</p> <p>3.Explain the main concepts and propositions of sociological theories of social control.</p>		
Credits: 06		Core Compulsory
Max. Marks: 100		Min. Passing Marks: As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Social Control: Meaning, Definition, Characteristics, Importance and Functions.	15
Unit II	Types of Social Control: Direct and Indirect; Positive and Negative; Organized and Unorganized.	15
Unit III	Informal means of Social Control: Customs, Norms, Values, Folkways and Religion.	15
Unit IV	Formal means of Social Control: Education and Law.	15
Unit V	Agencies of Social Control: Family, State, Educational Institutions and Public Opinion.	15
Unit VI	Theories of Social Control: Karl Mannheim, C. H. Cooley, and Kimball Young.	15

Suggested Reading:

- Lowie, Robert, H; Social Organisation, Landon Routledge and Kegan Paul.
- Roneck, Joseph,S; Social Control, Nostr and Company.
- Malinowski, B.: Magic, Science and Religion and Other Essays, Glencoe.
- Ross, E.A.: Social Control: The MacMillan Co., New York.
- Rajendra K. Sharma, Social Change & Social Control, Atlantic Publisher.
- HichelleInderbitzin, Kristin A Bate Deviance & Social Control : A Sociological Perspective , , Sage Publication
- Jones J. Chriss Social Control : An Introduction , Polity Publishers
- भरत अग्रवाल, सामाजिक नियंत्रण एवं परिवर्तन एस0बी0पी0डी0 पब्लिकेशन।
- रामनाथ शर्मा, सामाजिक परिवर्तन और सामाजिक नियंत्रण, अटलांटिक पब्लिशर।

Suggested Online Link:

MOOC platforms such as “SWAYAM” in India and Abroad.

Suggested equivalent online courses:

IGNOU & Other centrally/state operated universities MOOC platforms such as “SWAYAM” in India and Abroad.

This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:

Course Prerequisites:

CERTIFICATE COURSE IN UG (Arts)		
Programme: <i>Certificate Course in UG(Arts)</i>		Year: I Semester:IV
Subject: Sociology		
CourseCode: UGSOC- V/SD402	Course Title: Techniques of Social Research	
Course Outcomes: The course 'Techniques of Social Research' aims to enhance the skills of students to understand different techniques of Data collection in Social Sciences. With emphasis on data distribution, Tabulation, analysis and Interpretation of data, it will provide students some basic knowledge regarding diagrammatic and graphic presentation of data. It is structured in a way that it develops a basic understanding about use of elementary statistics in social research.		
Credits: 03		Minor :Vocational /Skill Development Course
Max. Marks:		Min. Passing Marks: As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Data Collection: Primary and Secondary Source of Data, Data Distribution, Tabulation, Analysis and Interpretation of Data.	15
Unit II	Presentation of Data- A) Diagrammatic Presentation of Data : 1- Objectives of Diagram 2- Utility and limitations of Diagrams 3- Types of Diagrams a) Line Diagram b) Simple Bar Diagram c) Multiple Bar Diagram B) Graphic Presentation of Data : 1- Rules for the Constructions of Graphs 2- Types of Graphs a) Histogram b) Frequency Polygon c) Frequency curve	15
Unit III	Statistical Analysis of Data: frequency distribution, Measures of central tendency- Mean Median and Mode.	15

Suggested Reading:

- P.V. Young, 1988 Scientific Social Survey and Research, Prentice Hall, N. Delhi.

- C.R. Kothari, 1989 Research Methodology: Methods and Techniques, Wile Eastern, Bangalore.
- Ram Ahuja, 2006 Research Methods, Rawat Publications.
- Goode & Hat, 1952 Methods in Social Research, McGraw Hill, New York.
- Wilkinson and Bhandarkar, 2010 Methods and Techniques of Social Research, Himalayan Publishing House, New Delhi.
- Jaspal Singh. 2011: Instruments of Social Research Jaipur: Rawat Publications.
- S.P. Gupta. 1969: Statistical Methods: New Delhi: Sultan Chand & Sons
- Levin Jack, 1983 Elementary Statistics in Social Research, Harper and Row Publishers, New York.
- Raj H. 2005, Theory and Practice in Social Research, Surjeet Publication, Delhi.

Suggested Online Link:

MOOC platforms such as “SWAYAM” in India and Abroad.

Suggested equivalent online courses:

IGNOU & Other centrally/state operated universities MOOC platforms such as “SWAYAM” in India and Abroad.

This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:

Course Prerequisites:

Bachelor Degree in UG (Arts)		
Programme: Bachelor Degree in UG (Arts)		Year: III Semester: V Paper-I
Subject: Sociology		
Course Code: UGSOC- CC501	Course Title: Development of Sociological Thought	
Course Outcomes:		
<ol style="list-style-type: none"> 1. To understand the basic requisites of development of Sociology as a discipline. 2. To analyze the work of classical thinkers and their contribution in the field of Sociology. 3. The knowledge of the thinkers (A. Comte, K. Marx, M. Weber & E. Durkheim) would equip the students with theoretical insights to social scenario around them & would familiarize them with different perspectives and theories. 4. Students can distinguish between macro level sociological perspectives, can specify the theoretical components of each perspective, and connect each perspective to their historical and contemporary theorists 5. To understand the emergence of intellectual traditions and also its effects upon the society. 		
Credits: 05		Core Compulsory
Max. Marks: 100		Min. Passing Marks: As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Emergence of Sociology, Intellectual Source: Enlightenment, French and Industrial Revolution.	15
Unit II	August Comte: Biographical Sketch, The Hierarchy of Sciences, Law of Three Stages.	15
Unit III	Emile Durkheim: Biographical Sketch, Social Fact, Mechanical Solidarity and Organic Solidarity, Suicide.	15
Unit IV	Karl Marx: Biographical Sketch, Historical Materialism, Class Struggle, Alienation.	15
Unit V	Max Weber: Biographical Sketch, Social Action, Power and Authority, Bureaucracy.	15

Suggested Reading:

- Max Karl, Communist Manifesto, Progress Publishers, Moscow 1967.
- Rawat H.K, Sociological Thinkers and Theorists, Rawat Publication, Jaipur 2001.
- Ross. E.A, The foundation of Sociology, The Macmillan Co, New York 1956.
- Weber. M, The Protestant Ethic and the spirit of Capitalism, Unwin Univ. Books 1965.
- Steven. L, Durkheim life and works: A critical study 1973.
- Morrison Ken, Marx, Durkheim. Weber, Formation of modern social thought, Sage Publication New Delhi 1995.
- Durkheim. E, The Elementary forms of religious life, The Free Press 1860.
- Giddens. A, Sociology, Polity Press Cambridge 1989.
- Comte August, A General view of Positivism, Turner and co. 1865 (Reissued by Cambridge University Press, 2009)
- Lewis A Coser, Master of Sociological Thought Harcourt Brace Jovanovich 1977.
- Aron, Raymond. Main Currents in Sociological Thought, Penguin Books 1967.
- .H. Haralambos. Sociology - Themes and Perspectives. Oxford University Press. 1980
- Abraham Francis Sociological Thought , Macmillan Publishers India 1985.
- णदोषी0 एम0 एल0 एंव जैन, प्रमुख समाज शास्त्रीय विचारक, रावत वब्लिकेशन 2001.

Suggested Online Link:

MOOC platforms such as “SWAYAM” in India and Abroad.

Suggested equivalent online courses:

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This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:**Course Prerequisites:**

Bachelor Degree in UG(Arts)		
Programme: Bachelor Degree in UG (Arts)		Year: III
Subject: Sociology		
Course Code: UGSOC-CC502	Course Title: Research Methodology in Sociology	
Course Outcomes:		
<p>The course of 'Research Methodology in Sociology' is structured in a way that it makes students to understand and use techniques employed by social scientists to investigate social phenomena. This course aims to enhance the skills of students to understand procedure of Social Survey and scientific research. With emphasis on formulation of significant hypothesis, Techniques of Data collection and Sampling Techniques, it will provide students some basic knowledge on Elementary Statistics.</p>		
Credits: 05		Core Compulsory
Max. Marks: 100		Min. Passing Marks: As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Social Research: Meaning and Characteristics. Steps of Scientific Research. Social Survey: Concept, Characteristics and Planning of Social Survey.	15
Unit II	Hypothesis: Meaning and Characteristics, Sources of Hypothesis formulation, Importance of Hypothesis in Social Research.	15
Unit III	Data- Meaning and Types of Data: Primary and Secondary Data. Techniques of Data collection- Questionnaire and Schedule: Concept, Characteristics and Types, Observation and Interview: Concept and Types, Importance and Limitations.	15
Unit IV	Census and Sampling: Meaning and Characteristics, Types of Sampling: Simple Random Sampling, Stratified Random Sampling, Purposive Sampling.	15
Unit V	Elementary Statistics: Meaning, Importance and Limitations, Measurement of Central Tendencies: Meaning, Utility and Limitations of Central Tendency, Calculation of Mean, Median and Mode.	15

Suggested Reading:

- P.V. Young, 1988 Scientific Social Survey and Research, Prentice Hall, N. Delhi.
- C.R. Kothari, 1989 Research Methodology: Methods and Techniques, Wile Eastern, Bangalore.
- Ram Ahuja, 2006 Research Methods, Rawat Publications.
- Goode & Hat, 1952 Methods in Social Research, McGraw Hill, New York.

- Wilkinson and Bhandarkar, 2010 Methods and Techniques of Social Research, Himalaya Publishing House, New Delhi.
- Jaspal Singh. 2011: Instruments of Social Research Jaipur: Rawat Publications.
- Giddens Anthony, 1976: New Rules of Sociological Research.
- Black and Champion. (1976) Methods and Issues in Social Research.
- Raj H. 2005, Theory and Practice in Social Research, Surjeet Publication, Delhi.
- S.P. Gupta. 1969: Statistical Methods: New Delhi: Sultan Chand & Sons
- Levin Jack, 1983 Elementary Statistics in Social Research, Harper and Row Publishers, New York.

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Suggested equivalent online courses:

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This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:

Course Prerequisites:

Bachelor Degree in UG (Arts)		
Programme: Bachelor Degree in UG (Arts)		Year: III
Subject: Sociology		
CourseCode: UGSOC-RP503	Course Title: Research Project/Industrial Training/ Survey	
Course Outcomes:		
The syllabus is designed to introduce students to get them engaged in the field work and project work so that they are equipped with the practical knowledge about the field work and research project. This will be an empirical learning for those who aspire to become future social scientist.		
Credits: 04		Qualifying
Max. Marks:		Min. Passing Marks: As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Knowing about the field work, selection of research problem for research project and field work.	15
Unit II	Research Design, Use of Census and Sampling methods.	15
Unit III	Estimation of Resources: Time, money, Human resource, conducting field Survey, Necessary gadgets and Equipments.	15
Unit IV	Classification and tabulation of Data, Presentation of data, Report writing.	15

Suggested Reading:

- Goode and Hatt, "Method in Social Research", McGraw Hill, New York, 1952
- Young, P.V, "Scientific Social Survey and Research", Prince Hall, New Delhi, 1988
- Ahuja, R, "Research Methods", Rawat Publication, Jaipur, 2008
- Bryman, A, "Social Research Method", Oxford University Press, 2001

Suggested Continuous Education methods:

Project life evaluation, main focus on presentation, content and proper use of research methodology, Viva.

Suggested equivalent online courses:

IGNOU and other centrally/ state operated Universities/ MOOC Platforms such as SWAYAM in India and abroad.

Suggested Online Link:

MOOC platforms such as “SWAYAM” in India and Abroad.

Suggested equivalent online courses:

IGNOU & Other centrally/state operated universities MOOC platforms such as “SWAYAM” in India and Abroad.

Guidelines for research project Dissertation

The learner has to prepare and submit a dissertation under the guidance of a faculty. The learner need to be expected to make a major/ Outstanding contribution to knowledge. The learner is to engage meaningfully in the process of problem- formulation; reviewing some literature related to the study; preparing the research proposal; choosing an appropriate research strategy and developing instruments of data collection; collecting the data; and preparing the research report.

The length of the research project may be around 50 pages and not to exceed 100 pages; the graphic presentation and tabular presentation together may not exceed 20.

This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:

Course Prerequisites:

Bachelor Degree in UG(Arts)		
Programme: Bachelor Degree in UG (Arts)		Year: III Semester: VI Paper-I
Subject: Sociology		
CourseCode: UGSOC- CC601	Course Title: Indian Sociological Thought	
Course Outcomes:		
<p>1.To understand emergence and development of sociology as a discipline in India influenced by the growth of Nationalism.</p> <p>2.To understand the philosophical foundations of Sociology and its application.</p> <p>3.Elucidate conceptual clarity and articulate the main debates/arguments with regards to Sociology in India.</p> <p>4. Apply the sociological imagination and sociological concepts and principles to her/his own life.</p> <p>5. The course, in terms of both high-quality syllabus-content and innovative teaching, learning techniques, matches global standards. Consequently, it adequately trains students to compete in global academia.</p>		
Credits: 05		Core Compulsory
Max. Marks: 100		Min. Passing Marks: As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Development of Sociology in India: Sociology in Pre-Independence India, Sociology in Post- Independence India.	15
Unit II	G.S. Ghurye: Biographical Sketch, Caste, Rural-Urban Community.	15
Unit III	Radhakamal Mukherjee: Biographical Sketch, Social Structure of values, Social Ecology.	15
Unit IV	M.N. Srinivas: Biographical Sketch, Sanskritization, Westernization, Secularization.	15
Unit V	A. R.Desai: Biographical Sketch, Social Background of Indian Nationalism, Marxist Approach to Study Indian Society.	15

Suggested Reading:

- Ghurye G.S, Caste, Class and Occupation, Popular Book Depot 1961.
- Ghurye G.S, The Indian Sadhus, Popular Book Depot 1964.
- Mukherjee RadhaKamal, The Social structure of value, Macmillan London 1949.
- Mukherjee RadhaKamal, Social Ecology, Oxford University Press 1945.
- Mukherjee D.P, Problems of Indian Youth, Hind Kitab 1946.
- Mukherjee D.P, Modern Indian Culture, Indian Publishers 1942.
- Srinivas M.N; Caste in modern India and other essays, Bombay Asia Publishing House 1962.
- Srinivas M.N, Social change in modern India, Orient Blackswan 1966.
- Desai A.R, Social Background of Indian Nationalism, Bombay Oxford University Press 1949.
- Nagla B.K, Indian Sociological thought, Rawat Publication Jaipur, 2008.
- Dhanagare D.N, Themes and Perspectives in Indian Sociology, Rawat Publication Jaipur, 1993.
- Sharma Surendra, Sociology in India : A Perspective from Sociology of Knowledge, Jaipur; Rawat Publication 1985.
- देसाई ए0आर0, भारतीय ग्रामीण-समाजशास्त्र, रावत पब्लिकेशन्स जयपुर 1997.
- नागला बी0के0, भारतीय समाजशास्त्रीय चिन्तन, रावत पब्लिकेशन्स जयपुर 2015.
- दोषी एस0एल0, भारतीय सामाजिक विचारक, रावत पब्लिकेशन्स जयपुर 2010

Suggested Online Link:

MOOC platforms such as “SWAYAM” in India and Abroad.

Suggested equivalent online courses:

IGNOU & Other centrally/state operated universities MOOC platforms such as “SWAYAM” in India and Abroad.

This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:**Course Prerequisites:**

Bachelor Degree in UG(Arts)		
Programme: Bachelor Degree in UG (Arts)		Year: III
Semester: VI Paper-II		
Subject: Sociology		
CourseCode: UGSOC- CC602	Course Title: Social Change	
Course Outcomes:		
This Paper is designed in a manner, so that students are introduced to the concepts related to Social change and Social Movement. This course will introduce students to the dynamic aspect and dissension tendencies of society. The critical evaluation would enable students to come out with better suggestions, contributing in cohesion of society.		
Credits: 05		Core Compulsory
Max. Marks: 100		Min. Passing Marks: As per University Rules
Total No. of Lectures-Tutorials-Practical (in hours per week): 4-0-0		
Unit	Topic	No. of Lectures
Unit I	Social Change: Concept and Characteristics, Patterns of Social Change: Linear and Cyclical, Social Change and Cultural Change.	15
Unit II	Factors of Social Change: Biological, Demographic, Economic, Technological and Cultural.	15
Unit III	Modes of Social Change: Evolution, Progress, Development and Revolution.	15
Unit IV	Theories of Social Change: Vilfred Pareto, Oswald Spengler, P.A. Sorokin, A.J. Toynbee.	15
Unit V	Social Mobility: Concept, Characteristics, Types.	15

Suggested Reading:

- Gillin and Gillin; Cultural Sociology, The Macmillan Co.; New York.
- Hobhouse, L.T.; Social Development, New York, Henry Holt & Co.
- Ogburn, W.F.; Social Change, Calverton, B.V. edit, New York.
- Moore, Wilbert E., Social Change, Prentice-Hall, Englewood Cliffs.
- Sorokin, P.A., Social and Cultural Dynamics (4 Vols.), American Book Company, New York.
- Spengler, Oswald J., Decline of the West (trans. C.F. Atkinson), Alfred A. Knoff, New York.

- Singh, Yogendra, Social Stratification and Change in India, Manohar Publishers and Distributors, New Delhi.
- Srinivas, M. N., Social Change in Modern India, Orient Longman, New Delhi.
- Singh, Yogendra, Modernization of Indian Tradition, Thomson Press, Delhi.
- Gore, M. S., Urbanization and Family Change, Popular Prakashan, Bombay.
- Singer, Milton (Ed.), Traditional India: Structure and Change, Rawat Publications, Jaipur.
- Sovani, N. V., Urbanization and Urban India, Asia Publishing House, New York.

Suggested Online Link:

MOOC platforms such as “SWAYAM” in India and Abroad.

Suggested equivalent online courses:

IGNOU & Other centrally/state operated universities MOOC platforms such as “SWAYAM” in India and Abroad.

This course can be opted as an elective by the students of following subjects:

Suggested Continuous Evaluation:

Course Prerequisites:

Bachelor Degree in UG(Arts)

Programme: Bachelor Degree in UG (Arts)

**Year:
III**

**Semester:VI
Paper-II**

**Subject:
Sociology**

**CourseCode:
UGSOC-RP603**

**Course Title: Research Project on Contemporary Social
Issues**

Course Outcomes:

This Paper is designed in a manner so that students will get an in-depth understanding of socio-cultural realities of Indian Society and culture.

Department Of Sociology
Sri Dev Suman Uttarakhand University, Badshahi Thaul, Tehri Garhwal
Course: M.A (Sociology)

Semester: I

Course Code	Title of The Course	Maximum- Marks
SOC/C001	Introduction to Sociology	80 + 20
SOC/C002	Traditional Sociological Thinkers	80 + 20
SOC/C003	Research Methodology	80 + 20
SOC/C004	Political Sociology	80 + 20

Semester: II

Sub Code	Title Of The Course	Maximum- Marks
SOC/C005	Indian Sociological Thought	80 + 20
SOC/C006	Contemporary Indian Society- Tradition and Change	80 + 20
SOC/C007	Social Psychology	80 + 20
SOC/C008	Social Demography	80 + 20
SOC/C009	Viva-Voce	100

Semester: III

Sub Code	Title Of The Course	Maximum-Marks
SOC/C010	Classical Sociological Thinkers	80 + 20
SOC/C011	Research Techniques & Statistical Analysis	80 + 20
SOC/E012A	Social Anthropology	80 + 20
SOC/E012B	Industrial Sociology	80 + 20
	OR	
SOC/E013A	Indian Social Problems	80 + 20
SOC/E013B	Sociology of Environment	80 + 20

Semester: IV

Sub Code	Title Of The Course	Maximum- Marks
SOC/C014	Modern Sociological Theory	80 + 20
SOC/C015	Sociology of Planning & Development	80 + 20
SOC/E016A	Women and Society	80 + 20
SOC/E016B	Sociology of Crime	80 + 20
	OR	
SOC/E017A	Urban Sociology	80 + 20
SOC/E017B	Religion and Society	80 + 20
SOC/ E018 A	Dissertation	80 + 20
	OR	
SOC/ E018 B	Viva-Voce	100

Syllabus for M.A. (Sociology) in the Semester System

Semester-I

Paper-I

Introduction to Sociology

Course Code: SOC/C001

Maximum Marks: 80

Unit—I

Nature of Sociology: Definition, Sociological Perspectives: Basic Concepts Society, Community, Culture, Norms and Values.

Unit—II

Social Structure and Social Groups: Structure, Status and Role: Their Interrelation, Multiple Roles, Role Set: Status Set) Role Conflict.

Social Groups: Meaning and Types: Primary, Secondary, in-group and Out-group, Reference Group.

Unit—III

Social Institutions: Family, Education, Economy, Polity and Religion.

Unit—IV

Social Processes: Socialization: Concept, Agencies and Theories, Social Stratification.

Social Change: Meaning, Types and Forms.

Readings:

Berger, Peter (1963), Invitation to Sociology: A Humanistic Perspective, New York, Doubleday.
Bottomore, T.B. (1972), Sociology – A Guide to problems and Literature, Bombay: George Allen and Unwin.

Davis, Kingsley (1981), Human Society, New Delhi: Surjeet Publications.

Giddens, Anthony (1989), Sociology, Oxford University: Polity Press.

Harlambos, M. (1998), Sociology – Themes and Perspectives, New Delhi: Oxford University Press.

Inkeles, Alex (1987), What is Sociology? New Delhi: Prentice Hall.

Jayaram, N. (1988), Introductory Sociology, Madras: McMillan India.

Johnson Harry M. (1995), Sociology – A Systematic Introduction, New Delhi: Allied Publishers.

Maclver, R.M. and H. Page (1974), Society – An Introductory Analysis, New Delhi : McMillan.

Smelser, N.J. (1993), Sociology, New Delhi, Prentice Hall of India.

Paper-II

Traditional Sociological Thinkers Course Code: SOC/C002

Maximum Marks: 80

Unit – I

Auguste Comte – Positivism, Law of Three Stages, Contribution to the Subject matter of Sociology: Social Static and Social Dynamics.

Unit – II

Emile Durkheim: Division of Labour in the Capitalist Society, Mechanical and Organic Solidarities, Theory of Religion: Sacred and Profane. Contribution to the Methodology of Sociology: Concept of Social Fact.

Unit – III

Karl Marx: Marx's Theory of Social Change: Dialectical Materialism as a Perspective of Explaining Transformation of Human Society through Different Stages, Class and Class Conflict, Alienation and its Social Implications.

Unit – IV

Max Weber: Theory of Social Action and its types. Analysis of Modern Capitalism; Protestant Ethics and Spirit of Capitalism. Power, Status and Authority: Authority and its types. Theory of Bureaucracy.

Readings:

- Adams Bert N. and Sydie, R.A. (2001), *Sociological Theory*, New Delhi: Vaster Publication.
- Aron Raymond (1967), *Main Currents in Sociological Thought*, Vol. 1 and 2, Penguin, Chapters on Marx, Durkheim and Weber.
- Bendix, Rinehart (1960), *Max Weber, an Intellectual Portrait* (For Weber) Double Day.
- Coser, L.A. (1977), *Master of Sociological Thought*, New York: Harcourt Brace, pp. 43-87, 129-174, 217-260.
- Dehrendorf, Ralph (1959), *Class and Class Conflict in an Industrial Society*, Stanford University Press.
- Giddens, Anthony (1977), *Capitalism and Modern Social Theory- An analysis of Writing of Marx, Durkheim and Weber*, Cambridge University Press, Whole Book.
- Hughes, Jhon, A. Martin, Perer, J. and Sharrok, W.W. (1995) *Understanding Classical Sociology- Marx, Durkheim and Weber*, London: Sage Publication.
- Nisbet, Robert (1996), *The Sociology Tradition*, London: Heinemann Education Books Ltd.
- Parsons Talcott (1949), *The Structure of Social Action*, New York, McGraw Hill.

Popper Karl (1945), *Open Society and its Enemies*, London, Rutledge.
Ritzer, George, (1992), (3rd edition), *Sociological Theory*, New York, McGraw Hill.
Turner, Jonathan H. (1995) (4th edition), *The Structure of Sociological Theory* Jaipur: Rawat Publication.
Zeitlin Irving M. (1981), *Ideology and the Development of Sociological Theory*, Prentice Hall.
Zeitlin, Irving M. (1998), (Indian edition). *Rethinking Sociology: A Critique of Contemporary Theory*, New Delhi: Rawat Publication.

Paper-III
Research Methodology
Course Code: SOC/C003

Maximum Marks: 80

Unit-I

Social Research; Meaning, Nature and Objectives of Research; Type of Social Research; Significance of Research,
Research and Scientific Method, Research Process, Criteria of Good Research.

Unit-II

What is research Problem? Selecting the Problem, Necessity and defining the Problem, Techniques involved in defining the Problem.

Unit-III

Hypothesis: Meaning, Characteristics, and importance of hypothesis in Research, Types and testing of Hypothesis, Problems in Formulating Hypothesis.

Unit-IV

Research Design: Meaning of Research Design, Features of a Good Research Design
Types of Research Design: Exploratory, Descriptive, Diagnostic and Experimental.

Readings:

Ahuja, Ram (2001), *Reserch Methods*, Delhi: Rawat Publications.
Bailey, Kenneth D. (1982), *Method of Social Research*, New York: The Free Press, Second Edition.
Blalock, Hubert M. (1970), *Social Statistics*. New York: Tata Mc-Graw-Hill.

- Champion, Dean. J. (1981), Basic Statistics for Social Research New Delhi: Macmillan Publishing New York.
- Dooley, David (1998), Social Research Methods, Prentice-Hall of India, New Delhi.
- Goode, W.J. and Hatt. P.K. (1952), Methods in Social Research, New York: McGraw International Students Edition.
- Gupta, S.P. (2002), Statistical Methods, New Delhi: Sultan Chand and Sons Publication.
- Kothari, C.R. (1988), Research Methodology, Wiley Publishers, New Delhi.
- Mosser, S.C. and G. Kalton (1971), Survey Methods in Social Investigation, London: Heinmann.
- Seltiz, Claire et al (1959), Research Methods in Social Relation, New York: Henry Holt and Co.
- Srinivas, M.N. and A.M. Shah (1979), Fieldworker and The Field, New Delhi: Oxford University Press.
- Thakur, Devender (2003), Research Methodology in Social Science, New Delhi: Deep and Deep Publications Pvt. Ltd.
- Wilkinson, T.S. and Bhandarkar, P.L. (1984), Methodology & Techniques of Social Research, Bombay, Himalaya Publishing House.
- Young, P.V. (1988), Scientific Social Surveys and Research, New Delhi Prentice Hall.

Paper-IV
Political Sociology
Course Code: SOC/C003

Maximum Marks: 80

UNIT-I

Nature and Scope of Political Sociology.

Approaches to Political Sociology: Behavioral, System Analysis and Input-Output approach.

UNIT-II

Power and Authority: Functional Perspective, Marxian Perspective and Community Power Structure.

Elite theory: Concept and Ideology, Power Elite and Circulation of Elites.

UNIT-III

Conditions of democratic order: Economic Development and Democracy Social Class and Democracy.

Caste and Democratic Polity: Conflict and Democracy in India,

UNIT-IV

Political Parties, Leadership and Faction and Interest group- their role in Democratic Structure.

Political Recruitment, Political Socialization and Voting Behaviour

Readings:

Almond and Coleman (1960), *The Politics of Developing Areas*, Princeton University Press.

Almond and Piwell (1972), *Comparative Politics : A Development Approach*, New Delhi.

Aron, Raymond (1967), *Industrial Sociology: Three Essays on Ideology and Development*, New York.

Blondel, Jean (1969), *Comparative Government*, Macmillan.

Bottomore, T.B. (1971), *Elites and Society*, Penguin, Harmond Swarth.

Ball, Alan R. (1978), *Modern Politics and Government*, Macmillan.

Dowse, R.E. and Hughes (J.A.) (1972), *Political Sociology*, London: John Wiley.

Easton, David (1965), *A Framework for Political Analysis*, Englewood Cliffs. Prentic-Hall.

Lipset, S.M. (1959), *Political Man*, London.

Pizzorno, A. (1970), *Political Sociology*, Penguin Books.

Rush, M. (1966), *Political Sociology*, New York.

Nagla, B.K. (1991), *Political Sociology*, Jaipur, Rawat Publication.

Nagla, B.K. (1984), *Factionalism, Politics and Social Structure*, Jaipur, Rawat Publication.

Semester-II
Paper-I
Indian Sociological Thought
SOC/C005

Maximum Marks: 80

Unit – I

Theoretical Issues: Indigenous Social Thought: Sociology in India; Indian Sociology.

Unit – II

Indological / Textual: G.S. Ghurye; Louis Dumont.

& Civilizational: N.K. Bose; Surajeet Sinha

Unit – III

Structural-Functional: M.N. Srinivas; S.C. Dube

Synthesis of Textual and Field views. Irawati Karve; Andre Beteille.

Unit – IV

Marxian: D.P. Mukherji; A.R. Desai

Subaltern: Ranjit Guha; David Hardiman

Readings:

Desai, A.R. (1981), "Relevance of the Marxist Approach to the Study of Indian Society", Sociological Bulletin, 10(1). pp. 1-20

Dhanagare, D.N. (1998), Themes and Perspectives in Indian Sociology, New Delhi, Rawat Publications.

Dumont, Louis (1970), Homo-Hierarchicus: Caste System and its Implications, Chicago.

Ghurye, G.S. (1957), Caste and Class in India, Bombay: Popular Book Depot.

Mukherjee, D.P. (1958), Diversities, Delhi: People's Publishing House.

Singh, Y. (1973), Modernization of Indian Traditions, Delhi: Thomson Press.

Srinivas, M.N. (1960), India's Villages. Bombay: Asia Publishing House.

Bose, N.K. (1977), Culture and Society in India, Bombay: Popular Prakashan.

David, Hardiman (1996), Feeding the Bania: Peasants and Usurers in Western India Oxford University Press.

David, Hardiman (1987), The Coming of Devi: Adivasi Assertion in Western India: Oxford University Press.

Dube, S.C. (1967), The Indian Village, New Delhi: NBT.

Sinha, S. (1974), 'Sociology of Religion: A trend report' in ICSSR'. A Survey of Research in Sociology and Social Anthropology. 11, Bombay: Popular Prakashan.

Jodhka, S.S. (1997), 'From Book view to Field view: Social Anthropological Constructions of the Indian Village'. Oxford Development Studies, 26(3)

Nagla, B.K. (2008), Indian Sociological Thought, Jaipur, Rawat Publications.

Unithan, T.K.N. (1965), (Ed.), Sociology of India, New Delhi, Prentic-Hall of India

Paper-II

Contemporary Indian Society- Tradition and Change SOC/C006

Maximum Marks: 80

Unit-I

Change in the Indian Society during the British Rule in India.

Urbanism and Urbanization in India

Unit-II

Tradition and Modernization.

Role of Elites in the Modernization of Indian Society.

Unit -III

Globalization and Liberalization: Concept and Social Implications.

Processes of Social Mobility among Castes Sanskritization and Westernization.

Unit-IV

Social Mobility among Scheduled Castes and Scheduled Tribes.

Islamization and Modernization in Indian Muslim Society.

Readings:

- Aziz, Abdul, (1994), Poverty Alleviation in India: Policies and Programmes, New Delhi: Ashish Publishing.
- Desai, Neera and Maithreyi Krishna Raj. (1987), Women and Society in India, New Delhi: Ajanta Publishers.
- Desai, Neera & Usha Thakkar (2007), Women in India Society, New Delhi: National Book Trust.
- Dube, S.C. (1967), The Indian Village, New Delhi: National Book Trust.
- Ghurye, G.S. (1957), Caste and Class in India, Bombay: Popular Book Depot.
- Karve, Irawati (1961), Hindu Society: An Interpretation, Poona: Deccan College.
- Prabhu, P.H. (1979): Hindu Society: An Interpretation, Poona: Deccan College.
- Sharma, K.L. (2001), Social Inequality in India, New Delhi: Rawat Publications.
- Srinivas, M.N. (1960), India's Villages. Bombay: Asia Publishing House.
- Srinivas, M.N. (1970), Social Change in Modern India, Berkeley, California: University Press.
- Srinivas, M.N. (1991), India: Social Structure, Delhi: Chaman Offset Printers.
- Mandelbaum, D.G. (1990), Society in India, Berkeley: University of California Press, Vol. I Parts 24 & 4.

Singh, Yogendra. (1983), Modernization of Indian Tradition: A Systematic Study of Social Change, New Delhi: Thompson Press.
C. Parvathamma , Scheduled Castes at the Cross Roads.

Paper-III

Social Psychology SOC/C007

Maximum Marks: 80

UNIT-I

Social Psychology: Meaning, Nature and Scope, Its Relationship with Sociology.
Individual and Society, Psychological basis of Social and Cultural Growth.

UNIT-II

Attitudes: Formation and change, Measurement of Attitudes: Use of different scales
Learning: Concepts and Theories, Motivation: Biogenic and Sociogenic motives

UNIT-III

Public opinion, Propaganda
Prejudice, Stereotype and Rumour

UNIT-IV

Leadership: Nature, Types and Theories
Group Mind: Audience, Crowed and Crowed Behaviour.

Readings:

B.N. Maltzer, W. John & Others (1945), Symbolic Interactionism, Routledge and Kenan Paul Ltd. New Jersey, 1945.

Krech D. and Crutchfield R.S. (1975), Theory and Problems of Social Psychology, McGraw Hill, New York.

Kimball Young (1963), A Hand Book of Social Psychology (Routledge and Kegan Paul Ltd. London, Revised Edition.

Kari Mannheim (1966), Essays on Sociology and Social Psychology, Routledge and Kegan Paul Ltd., London, 3rd Edition.

Lindzey (ed.) (1964), handbook of Social Psychology, Vol. I & II Wiley Publishing Co. The London Third Edition.

Robert R. Evans (1975), Readings in Collective Behaviour, Chicago : Rand Monally College Publishing Co.

T.M. Newcomb (1950), Social Psychology, Drvdon Press, New York.

W.J.H. Sprott (1952), Social Psychology, Methuen and Co. London

Paper-IV

Social Demography SOC/C008

Maximum Marks: 80

UNIT-I

Introduction to Social Demography: Definition, Scope, Sources of Demographic Data: Census, Vital Statistics – Historical Background–Demographic Perspectives: The Malthusian Perspective, Marxist Perspective, Neo-Marxist Perspective, Optimum Population Theory, Demographic Transition Theory.

UNIT - II

Fertility Concepts and Measurements: Concept, Measuring Fertility: Crude Birth Rate, General Fertility Rate, Age-Specific Fertility Rate, Total Fertility rate, Cross Reproduction Rate, Net Reproduction Rate, Theories of Fertility-Determinants of Fertility.

Mortality Concepts and Measurements: Components of Mortality-Measuring Mortality: Crude Death Rate, Age-Specific Death Rate, Determinants of Mortality.

UNIT -III

Migration: Definition-Measuring Migration-Types of Migration: Internal Migration & International migration- Factors for Migration- Theories and Consequences of Migration.

UNIT -IV

Population Growth and Socio – Economic Development in India. Population Policy – Mortality Influencing Policies, Migration Influencing Policies, Fertility Influencing Policies, Pronatal and Antinatalist Policies. India's Population Policy.

Readings:

Asha Bhende & Tara Kanitkar, *Principles of Population Studies*, Himalaya Publishing House, Bombay 2003.

Weeks, John R, 'Population: An Introduction to Concepts and Issues', Belmont, California: Wadsworth, 1977.

Nam, Charles B, 'Population and Society', Boston: Houghton Mifflin, 1968.

Hawthorn, Geoffrey, 'The Sociology of Fertility', London, Collier – Macmillan, 1970.

Heer, David M., 'Society and Population' Englewood Cliffs, Prentice Hall, 1975

Lassande, Louise, *Coping with Population Challenges*, London, Earthscan, 1997.

Massey, Douglas et al., "Theories of International Migration," *Population and Development Review* 19:3, 1993 (available on-line through jstor)

Paper-V**Viva-Voce
SOC/C009****Maximum Marks: 100**

There will be Viva-Voce as a Compulsory full paper. The Viva-Voce will be conducted by one External and one Internal Examiner appointed by the University.

Semester-III
Paper-I
Classical Sociological Thinkers
SOC/C010

Maximum Marks: 80

Unit – I

Herbert Spencer: The Evolutionary Doctrine; Organic Analogy.

Unit – II

V. Pareto: Logical and Non-logical Action, Residues and Derivatives, Circulation of Elites.

Unit – III

P.A. Sorokin: Social Mobility, Social-Cultural Dynamics, Revolution.

Unit – IV

Talcott Parsons: Action Frame of Reference, AGIL Paradigm, Pattern Variables.

R.K. Merton: Function and Dysfunction, Bureaucracy.

Readings:

Barnes, Harry Elmer "AN INTRODUCTION TO THE HISTORY OF SOCIOLOGY", Chicago, University of Chicago Press, 1948.

Coser, Lewis A. "Masters of Sociological Thought", New York, Harcourt Brace Jovanovich, Inc., 1971.

Timasheff, Nicholas S. "Sociological Theory – Its Nature & Growth", New York, Random House, 1967.

Nisbet, Robert A. "The Sociological Tradition", London, Heinemann, 1979.

Bogardus, Emory S. "The Development of Social Thought", Bombay, Vakils, Borrer and Simons Pvt. Ltd., 1960.

Aron, Raymond "Main Currents in Sociological Thought" Vol. 1 & 2, Hammondsworth, Middlesex, Penguin Books, 1965.

Abel, Theodore "The Foundation of Sociological Theory" Indian ed., Jaipur, Rawat Publications, 1980.

Abraham, Francis M. "Modern Sociological Theory: An Introduction", Delhi, Oxford University Press, 1982.

Sorokin Pitrim "Contemporary Sociological Theories". Indian Ed. New Delhi, Kalyani Publishers, 1978.

Morrison, Ken. 1995. *Marx, Weber and Durkheim*, London ; Sage Publications.

Merton, R.K. (1968), Social Theory & Social Structure, Glencoe, Illrd Free Press.

Paper-II
Research Techniques & Statistical Analysis
SOC/C011

Maximum Marks: 80

Unit-I

Sampling Design; Census and Sampling Method, Area of Study, Universe of Study, Sample Design, Steps in Sampling Design, Criteria for Selecting a Sampling Procedure; Characteristics of a Good Sample Design, Types of Sampling Method.

Unit-II

Techniques of Data Collection; Collection of Primary Data; Questionnaire, Schedule, Interview, Observation, Case Study, Survey Method, Content Analysis, Collection of Secondary Data, Historical and Document/oral Sources, Journal and Books.

Unit-III

Analysis and Interpretation of Data, Scrutiny of Secondary Data, Checking of Questionnaire and Schedule, Editing of data, Codification Transcribing, Classification, Tabulation, Comparison and Interpretations. Graphic Presentation of Data – Chart, Histograms, and Graphs.

Unit-IV

Use of Statistics in the Analysis of Data: Mean, Median, Mode, S.D. Correlation.

Readings:

Ahuja, Ram (2001), Research Methods, Delhi: Rawat Publications.

Bailey, Kenneth D. (1982), Method of Social Research, New York: The Free Press, Second Edition.

Blalock, Hubert M. (1979), Social Statistics. New York: Tata Mc-Graw-Hill.

Champion, Dean. J. (1981), Basic Statistics for Social Research New York: Macmillan Publishing.

Goode, W.J. and Hatt, P.K. (1952), Methods in Social Research, New York: McGraw International Students Edition.

- Gupta, S.P. (2002), *Statistical Methods*, New Delhi: Sultan Chand and Sons Publication.
- Kumar Ranjit (2006), *Research Methodology: A Step-by-step Guide for beginners*, Australia, Pearson Education.
- Moser, S.C. and G. Kalton (1971), *Survey Methods in Social Investigation*, London: Heinmann.
- Nachmias David & Nachmias Chava (1981), *Research Methods in Social Sciences*, New York. St. Martin's Press.
- Seltiz, Claire et al (1959), *Research Methods in Social Relation*, New York: Henry Holt and Co.
- Thakur, Devender (2003), *Research Methodology in Social Science*, New Delhi: Deep and Deep Publications Pvt. Ltd.
- Young, P.V. (1988), *Scientific Social Surveys and Research*, New Delhi Prentic Hall.

Paper-III (Group A)
Social Anthropology
SOC/C012A

Maximum Marks: 80

Unit – I

Introduction to Social Anthropology: Definition, Nature and Scope of Social Anthropology, Social Anthropology and its Relationship with Sociology, History, Economics and Psychology.

Unit – II

Theoretical Orientation: Functionalism (Ridcliffe-Brown & B. Malinowski), Structuralism (Claude Levi-Strauss), Field Work Approach in Social Anthropology.

Unit – III

Concepts and Social Institution: Culture, Clan, Caste and Race, Family, Kinship, Marriage and Religious Institutions.

Unit – IV

Tribes in India: Definition, Characteristics and Geographical Distribution.

Problems of Tribal People, Tribal Movements in India, Social and Cultural Change among Tribal Society in India.

Readings

- Beattie, John (1964), *Other Cultures: Aims, Methods and Achievements in Anthropology*, London: R.K.P.
- Beteille (1974), *Six Essays in Comparative Sociology*, New Delhi: OUP.
- Fox, Robn (1973), *Encounter with Anthropology*, England: Penguin Books Ltd.
- Godelier, Maurice (1973), *Perspectives in Marxist Anthropology*, London: Cambridge University Press.
- Harris, Marvin (1972), *The Rise of Anthropology*, London: Routledge and Kegan Paul.
- Keesing, Roger, M. (1976), *Cultural Anthropology: A Contemporary Perspective*, America : Holt Remmhart and Winston.
- Kuper, Adam (1977), *Social Anthropology of Redcliff Brown*, London : Routledge and Kegan Paul.
- Madan, T.N. and D.N. Majumdar (1980), *An Introduction to Social Anthropology*, Delhi : Asia Publishing House.
- Mandelbaum, D.G. (1974), *Society in India*, Bombay Popular Prakashan.
- Manners and Kaplan (1968), *Theories in Anthropology*, Chicago Aldine Publishing Co.
- Pritchard, Evans (1972), *Social Anthropology*, London: Routledge and Kegan Paul.
- Radcliffe-Brown, A.R. (1957), *Structure Function in Primitive Society*, R.K.P. London.
- Singh K.S. (1983), *Tribal Movements in India*, Vol. 1&2, Delhi: Manohar Publications.

Paper IV (Group A)
Industrial Sociology
SOC/C012B

Maximum Marks: 80

Unit – I

Nature, Scope and Development of Industrial Sociology, Causes and Consequences of Industrialization.

Unit - II

Formal and Informal Industrial Organizations – The Structure and Features of Formal Organization – Pre-requisites of Industrial Organization.

Industrial Management -The Managerial Structure, Line and Staff Organizations, Functions of Line and Staff – Supervisors – White collar Workers-Blue Collar Workers and Specialists.

Unit – III

Meaning, Forms and Causes of Industrial Disputes (with reference to India)
Grievance Procedure – Settlement of Industrial disputes – Machinery (with reference to India) – Conciliation machinery – Arbitration Machinery.

Unit - IV

Scope and Evolution of Labour welfare, Labour welfare in India, Government and Trade Unions.

Readings:

Gisbert Pascal, Fundamentals of Industrial Sociology, Tata Mc. Graw Hill Publishing Co. New Delhi, 1972.

Schneider Engeno ,V. Industrial Sociology 2nd Edition, Mc. Graw Hill Publishing Co. New Delhi, 1979.

Mamoria, C.B. and Mamoria, S. Dynamics of Industrial Relations In India.

Sinha, G.P. and P.R.N. Sinha, Industrial Relations and Labour Legislations, New Delhi, Oxford and IBH Publishing Co. 1977.

Tyagi, B.P. Labour Economics and Social Welfare, Jai Prakashnath and Co. Meerut, 1980.

Methrotra, S.N. Labour Problems In India, 3rd Revised Edition, S. Chand and Co. New Delhi, 1981. RM 72.

**Paper III (Group B)
Indian Social Problems
SOC/C013A**

Maximum Marks: 80

Unit – I

Conceptual Issues: Meaning, Nature, Characteristics and Types of Social Problems, Anomie and Alienation.

Unit – II

Theories of Social Problems: Social Disorganization Approach, Value Conflict Approach, Cultural Lag Approach and Labeling Theory.

Unit – III

Social Tensions: Casteism, Communalism, Regionalism, Terrorism and Corruption.

Unit – IV

Social Problems and Legislations: Poverty, Dowry, Divorce, Unemployment and Honour Killing.

Environmental Pollution, Consumer Protection Act. Problems of Elderly.

Readings:

Ahuja Ram. Social problems in India Rawat Publication, New Delhi. 1999

Elliot, Mabel A and Merrill, Francis E. Social Disorganization, Harper and Brothers, New York. 1950.

Gurr, Ted Robert, Why Men Rebel, Princeton: Princeton University Press, 1970.

Madan G.R. Indian Social problems Allied Publisher, New Delhi. 1976.

Pachauri, J.P. (1999) (ed.), Drug Abuse and Alcoholism in India, Bareilly, MTC Printers.

Robert K. Merton and Robert Nisbet, (ed.) Contemporary social problems, Harcourt Brace, New York, 1971.

Paper IV (Group B)
Sociology of Environment
SOC/C013B

Maximum Marks: 80

UNIT-I

Sociology of Environment: The Rise, Decline and Resurgence of Sociology of Environment. Interrelation among Ecology, Environment and Society.

UNIT-II

Emerging Theoretical Perspectives in Sociology of Environment: Contribution of Dunlop and Cotton, Partick Giddens, Ramchandra Guha and Radha Kamal Mukherjee.

UNIT-III

Sustainable Development and Environmental Conservation.
Environment and Health—Environmental Deterioration and Hsealth Problems,
Environmental Degradation and Diseases.

UNIT-IV

Environment Impact Analysis, its Need, Scope and Methodology.
Role of Traditional Knowledge and Religious Beliefs to Environmental Protection Social
Movements regarding Environment & Ecology, Role of NGOs in Environment
Protection.

Readings:

Agarwal, Anil (1989), "Economy and Environment in India", in Anil Agarwal (ed.) The Price of Forest. New Delhi: Centre for Science and Environment.

Bhatt, Anil (1989), Development and Social Justice: Micro Action by Weaker Section, Sage: New Delhi

Carolyn Merchant (Ed.), Ecology, Key Concepts in critical theory, Rawat Publication, New Delhi, 1996.

Chauhan, I.S. (1998), Environmental Degradation, Delhi: Rawat Publications.

Dubey, S.M. and Murdia, Ratno (ed.) (1980), Land Alienation and Restoration in Tribal Communities in India, Bombay: Himalaya Publishing House.

Gadgil, Madhav & Ram Chandra Guha (1996), Ecology and Equity : The use and Abuse of Nature the Himalaya. OUP : Delhi.

Guha, Ram Chandra (1995), The Unquiet Wooks: Ecological Change and Peasant Resistance in the Himalaya. OUP: Delhi.

John A. Hannigan, Environmental Sociology, Routedge, London, 1995.

Mushi, Indra (2000), Environment in Sociological Theory, Sociological Bulletin, Vol. 49, No. 2.

Schnaiberg, Allan (1980), The Environment, New York: OUP.

Singh, Gian (1991), Environmental Deterioration in India: Causes and Control, New Delhi: Agricoles.

Wilson, Des (ed.) (1984), The Environmental Crisis, London: Heinemann.

Semester-IV

Paper-I Modern Sociological Theory SOC/C014

Maximum Marks: 80

Unit – I

Levels of Theorization in Sociology: its Origin and Contemporary Status: Merton's Scheme of Theorization: Conflict Approach : Dahrendorf's Class and Class Conflict and Coser's Functions of Social Conflict.

Unit - II

Phenomenological and Ethno methodological Theory: Alfred Shutz's Concept of Life World : Peter Bergen and Lunkmann's Social Construction of Reality : Garfinkel's Ethno Methodology and Goffman' Dramaturgical Approach.

Unit – III

Neo-Functional and Neo-Marxist Theory: J. Alexander's Neo-Functional Approach : Habermas's Legitimation Theory : Louis Althusser's idea of Marxist Structuralism and Gramsci's Notion of Hegemony.

Unit - IV

Structural and Post Modernist Theory: Gidden's Structuration Theory, Derrida's Deconstructionist Approach and Foucault's Post Modernist Theory.

Readings:

Abraham (2001), M. Francis: Modern Sociology Theory : An Introduction, Kolkatta, Oxford University Press.

Aron, Raymond (1965), Main Currents in Sociological Thoughts, Vol.-I & II, New York; Basis Books.

Bootomore, Tom & Nisbet, Robert (2004), A History of Sociological Analysis, Jaipur, Rawat Publications.

Cohen, Percy S. (1968), Modern Social Theory, New York, Basic Books

(1994) The Polity Reader in Social Theory. Cambridge, Polity Press.

Giddens, Anthony (1996), Capitalism & Modern Social Theory Cambridge, Cambridge University Press.

Lemert, Charles (2004), Social Theory : The Multicultural and Classic readings, Jaipur, Rawat Publications.

Ritzer George (2000) Modern Sociological Theory, New York, Mc-Graw-Hill.

Turner, Jonathan H. (2001), The Structure of Sociological Theory, Jaipur, Rawat Publication.

Ritzer, George (2000), Classical Sociological Theory, New York, Mc-Graw-Hill, Higher Education.

Zeitlin, Irving M. (2001), Rethinking Sociology: A Critique of Contemporary Theory, Jaipur, Rawat Publication.

Paper-II
Sociology of Planning & Development
SOC/C015

Maximum Marks: 80

UNIT-I

Concept of Planning and Development: Centralized and Decentralized Planning.

Theories of Planning: Democratic Socialistic and Totalitarian.

UNIT-II

Changing Concept of Development: Economic Growth, Human Development, Social Development And Sustainable Development.

Role of Intellectuals, Bureaucrats and Power Politics in the Planning and Development in India.

UNIT-III

Social Policy and Planning in India: Plan Formulation, Implementation, Monitoring and Evaluation

Indian Experience of Planning: Sociological Appraisal of Five year Plans.

UNIT-IV

Prospects and Problems of Community Development in India.

Regional Planning and Development with Reference to Problems and Prospects of Garhwal Region.

Readings:

Bulmer, M. Etl. (1989), The Goals of Social Policy, London: Unwin Hyman.

Bandyppadhayay, D. (1987), People's Participation in Planning Kerala Experiment, Economics and Political Weekly, Sept. 24, 2450-54.

Chakraborty, S. (1987), Development Planning-Indian Experience, Oxford, Clarendon Press.

Ghosh, A. (1992), *Planning in India : The Challenge for the Nineties*, New Delhi, Sage Publications.

Huttman, E.E. (1981), *Introduction to Social Policy*, New York, Mcgraw Hill.

Kulkarni, P.D. (1979), *Social Policy and Social Development in India*, Madras, Association of Schools of Social Work in India.

Madison, B.Q. (1980), *The Meaning of Social Policy*, London, Croom Helm.

Mukherjee, N. (1993), *Participatory Rural Appraisal : Methodology*.

Paper-III (Group A)
Women and Society
SOC/C016A

Maximum Marks: 80

UNIT-I

Social Construction of Gender: Gender and Biological Sex.

Approaches to the Study of Women: Psychological, Functional, Marxian and Feminist.

UNIT-II

The Changing Status of Women in India: Pre-Colonial, Colonial and Post-Colonial.

Social Reforms and Movement's for the Upliftment of Women in 19th and 20th Centuries.

UNIT-III

The Demographic Profile of women in India, The Declining Sex Ratio, Causes and Consequences.

Development and Women: Technology, Liberalization and Globalization and Their Impact on Women.

UNIT-IV

Women and Law: Domestic Violence, Crime against Women, Women and Human Rights.

Empowerment of Women: Reservation, Role of State and NGOs.

Readings:

- Aggarawal, B. (1988), Structure of Patriarchy: State, Community and Household in modernizing India (ed.) New Delhi: Kali for Women.
- Ahlawat, Neerja (1995), Women Organizations and Social Networks, New Delhi: Rawat Publications.
- Boserup, E. (1970), Women's Role in Economic Development, London: George Allen and Unwin.
- Cater, Libby et al (1977), Women and Men-Changing Roles, Relationship and Perceptions, New York: Praeger.
- Center for Women's Development Studies (1987), Women and Development: Gender Issues, Occasional Paper No. 2, New Delhi, CWDS.
- Chanana, K. (1988), Socialization, Women and Education: Exploration in Gender Identity, New Delhi: Orient Longman.
- Desai, Neera and M. Krishnaraj (1987), Women and Society in India, Delhi: Ajanta Publication.
- Dube, Leela and Rajni Parliwal (1990), Structures and Strategies: Women, Work and Family, New Delhi: Sage Publication.
- Govt. of India (1988), National Perspective Plan for Women (1988-2000), A.D. Deptt. Of "W.& C.D." New Delhi: Ministry of H.R.D.
- Nagla, B.K., Women, Crime and Law, Jaipur, Rawat Publication.

**Paper IV (Group A)
Sociology of Crime
SOC/C016B**

Maximum Marks: 80

UNIT-I

- Criminology: Meaning Nature and Scope
Crime and Criminals: Types, Factors and Theories

UNIT-II

- Sociology of Deviance, Conformity and Deviance, Social Disorganization and its Implications.

Suicide, Organized Crimes and White Collar Crimes.

UNIT-III

Juvenile Delinquency: Nature, Causes and Treatment

Development of Modern Correctional Concepts, Probation and Parole, Treatment of Criminals.

UNIT-IV

Punishment: Objectives, forms and theories, Capital Punishment Problems of Alcoholism, Addiction, Prostitution, Corruption and youth Unrest.

Sociology and History of Prison, Reform in India

Readings:

Ahuja, Ram (2000), Social Problems in India, Jaipur: Rawat Publications.

Madan, G.R. (1991), India's Social Problems, New Delhi: Allied Publishers.

Crime in India (2007-08), Crime in India Reports, New Delhi: Government of India.

Thio, Alex (1978), Deviant Behaviour, Boston: Houghton Mifflin Co.

Makkar, S.P. Singh and Paul C. Friday, (1993), Global Perspectives in Criminology. Jalandhar: ABC Publications.

Ministry of Home Affairs, (1998), Crime in India. New Delhi : Government of India.

Sutherland, Edwin H. and Donald R. Cressey, (1968), Principles of Criminology, Bombay : The Times of India Press.

Walklete, Sandra. (1998), Understanding Criminology, Philadelphia : Open University Press.

Ryan Patrick J. and George Rush. (1997), Understanding Organized Crime in Global Perspective, London: Sage Publications.

Paper III (Group B) Urban Sociology SOC/C017A

Maximum Marks: 80

UNIT-I

Urban Sociology: Meaning, Nature and Scope, its Relation with Other Social Sciences.

Urban Sociology in India: Emerging Trends in Urban Sociology in India.

UNIT-II

Urban Social Structure: Family, Marriage and Kinship.

UNIT-III

Dimensions of Urbanization and the Social Consequences of Urbanization.

Industrialization and Urbanization their Interrelationship and Consequences.

UNIT-IV

Urban Problems – Migration, Housing , Slums and Poverty, Prostitution, Alcoholism and Drug Addiction, Juvenile Delinquency.

Urban Planning: Meaning Objectives and Agencies. Factors affecting Urban Planning.

Readings:

Alfred D' Souza (1978), *The Indian City: Poverty, Ecology and Urban Development*, Manohar Publications, New Delhi.

Ashis Boss (1901-1971, 1979), *Studies in India's Urbanisation*.

Harry Gold (1982), *The Sociology of Urban Life*, Prentice-Hall.

J.A. Quinn (1967), *Urban Sociology*, Ch. 14 Eurasia, Delhi.

M.S.A. Rao (ed.) (1974), *Urban Sociology in India*.

M.S. Gore (1968), *Urbanisation and Family Change*.

Ram Chandran, R. (1991), *Urbanisation and Urban System in India*, OUP Delhi.

Raj S. Gandhi (1981), *Urban Sociology in India*, *International Journal Contemporary Sociology*, Vol. 18, Nos. & 4, 1981.

Satish Saberwal (ed.) (1978), *Process and Institution in Urban India*.

Saunders Peter (1981), *Social Theory and Urban Question*, Hutchionson.

T.K. Oommen (1967), *The Rural Urban Continuum Re-examined in the India Context*, *Sociologia Ruralis*, Vol. 07, No. 1.

Wilson R.A. and D.A. Schulz (1978), *Urban Sociology*, Prentice-Hall.

W.W. Burgess & D.J. Bogue (ed.) (1964), *Contributions to Urban Sociology*. University of Chicago Press.

Paper IV (Group B)

Religion and Society SOC/C017B

Maximum Marks: 80

UNIT - I

Sociology of Religion: Definition, Subject Matter.

Approaches to the Study of Religious Phenomena: Theological, Psychological Anthropological and Sociological.

UNIT - II

Religious experiences and institutions: (i) The Sacred and the Charismatic, (ii) Creed, Cult and Codes.

Religious Organization: Church, Sect and Denominations.

UNIT - III

Religion and Social Control: its role in Legitimation.

Religion and Social Change: Weber's Thesis and its Relevance to India.

UNIT - IV

Functions and Dysfunctions of Religion. Communalism in India: its Nature and Socio-Economic Bases.

Religious Revivalism and Process of Secularization.

Readings:

Madan, T.N. (ed.). (1992), (enlarged edition). Religion in India: Oxford University Press.

Muzumdar, H.T. (1996), India's religious heritage. New Delhi: Allied.

Pachauri, J.P. Chakkanatt, J.D. (2004), Religio-Cultural Plurality and Nation-State. Srinagar, Sadharmyam Publication.

Roberts, Keith A (1984), Religion in Sociological Perspective. New York: Dorsey Press.

Shakir, Moin (ed.). (1989), Religion, State and Politics in India Delhi : Ajanta Publications.

Turner, Bryan S. (1991), (2nd edition), Religion and Social Theory. London: Sage.

Paper-V
Dissertation
OR
Viva-Voce

1. Dissertation will be allowed to only those Students who have secured 55% marks in the aggregate of last three Semesters.
2. Dissertation shall be based on the field work. The field work shall be related to the collection of primary data. The field work shall be carried out under the general supervision of Supervisor and Head of the Department.
3. Two typed copies of the Dissertation shall be submitted in the Department through, Head of the Department.
4. The Dissertation shall be examined by the board of examiners consisting of Head of Department/Supervisor and external examiner (to be appointed by University) who shall also conduct the Viva-Voce of the candidate. Both the examiners shall give marks.
5. There will be Viva-Voce as a full paper. The Viva-Voce will be conducted by one External and one Internal Examiner appointed by the University.

FACULTY OF COMMERCE

Sri Dev Suman Uttarakhand University

Badshahithaul, Tehri Garhwal



**Syllabus for Under Graduate Course
(B.Com)**

Examination: 2019-2020 and onwards

ORDINANCES

B.Com. (Three Year Degree Course)

1. (a) The examination for the degree of Bachelor of Commerce (B.Com.) shall consist of three parts
 - (i) B.Com. Part – I
 - (ii) B.Com. Part – II
 - (iii) B.Com. Part – III
- (b) A candidate who has passed the following examinations shall be eligible for admission to B.Com. Part I:

The Intermediate Examination of Commerce of the Board of High School and Intermediate Education, Uttaranchal or the Central Board of Secondary Education or any other examination recognized by the University as equivalent there to with a minimum of 40% marks in aggregate.

2. A candidate who has passed Part I/II B.Com. Examination of another university may also be admitted to part II/III. B.Com. examination provided that he/ she has offered for his/ her part I/II examination of course of equivalent standard with almost identical syllabus as is required for part I/II examination of this University and has attended a regular course of study for an academic year in constituent/ affiliated college of the university. Prior permission is necessary from university with this regard.
3. (a) A candidate shall be examined in three groups of B.Com. Part I / II examination and total four groups in B.Com – III examination. In B.com. – III, Group – V is compulsory for students.
 - (b) There will be one Computerized Accounting Group i.e. Group - IV
 - (c) Computerized Accounting (Group - IV) can be opted by a maximum number of 30 students in B.Com. I (to continue without change to B.Com. II and III) in place of Group II i.e. Accounting Group. This group can be run only where appropriate computers laboratory and staff is available. Practical examination will be held in group IV as under:

B.com. I	Paper I - [50 max. marks]
	Paper II - Theory 35 marks, Practical 15 marks [50 max. marks]
B.com. II	Paper I - Theory [50 max. marks]
	Paper II - Theory 35 marks, Practical 15 marks [50 max. marks]
B.com. III	Paper I - Theory 35 marks, Practical 15 marks [50 max. marks]
	Paper II - Theory 35 marks, Practical 15 marks [50 max. marks]

The Following shall be the number of paper in each group:

Groups	No. of Papers		
	Part I	Part II	Part III
I	2	2	2
II	2	2	2
III	2	2	2
IV	2	2	2
V	-	-	2 (Compulsory Papers)

4. In B.Com. Part I, II & III examination, each group shall carry 100 marks. In order to pass B.Com. Part I, Part II and Part III examination, a candidate must obtain 33% marks in each group and also in aggregate.
5. Each candidate shall have to pass the B.Com. Part I, B.Com. Part II and B.Com. III examinations separately, but the division shall be awarded on the basis of the aggregate marks obtained by him/her in all the three examinations together.
6. A candidate who has obtained 33% marks and above but less than 45% marks in the aggregate shall be placed in III division, a candidate who has obtained 45% marks and above but less than 60% marks shall be placed in II division, a candidate who has obtained 60% marks and above shall be placed in I division.

7. In B.Com. Part III, three grace marks in any one group shall be awarded on the basis of one mark on every 10 marks, over and above the minimum pass marks.
8. The details of the courses of each group of study shall be as contained in the syllabi and the existing regulations, to the extent they are inconsistent with the new ordinances and regulations, shall stand amended or superseded, as the case may be.

SCHEME OF EXAMINATION

(1) The examination for the degree of Bachelor of Commerce shall consist of B.Com. Part I, Part II and Part III examinations spread over three years.

B. Com. Part - I Examination, 2019 and onwards

	Management Group	Marks
Group I	Paper I - Principles of Management	50
	Paper II - Business Environment	50
	Accounting Group	
Group II	Paper I - Financial Accounting	50
	Paper II - Business Statistics	50
	Business Economics & Legal Aspects of Business	
Group III	Paper I - Business Economics	50
	Paper II - Business Laws	50
	Computerized Accounting	
Group IV	Paper I - Financial Accounting	50
	Paper II - Computerized Financial Accounting	50

B. Com. Part - II Examination, 2020 and onwards

	Management Group	Marks
Group I	Paper I - Basic Business Finance	50
	Paper II - Personnel Management	50
	Accounting Group	
Group II	Paper I - Cost Accounting	50
	Paper II - Corporate Accounting	50
	Business Economics & Legal Aspects of Business	
Group III	Paper I – Money Banking and Insurance	50
	Paper II - Legal Aspects of Business	50
	Computerized Accounting	
Group IV	Paper I - Cost Accounting	50
	Paper II - Computerized Cost Accounting	50

B. Com. Part - III Examination, 2021and onwards

	Management Group	Marks
Group I	Paper I - Marketing Management	50
	Paper II - Management Accounting	50
	Accounting Group	
Group II	Paper I - Income Tax Law and Accounts	50
	Paper II - Auditing and Corporate Governance	50
	Business Economics & Legal Aspects of Business	
Group III	Paper I - Goods and Services Tax (GST)	50
	Paper II - Fundamentals of Investment	50
	Computerized Accounting	
Group IV	Paper I - Computer Application in Management Accounting	50
	Paper II - Computer Application in Income Tax	50
	Communication Group (Compulsory for all)	
Group V	Paper I - Business Communication	50
	Paper II - Viva Voce (Oral Communication)	50

B. Com. – I Year

Group – I: Management Group

Paper – I: Principles of Management

Objective: To develop an understanding about functions of management and importance of management principles in business decision making.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Management – Meaning, nature and importance, Different Schools of management thought. Contribution of Taylor, Henri Fayol and Elton Mayo.
2. Planning. Concepts, Types of plans, Process and limitations of planning.
3. Organisation – Departmentation, types of organisation, line, staff and functional organisation.
4. Staffing – Recruitment, selection procedure, training methods, performance appraisal.
5. Motivation – Meaning and importance, Financial and non-financial incentives.
6. Leadership ;styles, traits, theories,
7. Coordination - Meaning, importance and methods.
8. Decision making – Meaning process and importance.
9. Control – Meaning and importance, relationship with planning, Process & techniques of control.
10. Functional Areas of Management - Marketing Management: Marketing Concept; Marketing Mix; Product Life Cycle; Pricing Policies and Practices Financial Management: Concept and Objectives; Sources of Funds – Equity Shares, Debentures, Venture Capital and Lease Finance. Securities Market, Role of SEBI. Human Resource Management: Concept and Functions.

Suggested Reading:

1. Koontz and Wehrich, *Essentials of Management*, McGraw Hill Education.
2. B.P. Singh and A.K.Singh, *Essentials of Management*, Excel Books.
3. R.H. Buskirk, *Concepts of Business: An Introduction to Business System*, Dryden Press, New York.
4. Burton Gene and Manab Thakur; *Management Today: Principles and Practice*, Tata McGraw Hill, New Delhi.
5. Griffin, *Management Principles and Application*, Cengage Learning
6. R.S.N Pillai and S. Kala *Principles and Practice of Management*, S Chand

Paper – II: Business Environment

Objective: To familiarize the students with the basic business environment and social orientation of business.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, students have to attempt **any four**

questions. Each question of section 'C' is of 7.5 marks.

1. Business Environment: Concept, importance, components, micro and macro environment, internal environment.
2. Economic Trends (overview): Income; Savings and investment; industry; Trade and balance of payments, Money; Finance; Prices.
3. Problems of Growth: Unemployment; Poverty; Regional imbalances; Social injustices; Inflation; Parallel economy; Industrial sickness.
4. Role of Government: Monetary and fiscal policy; Industrial policy; Industrial licensing, Privatization, Liberalization and Globalization; Devaluation; Export-Import Policy; Regulation of foreign investment; Collaborations in the light of recent changes.
5. The Current Five Year Plan: Major policies; Resource allocation.
6. The Consumer Protection Act 1986: Basic Concepts: Consumer, goods, service, defects in goods, deficiency in service, Grievance redressal machinery.
7. Introduction to FDI, FII and their role in Indian Economy, Role and Relevance of Public, Private, Joint and Small Scale Sector in India.
8. International Environment: trends in world trade and problems faced by developing countries; trends in foreign trade and economic growth.
9. International economic grouping: GATT,WTO,UNCTAD,WORLD BANK, IMF ,counter trade

Suggested Reading:

1. M. Adhikary, *Economic Environment of Business*, Sultan Chand & sons New Delhi.
2. K. Ashwathappa, *Legal Environment of Business*, Himalaya Publication New Delhi.
3. Francis Cherunilam, *Business Environment*, Himalaya Publishing House New Delhi.
4. Rajvaid: *Business Environment*.
5. I.C. Dhingra, *Indian Economy: Environmental and Policy*, Sultan Chand & sons New Delhi.
6. S.K. Mishra and V.K. Puri, *Economic Environment of Business*.
7. Joshi.R and Kapoor.S, *Business Environment*, Kalyani Publishers.

Group – II: Accounting Group

Paper – I: Financial Accounting

Objective: The objective of this paper is to help students to acquire conceptual knowledge of the financial accounting and to impart skills for recording various kinds of business transactions.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, **out of which at least five questions will be numerical**, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Nature of financial statements, Accounting concepts and Principles.
2. Accounting Process - From recording of a business transaction to preparation of trial balance including adjustments.
3. The nature of Depreciation. The accounting concept of depreciation. Factors in the measurement of depreciation. Methods of computing depreciation: straight line method

- and diminishing balance method.
4. Accounts of Banking Companies – Accounting requirements of banking companies. The classification of Book Debts, Profit & Loss Account and Balance Sheet of Banking companies.
 5. Departmental and Branch Accounts – Preparation of departmental accounts-allocation of expenses. Preparation of Accounts of branches keeping incomplete records, Account of independent branches maintaining complete records, stock and debtors method; Foreign branches; Inter-branches transactions.
 6. Insolvency accounts of sole trader and partnership firms-statements of affairs and deficiency account.
 7. Hire purchase account(including problems of default in hire purchase, H P trading A/c, goods of small value, stock and debtors method of branch), Installment payment system.
 8. Royalty accounts.
 9. Partnership Accounts: Fundamentals (including treatment of goodwill as per AS10 revised), Admission of a Partner, Retirement and Death of a Partner, Dissolution of Partnership including Insolvency.

Suggested Readings:

1. N Robert Anthony, David Hawkins, A. Kenneth Merchant, *Accounting: Text and Cases*, McGraw-Hill Education, 13th Ed. 2013.
2. T. Charles Horngren and Donna Philbrick, *Introduction to Financial Accounting*, Pearson Education.
3. J.R. Monga, *Financial Accounting: Concepts and Applications*, Mayur Paper Backs, New Delhi.
4. M.C.Shukla, T.S. Grewal and S.C.Gupta. *Advanced Accounts. Vol.-I. S*, Chand & Co., New Delhi.
5. S.N. Maheshwari, and. S. K. Maheshwari. *Financial Accounting*, Vikas Publishing House, New Delhi.
6. Deepak Sehgal. *Financial Accounting*, Vikas Publishing H House, New Delhi.
7. Bhushan Kumar Goyal and HN Tiwari, *Financial Accounting*, International Book House
8. Goldwin, Alderman and Sanyal, *Financial Accounting*, Cengage Learning.
9. P.C. Tulsian, *Financial Accounting*, Pearson Education.
10. *Compendium of Statements and Standards of Accounting*. The Institute of Chartered Accountants of India, NewDelhi

Paper – II: Business Statistics

Objective: To familiarize students with the applications of Statistical techniques in business and to find solution of the business problem.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, **out of which at least five questions will be numerical**, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Introduction: Nature, scope, importance and limitations of statistics, Misuse of statistics.
2. Statistical Investigation: Collection and classification of data, planning a statistical investigation, questionnaire, methods of collecting primary and secondary data, Methods and principle of sampling. Methods of classification and tabulation.
3. Diagrammatic and Graphic Presentation: Location of median, quartiles and mode graphically; one and two dimensional diagrams.
4. Statistical Average: Uses, limitation and calculations of various averages, Mean, Mode,

- Median, Partition Values, Geometrical and Harmonic Mean.
5. Dispersion and Skewness: Various measures.
 6. Correlation and Regression analysis: Simple correlation, scatter diagram, methods of computing correlation, Karl Pearson and rank correlation, Standard error and probable error. Regression analysis ,Regression coefficients,
 7. Index Number: Fixed base and chain base, base shifting, weighted index numbers, consumer price Index no., Fisher's Index, tests of reversibility.
 8. Analysis of time series: Meaning, components of time series, measurements of trend.
- Indian Statistics: National income, population census, statistics relating to agriculture, statistical organisations at the centre and in Uttarakhand.

Suggested Readings:

1. Richard Levin and S. David Rubin, *Statistics for Management*, Pearson Education.
2. N.D. Vohra, *Business Statistics*, McGraw Hill Education.
3. Berenson and Levine, *Basic Business Statistics: Concepts and Applications*, Pearson Education.
4. M.D Spiegel, *Theory and Problems of Statistics*, Schaum Outlines Series, McGraw-Hill.
5. G.C. Beri, *Business Statistics*, McGraw-Hill.
6. J. K. Sharma, *Business Statistics*, Pearson Education.
7. S.C. Gupta, *Fundamentals of Statistics*, Himalaya Publishing House.

Group – III: Business Economics and Legal Aspects of Business

Paper – I: Business Economics

Objective: To introduce students with broad range of economic concepts, theories and analytical techniques which help the management in decision making.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Introduction: Definition and nature of economics, Scope and methodology of economics, Micro and macro economics.
2. Consumption: Measurements of Utility, Law of Diminishing Marginal Utility, Law of Equi-marginal Utility.
3. Law of Demand: Demand Schedules and Curves, Elasticity of Demand, methods of measurement of elasticity of demand, measurement of cross elasticity, Law of Supply, Measurement of Elasticity of Supply, ,
4. Consumer's surplus, Study of Consumer Behaviour through indifference curve technique.
5. Production: The Factors of Production and their characteristics, Factors affecting productivity of labour and capital, Theories of Population. Law of variable proportion, The laws of return, economy of scale, law of return to scale, different concepts of cost of production. SAC curve, LAC curve.
6. Exchange: The theory of exchange, Definition and extent of market, Determination of price under conditions of perfect competition, imperfect competition and monopoly. Effect of monopoly in economic life, monopolistic competition, oligopoly,
7. Theories of distribution, marginal productivity theory of distribution
8. Concept and theories of profit and wages

Suggested Readings:

1. D.N. Dwivedi, Managerial Economics, 7th Edition, Vikas Publishing House.
2. D. Salvatore, Managerial Economics in a Global Economy, 6th Edition, Oxford University Press.
3. L. Peterson and Jain Managerial Eco., 4th Edition, Pearson Education.
4. Kontsoyianis, Modern Micro-Economics.
5. M. Adhikary, Business Economics.

Paper – II: Business Laws

Objective: To impart basic knowledge of the important business laws relevant to conduct general business activities in physical and virtual spaces along with relevant case laws.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. The Indian Contract Act, 1872: Nature of contract: Classification; Offer and acceptance; Capacity of parties to contract; Free consent; Consideration Legality of object; Agreement declared void; Performance of contract; Discharge of contract; Remedies for breach of contract. Special Contracts; Indemnity; Guarantee; Bailment and pledge; Agency.
2. The Sale of Goods Act, 1930. Formation of contracts of sale; Goods and their classification, price; Conditions and warranties; Transfer of property in goods; Performance of the contract of sale; Unpaid seller and his rights, sale by auction; Hire - purchase agreement.
3. The Partnership Act, 1932 and Limited Liability Partnership Rules.
4. The Negotiable Instrument Act, 1881: Definition of negotiable instruments; Features; Promissory note; Bill of Exchange, Cheque holder and holder in due course; Crossing of a cheque, Types of crossing, Negotiation, Dishonor and discharge of negotiable instruments.
5. The Information Technology Act, 2000: Meaning and Scope of the Act, Digital Signature, Electronic Governance, Regulation of Certifying Authority, Digital Signature, Penalties and Adjudication, Offences.

Suggested Readings:

1. M.C. Kuchhal, and Vivek Kuchhal, *Business Law*, Vikas Publishing House, New Delhi.
2. Avtar Singh, *Business Law*, Eastern Book Company, Lucknow.
3. Ravinder Kumar, *Legal Aspects of Business*, Cengage Learning
4. S.N. Maheshwari and S.K. Maheshwari, *Business Law*, National Publishing House, New Delhi.
5. Sushma Arora, *Business Laws*, Taxmann Publications.
6. Akhileshwar Pathak, *Legal Aspects of Business*, McGraw Hill Education, 6th ed.
7. P C Tulsian and Bharat Tulsian, *Business Law*, McGraw Hill Education
8. S. K. Aggarwal, *Business Law*, Galgotia Publishers Company, New Delhi.
9. J.P. Sharma and Sunaina Kanojia, *Business Laws*, Ane Books Pvt. Ltd., New Delhi.
10. Bhushan Kumar Goyal and Jain Kinneri, *Business Laws*, International Book House

Group IV – Computerized Accounting

Paper – I: Financial Accounting

Objective: The objective of this paper is to help students to acquire conceptual knowledge of the financial accounting and to impart skills for recording various kinds of business transactions

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Nature of financial statements, Accounting concepts and Principles.
2. Accounting Process - From recording of a business transaction to preparation of trial balance including adjustments.
3. The nature of Depreciation. The accounting concept of depreciation. Factors in the measurement of depreciation. Methods of computing depreciation: straight line method and diminishing balance method.
4. Accounts of Banking Companies – Accounting requirements of banking companies. The classification of Book Debts, Profit & Loss Account and Balance Sheet of Banking companies.
5. Departmental and Branch Accounts – Preparation of departmental accounts-allocation of expenses. Preparation of Accounts of branches keeping incomplete records, Account of independent branches maintaining complete records, stock and debtors method; Foreign branches; Inter-branches transactions.
6. Insolvency accounts of sole trader and partnership firms-statements of affairs and deficiency account.
7. Hire purchase account(including problems of default in hire purchase, H P trading A/c, goods of small value, stock and debtors method of branch), Installment payment system.
8. Royalty accounts.
9. Partnership Accounts: Fundamentals (including treatment of goodwill as per AS10 revised), Admission of a Partner, Retirement and Death of a Partner, Dissolution of Partnership including Insolvency.

Suggested Reading:

1. P.C. Gupta and S.K.Gupta, Financial Accounting, Jawahar Publication
2. Anthony R.N., Hawkins, D.R., Merchant,K. A., Accounting: Text and Cases, McGraw-Hill Education, 13th Edition.
3. J.R Monga, Financial Accounting: Concepts and Applicatons, Mayur Paper Backs, New Delhi
4. M.C. Shukla, T.S Grewal and Gupta S.C., Advanced Accounts. Vol. I, S Chand and Co., New Delhi.

Paper – II: Computerized Financial Accounting

Objective: To gain the knowledge of fundamentals of computer, basic electronic, database system and use of computer in a secure manner and to impart computer skills for recording various kind of business transactions by using accounting software.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of six long answer type questions, students have to attempt **any three** questions. Each question of section 'C' is of 5 marks.

1. Computer Fundamentals Brief History, Hardware and Software, Classification of Computer introduction to different computer languages, Memory Concepts, Operating System and its types, Elementary idea of MS-DOS and Window operating system.
2. Treatment of Data and Basic Statistical Analysis: Mean mode median and hypothesis testing (t test and x^2 test) on Computer.
3. Tally and its basics.
4. Basic rules of journal entries, ledgers, trial balance and final accounts.
5. Use of Tally to obtain financial accounting output for the following:
 - i. Day books
 - ii. Journals
 - iii. Journal Ledger
 - iv. Subsidiary Ledger
 - v. Trial Balance
 - vi. Balance Sheet
 - vii. Profit and Loss Account
 - viii. Other Statement

Note: separate practical will be held for 15 marks in computerized accounting.

B.Com. – II Year

Group I: Management Group

Paper – I: Basic Business Finance

Objective: To familiarize the students with the basic principles and practices of finance.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, **out of which at least five questions will be numerical**, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Nature, scope and objective of Financial Management, Time value of money, Risk and return (including Capital Asset Pricing Model), Valuation of securities – Bonds and Equities
2. Cost of Capital: Cost of Capital and Financing Decision: Sources of long -term financing Estimation of components of cost of capital. Methods for Calculating cost of equity capital, Cost of Retained Earnings, Cost of Debt and Cost of Preference Capital, Weighted Average cost of capital (WACC) and Marginal cost of capital.
3. Operating and Financial Leverage: Their measure; Effects on profit, analysing alternate financial plans, combined financial and operating leverage.
4. Capital Structure: Theories of Capital Structure (Net Income, Net Operating Income, MM Hypothesis, Traditional Approach) and determinants.
5. Capital Budgeting: The Capital Budgeting Process, Cash flow Estimation, Payback Period Method, Accounting Rate of Return, Net Present Value (NPV), Net Terminal Value, Internal Rate of Return (IRR), Profitability Index, Capital budgeting under Risk – Certainty Equivalent Approach and Risk-Adjusted Discount Rate.
6. Management of Working Capital: nature of Working capital, Significance of working capital, operating cycle, factors determining working capital requirements; Management of working capital – cash, receivables, and inventory.
7. Dividend Policies; Issues in dividend policies; Walter's model Gordon's model; M.M. Hypothesis, forms of dividends and stability of dividends, determinants.

Suggested Readings:

1. C. James Van Horne and Warkowich, *Fundamentals of Financial Management*, Pearson Education.
2. H. Levy and M. Sarnat. *Principles of Financial Management*, Pearson Education.
3. O.M. Joy, *Introduction to Financial Management*, Mc Graw Hill Education.

4. Brigham and Houston, *Fundamentals of Financial Management*, Cengage Learning.
5. Khan and Jain, *Basic Financial Management*, McGraw Hill Education.
6. P. Chandra, *Fundamentals of Financial Management*, McGraw Hill Education.
7. R.P. Rustagi, *Fundamentals of Financial Management*, Taxmann Publication Pvt. Ltd.
8. Singh Surender and Kaur Rajeev, *Fundamentals of Financial Management*, Mayur Paperback, New Delhi.
9. I.M. Pandey *Financial Management*, Vikas Publications.
10. Bhabatosh Banerjee, *Fundamentals of Financial Management*, PHI Learning.

Paper – II: Personnel Management

Objective: The course aim is to provide basic knowledge to the students about procurement, development, compensation, integration, and maintenance of the personnel of an organization.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of Seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of Eight long answer type questions, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Personnel Management: Meaning, importance and scope, Organisation and functions of personnel department: Personnel policies.
2. Manpower Planning – Meaning, importance and process.
3. Recruitment & Selection: Job description and Job specification, selection procedure.
4. Training: Need, methods, induction of new employees.
5. Promotion, demotion, transfer, discipline, discharge and dismissal and related problems and procedures.
6. Motivation concept and theories (Maslow, McGregor, Herzberg etc.).
7. Compensation: Wage and Salary administration. Methods of wage payment including incentive wage plan.
8. Performance Appraisal: Nature, importance and techniques.

Suggested Reading:

1. A. Monappa and M.S. Saiyadani, *Personnel Management*, Mc-Graw Hill Education.
2. R.S Davar, *Personnel Management and Industrial Relations in India*, S.Chand.
3. C.B Mamoria and V.S.P Rao, *Personnel Management*, Himalya Publishing House.
4. A Kumar and R Sharma, *Personnel Management Theory and Practice*, Atlantic Publishers and Distributers pvt. ltd.

Group II: Accounting Group

Paper – I: Cost Accounting

Objective: To provide an in-depth understanding of the cost accounting principles for

identification, analysis and classification of cost components and cost ascertainment using various costing methods.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, *out of which at least five questions will be numerical*, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Introduction: Nature and scope of cost accounting; Cost concepts and classifications; Methods and techniques; Installation of costing system: Concept of cost audit.
2. Accounting for Material: Material/inventory control techniques. Accounting and control of purchases, storage and issue of materials. Methods of pricing of materials issues — FIFO, LIFO, Simple Average, Weighted Average, Replacement, Standard Cost. Treatment of Material Losses
3. Accounting for Labour: Accounting and Control of labour cost. Time keeping and time booking. Concept and treatment of idle time, over time, labour turnover and fringe benefits. Methods of wage payment and the Incentive schemes- Halsey, Rowan, Taylor's Differential piece wage.
4. Accounting for Overheads: Classification and departmentalization; Allocation, Apportionment, Reapportionment and Absorption of overheads; Determination of overhead rates, Under and Over absorption, and its accounting treatments.
5. Cost Ascertainment: Unit costing, Job costing, Contract costing, Process costing (process losses, valuation of work in progress, joint and by-products), Service costing (only transport).
6. Cost Records: Integral and non-integral system.
7. Standard costing and variance analysis, material, labour and overhead
8. Reconciliation of cost and financial accounts

Suggested Reading:

1. S.N. Jain, Maheshwari and S.N. Mittal, *Cost Accounting: Theory and Problems*, Shri Mahavir Book Depot, New Delhi.
2. S.P. and K.L. Narang, *Cost Accounting: Principles and Methods*, Kalyani Publishers.
3. Rajiv Goel, *Cost Accounting*, International Book House.
4. Surender Singh, *Cost Accounting*, Scholar Tech Press, New Delhi.
5. B.M. Nigam Lall and I.C. Jain, *Cost Accounting: Principles and Practice*, PHI Learning.
6. M.N. Arora, *Cost Accounting – Principles and Practice*, Vikas Publishing House, New Delhi.
7. S.P. Iyengar, *Cost Accounting*, Sultan Chand & Sons.

Paper – II: Corporate Accounting

Objective: To acquire the conceptual knowledge of corporate accounting and to understand the various techniques of preparing accounting and financial statements of companies.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to

attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, *out of which at least five questions will be numerical*, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

Note: Students have to follow Revised Schedule VI for preparing Final Account wherever needed

1. Company Accounts: Issue of Shares. Forfeiture & reissue of shares(including problems ofprorata)
2. Issue and Redemption of Debentures
3. Redemption of preference shares
4. Profits prior and after incorporation.
5. Preparation of final A/C of joint stock company(including problems of managerial remuneration)with adjustment as per revised schedule VI of companies act
6. Underwriting of shares.
7. Amalgamation, Absorption and Reconstruction. As per accounting standard - 14.
8. Liquidation of companies.
9. Holding companies: Preparation of consolidated Profit and Loss Accounts and Balance Sheet.
10. Valuation of shares and valuation of goodwill.

Suggested Readings:

1. M.C. Kuchhal, *Modern Indian Company Law*, Shri Mahaveer Book Depot (Publishers), Delhi.
2. G.K. Kapoor and Sanjay Dhamija, *Company Law*, Bharat Law House, Delhi.
3. Anil Kumar, *Corporate Laws*, Indian Book House, Delhi
4. Reena Chadha and Sumant Chadha, *Corporate Laws*, Scholar Tech Press, Delhi.
5. Avtar Singh, *Introduction to Company Law*, Eastern Book Company
6. *A Compendium of Companies Act 2013, along with Rules*, by Taxmann Publications.
7. Gower and Davies, *Principles of Modern Company Law*, Sweet & Maxwell
8. Shukla.S.M and Gupta K.L, *Corporate Accounting*, Sahitya Bhawan Publications, Agra

Group III: Business Economics and Legal Aspects of Business

Paper – I: Money, Banking and Insurance

Objective: To impart knowledge about the basic principles of the Money, Banking and Insurance

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Money and Monetary System: Evolution, Function and Importance of Money, kinds of Money, Money Standards: Essentials of a good currency system. Gold Standard Bimetallism:

Paper standard, Various methods of Note Issue with particular reference to their working in India Managed Money.

2. The value of money. The Quantity Theory of Money – Fisher’s equation and its criticism; Inflation and deflation, Present monetary system.
3. Origin of banking: definition, banker and customer relationship, General and special types of customers, Types of deposits, Origin and growth of commercial banks in India. Financial Services offered by banks, changing role of commercial banks, types of banks
4. Cheques and Paying Banker: Crossing and endorsement, types and rules of crossing, Duties, Statutory protection in due course, collecting bankers: duties, statutory protection for holder in due course, Concept of negligence.
5. Principles of sound lending, Secured vs. unsecured advances, Types of advances, Advances against various securities.
6. Meaning and Benefits of Internet Banking, Home banking, Mobile banking, Virtual banking, E-payments, ATM Card/Biometric card, Debit/Credit card, Smart card, NEFT, RTGS, ECS (credit/debit), E-money, Electronic purse, Digital cash.
7. Basic concept of risk, Types of business risk, Assessment and transfer, Basic principles of utmost good faith, Indemnity, Economic function, Proximate cause, Subrogation and contribution, Types of insurance: Life and Non-life, Re-insurance, Risk and return relationship, Need for coordination. Power, functions and Role of IRDA, Online Insurance.

Suggested Reading:

1. O.P. Agarwal, *Banking and Insurance*, Himalaya Publishing House
2. C. Satyadevi, *Financial Services Banking and Insurance*, S.Chand
3. H.R. Suneja, *Practical and Law of Banking*, Himalya Publishing House
4. T.N. Chabra, *Elements of Banking Law*, Dhanpat Rai and Sons
5. C. Arthur and C. William Jr., *Risk Management and Insurance*, McGraw Hill
6. G.S Saxena, *Legal Aspects of Banking Operations*, Sultan Chand and Sons
7. P.N. Varshney, *Banking Law and Practice*, Sultan Chand and Sons
8. Jyotsna Sethi and Nishwan Bhatia, *Elements of Banking and Insurance*, PHI Learning

Paper II: Legal Aspects of Business

Objectives: To impart basic knowledge of the provisions of the Companies Act 2013 as well as statutory provisions of Industrial Laws and Labour Laws.

Paper pattern: This question paper consists of three sections, ‘A’, ‘B’ & ‘C’. Section ‘A’ consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section ‘A’ are compulsory.** Section ‘B’ consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section ‘B’ is of 2 marks. Section ‘C’ consists of eight long answer type questions, students have to attempt **any four** questions. Each question of section ‘C’ is of 7.5 marks.

Section “A” Company Law (50%)

Provisions of the Companies Act amended up to date with special reference to:

1. Incorporation; raising of capital, commencement of business, membership- types, rights & duties.
2. Management of companies: Board of Directors, Manager, Company Secretary.
3. Meetings and Resolutions.

4. Oppression and mis-management.
5. Winding up: Various kinds and consequences.

Section “B” Industrial Laws (50%)

Statutory provisions of the following legislations:

1. The Factories Act, 1948.
2. The Trade Unions Act, 1926
3. The Workmen Compensation Act, 1923
4. The Minimum Wages Act, 1948
5. The Industrial Disputes Act, 1947

Suggested Readings:

1. Ravindra Kumar, *Legal Aspects of Business*, Cengage learning, New Delhi, 2009
2. M.C. Kuchhal, *Indian Company Law*, Shree Mahabir Book Depot, Delhi, 2008
3. R.S.N Pillai and V. Bagavathi, *Legal Aspects of Business*, S.Chand Publishing.
4. P.L. Malik, *Handbook of Labour and Industrial Law*, Eastern Book Company.
5. P.P.S Gogna, *A Textbook of Company Law*, S.Chand.

Group IV: Computerized Accounting

Paper – I: Cost Accounting

Objective: To provide an in-depth understanding of the cost accounting principles for identification, analysis and classification of cost components and cost ascertainment using various costing methods.

Paper pattern: This question paper consists of three sections, ‘A’, ‘B’ & ‘C’. Section ‘A’ consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section ‘A’ are compulsory.** Section ‘B’ consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section ‘B’ is of 2 marks. Section ‘C’ consists of eight long answer type questions, **out of which at least five questions will be numerical**, students have to attempt **any four** questions. Each question of section ‘C’ is of 7.5 marks.

1. Introduction: Nature and scope of cost accounting; Cost concepts and classifications; Methods and techniques; Installation of costing system : Concept of cost audit.
2. Accounting for Material: Material control; concept and techniques, Pricing of material issues; Treatment of material losses.
3. Accounting for Labour: Labour cost control procedure; Labour turnover; Idle time and overtime; Methods of wage payment – time and piece rates; Incentive Schemes.
4. Accounting for Overheads: Classification and departmentalization; Absorption of overheads; Determination of overhead rates, under and over absorption, and its accounting treatments.

5. Cost Ascertainment: Unit costing, Job, batch and contract costing; Operating costing; Process costing – including joint and by-products excluding problems of inter process profits.
6. Cost Records: Integral and non-integral system;
7. Standard cost and variance analysis, material, labour and overheads
8. Reconciliation of cost and financial accounts.

Paper – II: Computerized Cost Accounting

Objective: To provide an in-depth understanding of the cost accounting principles for identification, analysis and classification of cost components and cost ascertainment using various costing methods in MS-EXCEL and Tally.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of six long answer type questions, students have to attempt **any three** questions. Each question of section 'C' is of 5 marks.

1. Introduction to spread sheets, working on spread sheet, MS excel and its applications working of MS-Excel.
2. Cost Accounting System: Elements of cost; Classification; Cost sheet; Cost accounting methods and techniques.
3. Use of Tally and MS-Excel to obtain cost accounting outputs for the following:
 - i. Analysis of Cost – Cost Centres wise
 - ii. Analysis of Cost – Cost Elements wise
 - iii. Allocation of overhead
 - iv. Apportionment of overheads
 - v. Preparation of cost sheet, contract A/c and process A/c
 - vi. Variable and Fixed costs – BEP, P/V analysis
 - vii. Standard cost and variance analysis
 - viii. Differential cost

Note: separate practical will be held for 15 marks in computerized accounting

B.Com. – III Year

Group I – Management Group

Paper I: Marketing Management

Objective: The objective of this course is to provide basic knowledge of concepts, principles, tools and techniques of marketing.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Introduction: Nature and scope of marketing; Importance of marketing, Marketing concepts – traditional and modern, Selling Vs. marketing, Marketing mix, Marketing environment.
2. Consumer Behaviour and Market Segmentation: An introduction to factors affecting consumer behaviour; Market segmentation – concept and importance; Bases for market segmentation.
3. Product: Concept of product, consumer and industrial goods : Product planning and development; packaging – role and functions; Brand name and trade mark; After - sales service; Product life cycle concept.
4. Price: Importance of price in the marketing - mix, factors affecting price of a product/ service: Discounts and rebates.
5. Distribution Channels and Physical Distribution: Distribution Channel – concept and role: Types of distribution channels: Factors affecting choice of a distribution channel; Retailer and wholesaler; Physical distribution of goods, Transportation; Warehousing, Inventory control; Order processing.
6. Promotion: Methods of promotion, Optimum promotion mix; Advertising media – their relative merits and limitations; Characteristics of an effective advertisement; Personal selling, Selling as a career, Characteristics of a successful sales person: Functions of salesman.
7. Recent developments in marketing: Social Marketing, online marketing, direct marketing, services marketing, green marketing, Rural marketing; Consumerism.

Suggested Readings:

1. Philip Kotler, Gary Armstrong, Prafulla Agnihotri and Ehsanul Haque, *Principles of Marketing*, 13th edition, Pearson Education.
2. J. Michael Etzel, J. Bruce Walker, J. William Stanton and Ajay Pandit. *Marketing: Concepts and Cases*. (Special Indian Edition)., McGraw Hill Education
3. D. William Perreault, and E. McCarthy Jerome., *Basic Marketing*, Pearson Education.

4. Simon Majaro, *The Essence of Marketing*, Pearson Education, New Delhi.
5. Iacobucci and Kapoor, *Marketing Management: A South Asian Perspective*, Cengage Learning.
6. Dhruv Grewal, Michael Levy, *Marketing*, McGraw Hill Education.
7. T.N. Chhabra and S. K. Grover, *Marketing Management*. Fourth Edition, Dhanpat Rai & Company.
8. Neeru Kapoor, *Principles of Marketing*, PHI Learning.
9. Rajendra Maheshwari, *Principles of Marketing*, International Book House.

Paper – II: Management Accounting

Objective: To enable students to acquire knowledge of concepts, methods and techniques of management accounting for the purpose of managerial planning, control and decision making.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, *out of which at least five questions will be numerical*, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Management Accounting: Nature, scope and functions of management accounting; Role of management accounting in decision - making; Management accounting Vs. financial accounting : Tools and techniques of management accounting
2. Ratio analysis; Classification of ratios – profitability ratios, turnover ratios, solvency and liquidity ratios, ratios for investors, Advantages of ratio analysis; Limitations of accounting ratios.
3. Funds Flow Statement, Cash Flow Statement(as per revised AS)
4. Absorption and Marginal Costing: Marginal and differential costing as a tool for decision making – make or buy; Change of product mix, Pricing, Exploring new markets, Shutdown decisions, Cost Volume Profit Analysis:Break-even analysis.
5. Budgeting for Profit Planning and control: Meaning of budget and budgetary control; Objectives; Merits and limitations; Types of budgets; Cash budget, Fixed and flexible budgeting; Zero base budgeting, Performance budging.
6. Capital Investment decisions(capital budgeting),methods,
7. Standard Costing and Variance Analysis: Meaning of standard cost and standard costing: advantages and applications; Variance analysis: material, Labour and overhead variances.
8. Responsibility accounting.

Suggested Readings:

1. T. Horngren Charles, L. Sundem Gary, Dave Burgstahler, Jeff O. Schatzberg. *Introduction to Management Accounting* , Pearson Education.
2. A. Anthony Atkinson, S. Robert Kaplan, Ella Mae Matsumura, S. Mark Young. *Management Accounting*. Dorling Kindersley(India) Pvt. Ltd.
3. Surender Singh, *Management Accounting*, Scholar Tech Press, New Delhi.
4. Garrison, Noreen, Brewer. *Managerial Accounting*. McGraw Hill.
5. Rajiv Goel, *Management Accounting*. International Book House,
6. M.N. Arora. *Management Accounting*. Vikas Publishing House, New Delhi.

7. S.N. Maheshwari and S.N. Mittal. *Management Accounting*. Shree Mahavir Book Depot, New Delhi.
8. M.Y. Khan and P.K. Jain, *Management Accounting*. McGraw Hill Education

Group II – Accounting Group

Paper – I: Income Tax Law & Accounts

Objective: To provide basic knowledge and equip students with application of principles and provisions of Income-tax Act, 1961 and the relevant Rules.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, **out of which at least five questions will be numerical**, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Basic concepts: Income, agricultural income, person, assessee, assessment year, previous year, gross total income, total income, maximum marginal rate of tax; Permanent Account Number (PAN)
2. Residential status; Scope of total income on the basis of residential status, Exempted income under section 10
3. Computation of Income under Income from Salaries; Income from house property
4. Computation of Income under Profits and gains of business or profession; Capital gains; Income from other sources
5. Deductions from Gross total income; Rebates and reliefs. Computation of total income and Tax liability of an Individual and Hindu undivided Family, Aggregation of income and Set-off and Carry forward of losses
6. Deductions and collection of Tax at source; Advance payment of Tax and Payment of Tax after Assessment.
7. Preparation of Return of Income: Filing of returns: Manually, On-line filing of Returns of Income & TDS; Provision & Procedures of Compulsory On-Line filing of returns for specified assesses.

Suggested readings:

1. Vinod K Singhania. and Monica Singhania. *Students' Guide to Income Tax, University Edition*, Taxmann Publications Pvt. Ltd., New Delhi.
2. Girish Ahuja and Ravi Gupta. *Systematic Approach to Income Tax*. Bharat Law House, Delhi.
3. B.K Agarwal and R. Agarwal, *Income Tax Law and Accounts*, Nirupam Sahitya Sadan.
4. H.C Mehrotra and S.P Goyal, *Income Tax Law and Accounts*, Sahitya Bhawan Publications.

Paper – II: Auditing and Corporate Governance

Objective: To provide knowledge of auditing principles, procedures and techniques in accordance with current legal requirements and professional standards and to give an overview of the principles of Corporate Governance and Corporate Social Responsibility.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Introduction : Meaning, Objectives, Basic Principles and Techniques; Classification of Audit, Recent Trends in Auditing: Nature and significance of cost audit; Tax audit; Management audit
2. Audit Planning, Internal Control – Internal Check and Internal Audit; Audit Procedure – Vouching and verification of Assets & Liabilities.
3. Audit of Companies:: Company Auditor- Qualifications and disqualifications, Appointment, Rotation, Removal, Remuneration, Rights and Duties , Liabilities of Statutory Auditors under the Companies Act 2013
4. Special Areas of Audit: Special features of Cost audit, Tax audit, and Management audit; Basic considerations of audit in EDP Environment; Auditing Standards; Relevant Case Studies/Problems
5. Auditor's Report- Contents and Types with specimen.
6. Corporate Governance: Conceptual framework of Corporate Governance: Theories & Models, Broad Committees; Corporate Governance Reforms.
7. Business Ethics: Morality and ethics, business values and ethics, approaches and practices of business ethics, corporate ethics, ethics program, codes of ethics, ethics committee; Ethical Behavior: Concepts and advantages
8. Corporate Social Responsibility (CSR): Concept of CSR, Corporate Philanthropy, Strategic Planning and Corporate Social Responsibility; Relationship of CSR with Corporate Sustainability; CSR and Business Ethics, CSR and Corporate Governance; CSR provisions under the Companies Act 2013.

Suggested Readings:

1. Ravinder Kumar and Virender Sharma, *Auditing Principles and Practice*, PHI Learning.
2. Aruna Jha, *Auditing*, Taxmann Publication.
3. Anil Kumar, *Corporate Governance: Theory and Practice*, Indian Book House, New Delhi
4. M.C. Kuchhal, *Modern Indian Company Law*, Shri Mahavir Book Depot. (Publishers) (Relevant Chapters).
5. N. Balasubramanian, *A Casebook on Corporate Governance and Stewardship*, McGraw Hill Education.
6. B.N. Ghosh, *Business Ethics and Corporate Governance*, McGraw Hill Education.
7. S.K. Mandal, *Ethics in Business and Corporate Governance*, McGraw Hill Education.
8. Bob Tricker, *Corporate Governance-Principles, Policies, and Practice* (Indian Edition), Oxford University Press.
9. Christine Mallin, *Corporate Governance (Indian Edition)*, Oxford University Press.

10. Relevant Publications of ICAI on *Auditing* (CARO).

Group III – Business Economics and Legal Aspects of Business

Paper – I: Goods & Services Tax (GST)

Objective: To aware students about the GST law in the country and provide an insight into practical aspects of GST and equip them to become tax practitioners.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Indirect taxes before GST: An overview; Concept of VAT; Meaning and Methods; Major shortcomings in the structure of Indirect taxes prior to the GST; Need of GST in India; Genesis, Salient features of GST; Taxes subsumed in GST; Advantages and challenges of GST; Innovation and best practices; Structure of GST including SGST, CGST, UTGST and IGST
2. Registration: Process of Registration; Compulsory Registration, Liability for Registration, Exemption from Registration. GST Unique Identity Number (GSTIN), Deemed Registration, Amendments, cancellation and revocation of registration, Migration of existing taxpayers to GST.
3. Levy and Collection of GST: Taxable event;
4. Supply of Goods and Services; Place of Supply: Within State, Interstate, Import and Export; Time of supply; Meaning, Provisions to determine time of supply of Goods and Services, Harmonized System of Goods (HSN), Tariff classifications.
5. Valuation for GST: Valuation rules, taxability of reimbursement of expenses; Exemption from GST; Small supplies and Composition Scheme; Classification of Goods and Services; Composite and Mixed Supplies.
6. Input Tax Credit(ITC) Eligible and Ineligible Input Tax Credit; Apportionment of Credit and Blocked Credits; Tax Credit in respect of Capital Goods; Recovery of Excess Tax Credit; Availability of Tax Credit in special circumstances; Transfer of Input Credit (Input Service Distribution); Payments of Taxes; Refund; Doctrine of unjust enrichment; Tax Deducted at Source(TDS), Tax Collected at Source(TCS). Reverse Charge Mechanism, Job work.
7. Payment of Taxes, maintenance of records & Submission of Return: Maintenance of Records, Mode of payment, Process of payment, Maintenance of e- ledgers, ITC utilization rules.
8. Types and periodicity of Returns: Monthly Returns, Quarterly Return for Taxpayers under Composition Scheme, Rectification of Return, Processing of Returns, Matching Input Tax Credit.

Suggested Readings:

1. Chaudhary, Dalmia and Girdharwal, GST : A Practical Approach, Taxmann Publications, New Delhi.
2. Haldia Arpit, GST Made Easy, Taxmann Publications, New Delhi.
3. Datey V.S., GST Ready Reckoner, Taxmann Publications, New Delhi.
4. Singhanian Vinod K. & Singhanian Monica, Students Guide to Indirect Tax Laws, Taxman Publications.
5. Gupta, S.S., GST; How to meet your obligations, Taxman Publications.
6. GST Manual, Taxmann Publications.
7. Garg Keshav, GST Ready Reckoner, Bharat Law House.
8. Sudhir Halakhandi, (Vastu Evam Sewa Kar) GST in Hindi.
9. Bare Act on Goods and Services Tax, Government of India, Ministry of Finance.

Paper – II: Fundamentals of Investment

Objective: To familiarize the students with different investment alternatives, introduce them to the basics of their analysis, valuation and investor protection.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. The Investment Environment- The investment decision process, Types of Investments - Commodities, Real Estate and Financial Assets, the Indian securities market, the market participants and trading of securities, security market indices, sources of financial information,
2. Concept of return and risk, Impact of Taxes and Inflation on return.
3. Fixed Income Securities - Bond features, types of bonds, estimating bond yields, Bond Valuation types of bond risks, default risk and Credits rating.
4. Approaches to Equity Analysis-Introductions to Fundamental Analysis, Technical Analysis and Efficient Market Hypothesis, dividend capitalisation models, and price-earnings multiple approach to equity valuation.
5. Portfolio Analysis and Financial Derivatives - Portfolio and Diversification, Portfolio Risk and Return; Mutual Funds; Introduction to Financial Derivatives; Financial Derivatives Markets in India
6. Investor Protection- Role of SEBI and stock exchanges in investor protection; Investor grievances and their redressal system, insider trading, investors' awareness and activism

Suggested Readings

1. C.P. Jones, Investments Analysis and Management, Wiley, 8th ed.
2. Prasanna Chandra, Investment Analysis and Portfolio Management, McGraw Hill Education.
3. R.P. Rustogi, Fundamentals of Investment, Sultan Chand & Sons, New Delhi.
4. N.D. Vohra and B.R. Bagri, Futures and Options, McGraw Hill Education

5. Mayo, An Introduction to Investment, Cengage Learning.

Group IV – Computerized Accounting

Paper – I: Computer Applications in Management Accounting

Objective: To acquire knowledge about concepts, methods and techniques of management accounting for the purpose of managerial planning, control and decision making using MS-EXCEL and Tally.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of six long answer type questions, students have to attempt **any three** questions. Each question of section 'C' is of 5 marks.

Retracing management accounting system and use of Tally and MS-Excel packages to obtain different management accounting outputs for the following:

1. Fund flow statement
2. Ratio analysis
3. Budget and budget variances
4. Analysis of account payable, account receivable and sales.
5. Inventory control
6. Projected financial statements
7. Cash forecasting
8. Standard costing
9. Marginal costing

Note: separate practical will be held for 15 marks in this paper.

Paper – II: Computer Applications in Income Tax

Objective: To provide basic knowledge and equip students with application of principles and provisions of Income-tax Act, 1961 and the relevant Rules using MS-EXCEL and TALLY.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to

attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of six long answer type questions, students have to attempt **any three** questions. Each question of section 'C' is of 5 marks.

1. Basic concepts: Income, agricultural income, person, assessee, assessment year, previous year, gross total income, total income, maximum marginal rate of tax; Permanent Account Number (PAN)
2. Residential status; Scope of total income on the basis of residential status, Exempted income under section 10
3. Computation of Income under Income from Salaries; Income from house property
4. Computation of Income under Profits and gains of business or profession; Capital gains; Income from other sources
5. Deductions from Gross total income; Rebates and reliefs. Computation of total income and Tax liability of an Individual and Hindu undivided Family, Aggregation of income and Set-off and Carry forward of losses
6. Deductions and collection of Tax at source; Advance payment of Tax and Payment of Tax after Assessment
7. Preparation of Return of Income: Filing of returns: On-line filing of Returns of Income & TDS; Provision & Procedures of Compulsory On-Line filing of returns for specified assesses.

Note: separate practical exam will be held for 15 marks in this paper.

Group V – Communication Group (Compulsory for all)

Paper – I: Business Communication

Objective: To equip students of the B.Com course effectively to acquire skills in reading, writing, comprehension and communication, as also to use electronic media for business communication.

Paper pattern: This question paper consists of three sections, 'A', 'B' & 'C'. Section 'A' consists of ten objective/very short answer type questions of 1 mark each. **All the questions of section 'A' are compulsory.** Section 'B' consists of seven short-answer type questions, out of which students have to attempt **any five** questions. Each question of section 'B' is of 2 marks. Section 'C' consists of eight long answer type questions, students have to attempt **any four** questions. Each question of section 'C' is of 7.5 marks.

1. Meaning, Importance, Process, Types: Oral, Written, Verbal, Non-Verbal, Problems of Communication, Listening as a Communication Tool, Techniques of Better Communication.
2. Communication and decision making in small groups: roll of groups, characteristics of small groups, solving problems in small groups etc., examining group discussions – its role in team work.
3. Communication within the organization; Memo writing, Proposal writing, Report writing, Office orders, circular, writing notes

4. Communication outside the organization:
5. Business Correspondence: request for quotations, tenders, orders, drafting of sales letters, circular letters, proposals, correspondence with local and foreign customers and suppliers regarding dues, complaints, follow-up letters. Correspondence with banks regarding overdrafts, cash credit and current account.
6. Resume Writing
7. Oral Presentation. Importance, Characteristics, Presentation Plan, Power point presentation, Visual aids.

Suggested Readings:

1. Urmila Rai and S.M. Rai, *Business Communication*, Himalaya Publishing House.
2. Rajender Pal, *Essentials of Business Communication*, S. Chand and Sons
3. Asha Kaul. *Business Communication*, PHI.
4. Rohini Aggarwal. *Business Communication and Organisation and Management*, Taxmann Publications Pvt. Ltd.

Paper – II: Viva Voce

Objective of viva voce exam is to boost the confidence of students in oral communication skill so that they can face the challenges of competitive world. Questions will be asked based on the general awareness related to commerce economics and accounts. Students should update their knowledge related to latest events in the field of commerce, economics and accounts. More questions will be asked from the syllabus of B.Com IIIrd year.

Sri Dev Suman Uttarakhand University Badshahithaul, Tehri Garhwal



SCHOOL OF COMMERCE AND MANAGEMENT Syllabus

For

Master of Commerce (M. Com)

Effective from Academic Session 2018-2019

**SYLLABUS OF TWO-YEAR FULL-TIME MASTER OF COMMERCE
(M.Com.) DEGREE PROGRAMME (SEMESTER SYSTEM)**

1. There shall be a full-time Master's Degree programme, viz, Master of Commerce (M.Com). The duration of the course shall be two years (two academic sessions). Each year shall be divided into two semesters (July – December and January – June). There shall be about 90 teaching days, spread over 16 weeks, in a semester. The examination shall be held in or around December and around May for the First / Third, and Second/Fourth semesters, respectively, or as decided by the University.
2. A candidate for admission to M.Com Semester I must have passed B.Com./BBA Examination from any recognised Indian or Foreign University with a minimum of 40% marks in the aggregate or has passed graduation from other subjects with a minimum of 50% marks in the aggregate, from a recognized Indian or Foreign University. Those appearing for their final year examinations of the Bachelor's Degree programme may also apply, provided they can produce their result at the time of admission.
3. A candidate who has passed the previous examination for the degree of Master of Commerce of any other recognized University (following the Semester system) may also be admitted to the final examination provided that he has offered, for his previous examination, a course of an equivalent standard, with almost similar syllabus as is required for the previous examination of this University and has attended a regular course of study of one academic year. The cases of migration shall be considered by the equivalence committee.
4. The M.Com Examination shall be in accordance with the syllabus. The maximum marks for each paper shall be 100, of which 20 marks shall be awarded on the basis of internal assessment in and 80 marks will be awarded on the basis of end semester examination of 3 hours .
5. The minimum marks required to pass any paper in a semester shall be 40% in each paper and 40% in aggregate of a semester.

6. Division is to be determined as under

Division Criteria

Successful candidates will be classified on the basis of the combined results of all four semesters , which is as follows:

Candidates securing **60% and above**: I Division

Candidates securing **50% or more but less than 60%**: II Division

Candidates securing **40% or more but less than 50%**: III Division

7. Maximum Duration

No student shall be admitted as a candidate for the examination for any of the Semesters after the lapse of **four** years from the date of admission to the Semester-I of the M. Com. Programme.

8. Use of simple calculator is allowed for examination .Scientific Calculators are not allowed .

Assessment: Internal 20 marks, End semester exam 80 marks, Duration of End semester Exam 3 Hours

Semester-I

S.No.	Course Code	Course Paper	Marks		Duration (Hrs.) (End Sem. Exam)
			Internal	End Sem. Exam	
1	M.Com.101	Corporate Accounting	20	80	3
2	M.Com.102	Management Principles & Practice	20	80	3
3	M.Com.103	Business Environment	20	80	3
4	M.Com.104	Managerial Economics	20	80	3
5	M.Com.105	E-Commerce	20	80	3

Semester-II

S.No.	Course Code	Course Paper	Marks		Duration (Hrs.) (End Sem. Exam)
			Internal	End Sem. Exam	
1	M.Com.201	Financial Management	20	80	3
2	M.Com.202	Marketing Management	20	80	3
3	M.Com.203	Human Resource Management	20	80	3
4	M.Com.204	Management Accounting	20	80	3
5	M.Com.205	Legal Aspects of Business	20	80	3

**Semester-III
Core Paper**

S.No.	Course Code	Course Paper	Marks		Duration (Hrs.) (End Sem. Exam)
			Internal	End Sem. Exam	
1	M.Com.301	International Business	20	80	3
2	M.Com.302	Research Methods & Statistics	20	80	3
3	M.Com.303	Income Tax Law & Practice	20	80	3

Elective Group

4	M.Com.304	Group A: Finance: Financial Markets & Institutions	20	80	3
	M.Com.305	Group A: Finance: Security Analysis & Portfolio Management	20	80	3

OR

5	M.Com.304	Group B: Marketing: Consumer Behavior	20	80	3
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	M.Com.305	Group B: Marketing: Marketing Communication	20	80	3
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Elective Group:

The Students have to opt either Finance Group or Marketing Group as specialization in M .Com 3rd semester. Student has to opt for both the available papers in selected specialization in examinations of 3rd semester as well as in 4th semester .Once a student opts for Finance or Marketing in 3rd semester he/she has to take the same specialization in 4th semester.

Semester-IV
Core Paper

S.No.	Course Code	Course Paper	Marks		Duration (Hrs.)
			Internal	End Sem. Exam	(End Sem. Exam)
1	M.Com.401	Entrepreneurship Development	20	80	3
2	M.Com.402	Banking and Insurance	20	80	3
		OR Project Report (Dissertation)*	20	80	—
3	M.Com.403	Seminar and Viva Voce**	20	80	—

Elective Group

4	M.Com.404	Group A: Finance: Working Capital Management	20	80	3
5	M.Com.405	Group A: Finance: International Finance Management	20	80	3
OR					
4	M.Com.406	Group B: Marketing: Marketing of Services	20	80	3
5	M.Com.407	Group B: Marketing: International Marketing	20	80	3

Note: * Students have to opt for either Banking or Insurance as a paper or Dissertation (Project Report). Only those students can opt for dissertation, who has secured 60 % marks in aggregate up to third semester.

Note: ** (**M.Com.403**) Seminar and Viva Voce (Seminar 20 marks, Viva-Voce 80 marks)

Elective Group: Students have to opt for same group of specialization which was opted in 3rd Sem. Student has to opt for both the available papers in selected specialization in examinations.

Detailed Syllabus for M. Com

Semester-I

M.Com. 101: Corporate Accounting

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objectives: The objective of the course is to apprise the students with the Accounting of companies as per Provisions of the Companies act 2013.

Course Outline:

Unit 1: Preparation of Final Accounts of Companies: Preparation of Final Account with adjustments as per revised schedule III. Profit Prior and after Incorporation of a company. Managerial Remuneration.

Unit II: Valuation of Goodwill and Share: Valuation of Goodwill and Shares with all the available methodology.

Unit III: Accounting for Redemption : Redemption of Preference Shares and Debentures.

Unit IV: Holding Companies: Preparation of Consolidated Profit & Loss Accounts and Balance-sheet.

Unit V: Accounting for Amalgamation of Companies as per AS-14: Accounts of Amalgamation, Absorption and External Reconstruction of Companies, Internal reconstruction of companies .

Suggested Reading:

1. Shukla M.C. & T.S. Grewal: Advanced Accounts, S. Chand & Co. (Pvt.) Ltd. New Delhi.
2. Shukla S.M. & S.P. Gupta: Corporate Accounting, Sahitya Bhawan Publications Agra.
- 3.. Gupta R.L & M. Radha Swamy: Ad. Accounting, Sutan Chand & Sons, Delhi
4. Maheshwari S.N: Financial Accounting,
- 5.. Monga J.R: Corporate Accounting, Mayur Publication, New Delhi

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com. 102: Management Principles and Practice:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course objectives: The objective of this course is to provide an understanding of the concepts and principles of management.

Course Outline:

Unit I: Management: Nature and Significance of Management, Classical, Neo-Classical and Modern Theories of Management. Contingency and System Approach to Management, Functions of Management.

Unit II: Planning: Meaning and Process, Goals, Objectives, Plans and Programmes. Premises of Planning – Forecasting, Process of Decision Making. Rationality and Bounded Rationality. Risk and Uncertainty in Decision Making.

Unit III: Organization: Theory, Structure, Departmentation, Vertical and Horizontal Growth in Organization, Line and Staff Functions and Conflicts, Span of Management, Authority, Accountability, Delegation, Centralization and Decentralization, Formal and informal organization Group Functions in Organization: Formation and Role of Groups in organization.

Unit IV: Staffing: Nature and Purpose of Staffing: Selection, Performance Appraisal, Organizational Development.

Leading: Motivation – Meaning and Theories of Motivation, Motivation in Practice Leadership – Types and Traits of a Leader, Leadership Styles. Communication: Forms, Process, Barriers and Effective Communication.

Unit V: Controlling: Meaning and Process of Controlling. Techniques of Controlling. Management of Change: Adaptability to Change, Resistance to Change. Emerging Challenges for the Managers.

Suggested Reading:

1. Stoner, James A.F., Management, Pearson (Textbook)
2. Robbins, Stephen P. and Coulter, Mary, Management, Prentice Hall
3. Koontz, Harold and Wehrich, Heinz, Essentials of Management, McGraw-Hill
4. Bateman, Thomas S. and Snell, Scott A., Management, McGraw-Hill
5. Hill, Charles W.L. and McShane , Steven L., Principles of Management, McGraw Hill
6. Pareek, Udai, Understanding Organizational Behaviour, OUP, New Delhi (Textbook)
7. Thakur and Burton, Management, McGraw-Hill

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.103: Business Environment:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objectives: The objective of this course is to apprise the students with various concepts of business environments so that their ability to take decisions in changing business environment can develop .

Course Outline:

Unit I: Theoretical Framework of Business Environment: Concept, significance and nature of business environment; Elements of environment micro and macro; Techniques of environmental scanning and monitoring.

Unit II: Economic Environment of Business: Significance and elements of economic environment; Economic system and business environment; Economic planning in India; Government policies, industrial policy, fiscal policy, monetary policy, EXIM policy.

Unit III: New Economic Policy: Privatization, Liberalization and Globalization and their Implications for Indian Business, MNCs.

Unit IV: Political and Legal Environment of Business: Critical elements of political environment; Government and business; Competition Act 2002, FEMA and Consumer Protection Act.

Unit V Technological Environment: Factors Influencing Technological Environment. Role and Impact of Technology on Business. Transfer of technology-Channels, Methods and limitations.

Suggested Reading:

1. Adhikary, M.: Economic Environment of Business Sultan Chand & sons New Delhi.
2. Ashwathappa, K.: Legal Environment of Business Himalaya Publication New Delhi.
3. Cherunilam, Francis: Business Environment Himalaya Publishing House New Delhi.
4. Raj Vaid: Business Environment.
5. Dhingra, I.C. Indian Economy: Environmental and Policy, Sultan Chand & Sons, New Delhi.
6. Mishra S.K. and V.K. Puri: Economic Environment of Business.

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.104: Managerial Economics:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objectives: The objective of this course is to develop managerial perspective on economic fundamentals so that ability of taking decisions relating to business can grow.

Course Outline:

Unit 1: Introduction: Nature and Scope of managerial economics and its relationship with other disciplines; Its role and significance in decision making; Basic concepts; Positive Vs Normative analysis.

Unit II: Market Forces: Demand and Supply:

a) Demand Analysis: Theory of demand; Objectives of demand analysis and determinants of demand; Theory of consumer behaviour; Elasticity of demand and its measurement methods; Importance in decision-making.

b) Supply Analysis: Objectives of supply analysis; Determinants of supply.

Unit III: Production Function and Cost Analysis: Theory of production and cost analysis; Production function and its managerial uses; Laws of production and analysis; Empirical estimates of production and cost; Short-run and long-run average cost curves and their analysis; Economies and diseconomies of scale.

Unit IV: Organisation of the Firm: Pricing decision; Pricing under different market structure; Perfect and imperfect (monopoly, monopolistic and oligopoly markets); Pricing strategies; Collusive and non-collusive oligopoly; Baumol's marries; and O. Williamsons' models.

Suggested Reading:

1. Baumal, Shalliam J. Economic theory and operations analysis, Prentice hall, Landon.
2. Baya, Michail R. Managerial economics and business strategy, Mc Graw hill New York.
3. Chopra O.P. Managerial economic, Tata Mc Graw hill Delhi.
4. Dean, Joel. Managerial economic, prentice hall Delhi.
5. Crag W. Peterson, W.Cris Lewis, and Sudhir K. jain, managerial Economics, Prentice-Hall of India/ Pearson, New Delhi,
6. H.L Ahuja, Managerial Economimcs, S. Chand,
7. DN Dwivedi, Managerial Economics, Vikas Publishing House, New Delhi
8. Samuelson Paul and Nordhaus, Economics, Tata McGraw-Hill, New Delhi.

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.105: E-Commerce:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objective: The main objectives of the course is to familiarize the students with the fundamentals of e-commerce as it is a fastest growing concept in the field of business .

Course Outline:

Unit I: Introduction

Meaning, nature, concepts, advantages, disadvantages and reasons for transacting online, types of e-Commerce, e-commerce business models (introduction , key elements of a business model and categorizing major E-commerce business models), forces behind e-commerce.

Technology used in e-commerce:

The dynamics of world wide web and internet(meaning, evolution and features) ; Designing, building and launching e-commerce website (A systematic approach involving decisions regarding selection of hardware, software, outsourcing vs. in-house development of a website)

Unit II: Security and Encryption

Need and concepts, the e-commerce security environment: (dimension, definition and scope of e-security), security threats in the E-commerce environment (security intrusions and breaches, attacking methods like hacking, sniffing, cyber-vandalism etc.), technology solutions (Encryption, security channels of communication, protecting networks and protecting servers and clients),

Unit III: IT Act 2000 and Cyber Crimes

IT Act 2000: Definitions, Digital signature, Electronic governance, Attribution, acknowledgement and dispatch of electronic records, Regulation of certifying authorities, Digital signatures certificates, Duties of subscribers, Penalties and adjudication, Appellate Tribunal, Offences and Cyber-crimes

Unit IV: E-payment System

Models and methods of e-payments (Debit Card, Credit Card, Smart Cards, e-money), digital signatures (procedure, working and legal position), payment gateways, online banking (meaning, concepts, importance, electronic fund transfer, automated clearing house, automated ledger posting), risks involved in e-payments.

Unit V: On-line Business Transactions

Meaning, purpose, advantages and disadvantages of transacting online, E-commerce applications in various industries like {banking, insurance, payment of utility bills, online marketing, e-tailing (popularity, benefits, problems and features), online services (financial, travel and career), auctions, online portal, online learning, publishing and entertainment} Online shopping (amazon, snapdeal, alibaba, flipkart, etc.) Website designing ,Introduction to HTML; tags and attributes: Text

Formatting, Fonts, Hypertext Links, Tables, Images, Lists, Forms, Frames, Cascading Style Sheets.

Suggested Readings:

1. Laudon Kenneth C. and Traver Carlo Guercio, *E-Commerce*, Pearson Education.
2. Whiteley David, *E-commerce: Strategy, Technology and Applications*, McGraw Hill Education
3. Bhaskar Bharat, *Electronic Commerce: Framework, Technology and Application*, 4th Ed., McGraw Hill Education
4. Joseph P.T., *E-Commerce: An Indian Perspective*, PHI Learning
5. Bajaj K.K. and Nag Debjani, *E-commerce*, McGraw Hill Education
6. Chhabra T.N., *E-Commerce*, Dhanpat Rai & Co.
7. Madan Sushila, *E-Commerce*, Taxmann.
8. Chhabra T.N., Jain Hem Chand, and Jain Aruna, *An Introduction to HTML*, Dhanpat Rai & Co.

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M COM Semester II

M.Com.201: Financial Management:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course objectives: To develop adequate level of knowledge of various areas of financial Management and to apprise the students about basic analytical techniques and methods relating to Financial Management of Organizations.

Course Outlines:

Unit I: Financial Management: Nature, Objectives and Scope, Modern concept of finance, Financial Decision- Types of Financial Decisions, Role of Finance Manager, Risk Return Framework for Financial Decision Making, Time value of money.

Unit II:

- a) **Cost of capital:** Concept of value, present value, basic valuation models.
- b) **Capital Structure:** Concept, Financial Leverage and its Impact on the Valuation of firm, Theories of Capital Structure- net income approach, operating income approach, miller – Modigliani approach, Determinants of Capital Structure.

Unit III: Investment Decisions: Nature and Kinds of Capital Budgeting, Techniques of Evaluating Capital Budgeting Decisions, Capital Budgeting Under Risk and Uncertainty, Analysis of Real Life Capital Budgeting Decisions- Some Case Studies.

Unit IV:

- a) **Dividend Decisions:** Dividend and its form, Theories of Dividend Policy and their Impact on the Value of a Firm, Determinants of Dividend Policy.
- b) **Working Capital Management:** Meaning and Concepts of Working Capital. Estimating Working Capital Requirements. Management of Cash Receivables and Inventory.

Unit V: Corporate Restructuring: Merger and Acquisitions-Types, Sources of Takeover Gains, Valuation and Financing of Acquisitions, Analysis of some Case Studies. The Empirical Evidences on Theories and the Case Studies Relevant for above Topics are Required be Discussed.

Note:

Suggested Readings:

1. Van Horne James C.: Financial Management and Policy, Prentice Hall of India 12th Ed,208.
2. Chandra, Prashna: Financial Management. McGraw Hill.
3. Pandey, I.M: Financial Management. 9th Ed. Vikas Publishing.
4. Khan and Jain: Financial Management. McGraw Hill.
5. Ross, S.A., R.W: Westerfield and J. Jaffe, Corporate Finance, McGraw Hill.
6. Brealey, R.A. and S.C. Myers: Principles of Corporate Finance, McGraw Hill
7. .Saran, V Financial Management, PHI.

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.202: Marketing Management:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objectives: The objective of this course is to facilitate understanding of the conceptual framework of marketing and its applications in decision making under various environmental constraints.

Course Outlines:

Unit I:

- a) **Marketing Concept:** Marketing Management; Nature and scope; Evolution of marketing; Selling vs marketing; CRM; Emerging role of marketing; Marketing mix.
- b) **Marketing Environment:** Concept; Need for study; Major elements and their impact on marketing decisions.

Unit II:

- a) **Consumer Behaviour:** Consumer vs. organizational/industrial buyer; Their characteristics; Importance of understanding consumer behaviour; Determinants of consumer behaviour; Theories of consumer behaviour; Various buying roles in family; Types of buying behaviour; Consumer decision-making process in buying.
- b) **Market Segmentation:** Nature and importance of segmentation; Pre-requisites for effective segmentation; Bases of segmenting consumer markets; Market selection strategies; Positioning.

Unit III: Product Decisions: Concept of product; Classification of products; Product line and product mix; Branding, packaging and labeling; Customer services; Development of new product; Product life cycle; The new product (Consumer); Adoption process.

Unit IV:

- a) **Price Decisions:** Pricing as a marketing variable-its role and importance; Price vs. non-price competition; Factors influencing price determination; Price setting in practice; Price policies and strategies.
- b) **Distribution Channels and Physical Distribution Decisions:** Why are marketing intermediaries used? Marketing channel functions; Selecting channels distribution; Determining the intensity of distribution; Channel management decisions- selection, motivation and evaluation of individual middlemen; Manufacturer- distribution relationship; Retailing and wholesaling; Logistics of distribution.

Unit V:

- a) **Promotion Decisions:** Nature; Objectives and importance of promotion; Communication process; Promotion mix and methods; Advertising; Personal selling; Public Relations and Sales promotion.
- b) **Legal, Ethical and Social Aspects of Marketing:** Consumerism; Consumer protection measure in India; Recent Developments in consumer protection in India.

Suggested Reading:

1. Sharma Kavita and Aggarwal Swati ,Principles of Marketing,Taxmann Publications
2. Kotler Philip: Marketing Management-Analysis, Planning, Implementation and Control, Prentice hall New Delhi.
3. Ramaswami, V.S and Namakumari, S: Marketing Management Mac Millan India New Delhi.
4. Stanton, Shallian J. and Charles Futrell: Fundamentals of Marketing Mc Graw hill New York.
5. Saxena, Rajan Marketing Management, Tata MCGraw Hill, New Delhi

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.203: Human Resource Management:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objectives: The objective of this course to enable students to understand procedures, processes and techniques relating to Human Resource Management of an organization.

Course Outlines:

Unit I: Introduction to Human Resource Management: Evolution of HRM , Objectives and functions of HRM , Role and responsibilities of HR Manager , Relevance of HRM , Systems approach to HRM

Unit II: Acquisition of Human Resource Management: Human Resource Planning: Purpose and process , Recruitment and selection: Sources of recruitment, stages in selection process , Placement, goals analysis: Job description and job specification.

Unit III: Developing Human Resources: Training and Development: Training needs, training methods, application of computers in training, developing effective training programmes, Concept of HRD, Management development programmes.

Unit IV:

1. **Performance Appraisal:** Concept and objective of performance appraisal , Process of performance appraisal , Criteria for performance appraisal , Benefits of performance appraisal , Limitations and constraints , 360 degree performance appraisal , Promotion-degree, transfer and separation: Promotion, purpose, principles and types; Transfer: Reasons, principles and types; Separation: Lay-off, resignation, dismissal, retrenchment, voluntary, retirement scheme.
2. **Motivating Human Resources:** Motivation at work, major motivation theory: An overview, Participative management, Compensation Management, Incentives: Concepts, types of incentives; Incentives schemes in Indian industries; Fringe benefits, Discipline and employees' grievance redressal.

Unit V:

- a) **Individual Behaviour:** Attitude, perception, learning, values.
- b) **Group Processes:** Group dynamics, power, policies, organizational culture and climate. Forms of groups.
- c)

Suggested Readings:

1. Dessier, Gary and Biju Varkkey, Human Resource Management, Pearson Education, New Delhi,.
2. Mejjia Gomez, et al., Managing Human Resources, 3rd ed. Pearson Education.
3. Ivancevich, Human Resource Management, Tata McGraw-Hill.
4. Decenzo, David S and Stephen P. Robbins, Personal/ Human Resource Management, , Prentice Hall of India, New Delhi,

5. Pattanayak, Biswajeet Managing Human Resources, 3rd ed., Prentice Hall of India, New Delhi.
6. Aswathappa, K. Human Resource and Personnel Management, Tata McGraw-Hill.
7. Dwivedi, RS Managing Human Resources in Indian Enterprises, Galgotia Publishing Co., New Delhi, Latest ed.

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.204: Management Accounting:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course objectives: The objective of this course to impart knowledge of various accounting tools and techniques useful for business decision making.

Course Outline:

Unit I: (a) Management Accounting: Concept, Importance, Nature and Functions, Financial vs Management Accounting, Cost vs Management Accounting, Role of Management Accountant.

(b)Basic Concepts of Costing: Basic Cost Terms and Concepts, Type and Elements of Cost, Cost Allocation- Absorption Costing, Marginal Costing, Activity Based Costing.

Unit II: Financial Statement Analysis: Trend Analysis, Ratio Analysis, Preparation and Analysis of Fund Flow Statement and Cash Flow Statement (Revised AS).

Unit III: (a) Use of Marginal Costing in Decision Making.

(b) Cost Volume Profit (CVP) Analysis: Contribution Margin, Break-Even Analysis, Profit Volume (P/V) Analysis, Multiple Product Analysis, Optimal Use of Limited Resources.

Unit IV: Budget and Budgetary Control: Preparation of Different Types of Budgets, Fixed Versus Flexible Budgets.

Unit V: (a) Standard Costing: Concept, Advantage, Types of Standards, Variance Analysis- Material, Labour, Overheads, Managerial Use of Variances.

(b) Responsibility Accounting: Concept of Responsibility Accounting, Responsibility Central-Cost Centre, Revenue Centre, Profit Centre, Investment Centre.

Suggested Reading:

1. Horngreen : Management Accounting. PHI
2. Homgreen Charies T., and Gary L. Sundem and Shalliam O. Stration, Introduction to Management Accounting, Prentice Hall of In dia,
3. Colin, Dury Management and Cost Accounting, Thomson Learning,
4. Jawahar Lal, Advanced Management Accounting, Text Problems and Cases, S. Chand & Co., New Delhi,
5. Maheswari, S.N.: Management Accounting.

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.205: Legal Aspects of Business:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objectives: The objective of this course is to apprise students with the provisions of various laws relating to legal aspects of business

Unit I: Company Act; Selected Aspects: Nature, kinds of companies, formulation of company; Company management, powers, functions and duties and liabilities of directors, managerial compensation, oppression and mismanagement.

Company Meetings; Types of meetings, resolutions, winding up.

Unit II: The Consumer Protection Act, 1986: Basic Concepts: Complaint, complainant, consumer, rights of consumer, consumer forums, their role, powers and functions, procedure for consumer grievance redressal, major decided cases.

Unit III: The Competition Act, 2002: Basic concepts, powers of central government under the competition act, major provisions of the competition act: Role and working of competition commission of India.

Unit IV: Information Technology Act: Major provisions.

Unit V: Right to Information Act (RTI) :Major provisions

Suggested Reading:

1. Singh, Avtar Principles of Mercantile Law, Eastern Book Company, Lucknow
2. Kuchhal, M.C. Business Law, 6th ed., Vikas publishing House, New Delhi
3. Ravindra Kumar, Legal Aspects of Business, Cengage learning, New Delhi,
4. Avtar Singh, Consumer Protection Law, Eastern Book Co., Lucknow,
5. M.C. Kuchhal, Indian Company Law, Shree Mahabir Book Depot, Delhi,

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

Semester III

M.Com.301: International Business:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objective: The objective of this course is to make students familiar with the theoretical framework of International Business .

Course Outline:

Unit I: International Business: Meaning, Concept, Importance and Scope of international business, Environment analysis; Geographical, Socio-cultural, Political and legal. Theoretical Foundations of International Business: Theories of International trade, Gains from international trade; Balance of payments analysis.

Unit II: International Economic Environment: International economic institutions and agreement; WTO, IMF, IFC, World Bank.

Unit III: (a) Regional Economic Co- Operation: Forms of regional groupings; Integration efforts among countries in Europe, North America, and Asia.

(b) International Financial Environment: International financial system and institution; Foreign exchange markets and risk management; Foreign investments types and flows; Foreign investment in Indian perspective.

Unit IV: (a) Organisational Structure for International Business Operations: Key issues involved in making international production, finance and human resource decisions; International business negotiations.

(b) Developments and Issues in International business: Outsourcing and its potentials for India; strategic alliances, mergers and acquisitions; Role of IT in international business; international business and ecological considerations.

Unit V: (a) Foreign trade promotion measures and organizations in India; special economic zones (SEZs) and 100% export oriented units (EOUs); measures for promoting foreign investments into and from Indian; Indian joint ventures and acquisitions abroad.

(b) Financing of foreign trade and payments terms.

Suggested Reading:

1. Adhikari Manab: Global Business Management Mac Millan New Delhi.
2. Black and Sundaram: International Business Environment prentice hall New Delhi.
3. Sodersten, B.O: International Economics Mac Millan Landon.
4. Tayeb, Monis H: The Global Business Environment-An Introduction sage publication New Delhi
5. Charles, W.L. Hill and Arun K. Jain, International Business, Tata McGraw- Hill, New Delhi

6. Johnson, Derbe, and Colin Turner, International Business- Themes and Issues in the Modern Global Economy, London: Routledge
7. Cherunilam, Francis, International Business: Text and Cases, Prentice-Hall of India Ltd.
8. Justin, Paul, International Business, Prentice- Hall of India Ltd.,

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.302: Research Methods & Statistics:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objectives: The objective this course is to enable the students to understand how to design and carry out business research by applying various statistical tools and techniques.

Course Outline:

Unit I: (a) Business research: purpose, steps, objectives, preliminary research.
(b) Research design: preparing a blue print, establishing hypotheses, process. Sources of data.

Unit II: Developing research instruments: questionnaires and scales- types, preparation, standardisation.

Unit III: (a) Sampling methods & techniques: Probability and non- probability methods, random, non random techniques, stratification, focus group.
(b) Probability: Progressions and elements of set theories. Calculation of simple and compound Probabilities.

Unit IV: (a) Analysis of Time Series: Meaning and components, Measurement of Trend.
(b) Linear regression: equations, coefficients, introduction to multiple regression analyses.

Unit V: Testing Hypotheses: Test of significance Application of 'T' and 'F' Tests. Analysis of variance (ANOVA). Coefficient of Association and contingency, X^2 Test

Suggested Reading:

1. Research Methodology: William Zikmund
2. Marketing research: Aaker & Day
3. Marketing research, Westfall, Boyd & Stasch
4. Marketing research: Naresh Malhotra.
5. Bhardwaj, R.S.: Business Statistics
6. Business Statistics: Gupta, S.P.
7. Business Statistics: Hooda, R.P.

Business Statistics: Singh, S.P

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.303: Income Tax Laws and Practice:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objective: The purpose of this course is to enable the students to understand the various provisions of Income Tax Act .

Course Outline:

Unit I: Introduction: Basic concepts, Residential Status, Exempted Income.

Unit II: Various heads of Income and Computation of Income under different heads of Income

Unit III: Deduction from gross total income, Rules of set off and carry forward of loses, clubbing of income, tax authorities, various types of Assessment.

Unit IV: Assessment and computation of Income of Individuals, Partnership Firms and Company.

Unit V: Appeal and Revision, Payment of Advance Tax, Deduction at source and Tax Planning.

Suggested Readings:

- 1;Systemetic Approach to Taxation. ,wolters cluver
- 2.Direct Tax Laws and Practice, VK Singhania,Taxmann publication
- 3.Students Guide to Income Tax VK Singhania Taxmann
- 4.Income Tax Law and Practice,Gaur and Narang Kalyani Publication

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

Elective Group: The Students have to opt either Finance Group or Marketing Group as specialization in M .Com 3rd semester. Student has to opt for both the available papers in selected specialization in examinations of 3rd semester as well as in 4th semester .Once a student opts for Finance or Marketing in 3rd semester he/she has to take the same specialization in 4th semester .

Finance Group:

M.Com.304: Financial Markets and Institutions:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course objectives: The main objective of the course is to provide a sound information and knowledge of broad framework of Financial Systems and its constituents.

Course Outline:

Unit I: (a) Financial Markets: Nature, Functions and Efficiency, Financial System and Economic Development, Flow of Funds in Indian Economy, An Overview of Indian Financial System.

(b) Money Market: Organization, Instruments, Functioning and its Regulations and Recent Developments, RBI.

(c) Capital Market: Structure of Capital Market in India-Primary and Secondary Markets, NSC, OTCEI, SEBI and its Role as Regulator.

Unit II: Financial Institutions: Functions and working of IDBI, IFCI, ICICI, NABARD, SIDBI and SFCs.

Unit III: Management of Banking and Other Institutions:

(a) Depository Institutions: Commercial Banks and Industrial Finance, Bank Credit, Performance of Indian Banking, Regulatory Aspect of Banking.

(b) Non Depository Institutions: Mutual Funds, Measuring Performance of Mutual Funds, Functioning and Regulatory Aspects, Working and Regulatory Framework of UTI, LIC and GIC.

Unit IV: Financial Instruments: Equity Shares, New Issue Market and Secondary Market-The Allocative and Operational Efficiency, Preference Shares, Private Placement-Channels, Debentures and Other Fixed Income Securities, Engineered Financial and Monetary Instruments.

Unit V: Foreign Capital: Foreign Capital as a Source of Finance, Place of Foreign Capital in the Over all Framework of Indian Financial System, The Regulatory Framework and NRI Investments.

Suggested Reading:

1. Kohn Meir Financial Institutions and Markets, Oxford University Press

2. Madura Jeff: Financial Markets and Institutions, South Western Cengage Learning
3. Mishkin, Fredrick S. and Stanley G. Eakins: Financial Markets Institutions, Pearson Education Ltd.
4. Reserve Bank of India: Report on Currency & Finance.
5. Bhole L.M.: Financial Institutions and Markets, McGraw Hill Co. New Delhi
6. Khan M.Y: Financial Services, McGraw Hill, New Delhi
7. M.Y. Khan Indian Financial System, , McGraw Hill Publishing Company, New Delhi

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.305: Security Analysis and Portfolio Management:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objective: Objective of this course is to make students familiar with understanding of various techniques of security analysis and portfolio management.

Course Outline:

Unit I: Securities and Risk and Return: Meaning, nature and types of securities, concept of portfolio management, Measurement of return, meaning of risk, types of risk-systematic and unsystematic risk, Basic valuation models (with numerical).

Unit II: Fundamental Analysis: Economic Company and industry analysis. Technical analysis and random walk hypothesis, efficient market hypothesis.

Unit III: Concept of valuation :Valuation of Shares, Debentures and Preference Shares

Unit IV: Concepts of portfolio diversification and its effects: Theories of Portfolio: Capital asset pricing model, arbitrary pricing model.

Unit V: Portfolio Performance Evaluation and Revision

Suggested Readings:

- 1.Fisher & Jordon: Security Analysis and Portfolio Management
2. Jack clark Francis: Management of Investments Mc Graw hill.
3. Markowitz: Portfolio Selection yale University Press, yale.
4. Boltem: Security analysis and Portfolio Management.
5. Jones Tuttle, Heaton: Essentials of Modern Investments.
6. Prasannachandra, International management Tat McGraw Hill New Delhi.
7. Avdhani, V.A, Investment and Security Market in India, Himalaya Publishing house, 3rd Edition.

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

Marketing Group:

M.Com.304: Consumer Behaviour:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objectives: The objective of the course is to develop the basic understanding of the concepts and theories of consumer behavior and their applications in the field of marketing decision making.

Course Outline:

Unit I: Introduction: Defining consumer behaviour; reasons for studying behaviour, applying consumer behaviour knowledge; scope of consumer behaviour; market segmentation; bases of segmentation, criteria for effective targeting of market segments.

Unit II: Consumer as an Individual: Consumer motivation; consumer involvement, personality and self concept; perception consumer learning and memory; information processing, attitudes and changing attitudes

Unit III: Consumer in Social and cultural settings: Reference groups and family influences; Social class, cultural; sub cultural and cross cultural influences on consumer behaviour; personal influences and diffusion of innovations; impact of media and globalization.

Unit IV: Consumer Decision Process: Problem recognition; search and evaluating; purchasing processes; post purchase behaviour; consumer behaviour models; consumerism; organizational buying behaviour.

Unit V: Consumer Satisfaction: Measurement of consumer satisfaction and dis-satisfaction, repeat buying, brand switching and loyalty, opinion leadership, complaining behaviour.

Suggested Readings:

1. Schiffman and Kanuk: Consumer Behaviour
2. Engle, Blackwell and Miniard: Consumer Behaviour
3. Zaltman and Wallendorf: Consumer Behaviour
4. Mellot, Douglas W. Tr. : Consumer Behaviour
5. Loudon and Della Bitta: Consumer Behaviour
6. Benneton: Consumer Behaviour

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.305: Marketing Communication

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objectives: The purpose of this course is to enable a student to gain understanding of the concepts, strategies and issues relating to marketing communication

Course Outline:

Section A: Advertising

Unit 1: Communication process: Nature of communication process and its different elements, obstacles in communication process. Communication process, communication process in marketing: Importance and applications of communication process in marketing, different elements of promotional mix and communication process relevant to them, communication process in corporate image building.

Unit II: Advertisement: Importance of advertising in modern marketing, Different types of advertising, role of advertising in the national economy, setting of advertising objectives, advertising budget, factors affecting the advertising expenditure in a company, advertising department and its organization, advertising agencies, their organization and functions.

Unit III: Message and copy: Message strategy and design, elements of advertising copy, developing effective advertising copy, creativity and visualizing in advertising, media planning: Comparative study of different advertising media, Media selection, media scheduling.

Section B: Sales Management

Unit IV: Introduction: Nature and importance of personal selling, personal selling versus advertising, types of sales persons, selling as a career, process of effective selling.

Unit V: Management of the sales force: recruitment and selection; Training and development; direction, motivation, compensation, performance appraisal, sales planning and control; Market analysis, sales budget, sales territory, sales quota.

Suggested Readings:

1. Wright, Wintersand zeigers: Advertising Management
2. Dunnand Barban- Advertising: Its role in modern marketing advertising
3. Chunnawala & Sethia: Advertising management
4. Still, Cundiff & Govoni: Sales Management
5. Subroto Sengupta: Cases in advertising and communication
6. Spiro: Management of sales force.

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

Semester IV

M.Com.401: Entrepreneurship Development:

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course objective: The objective of the course is to develop the ability of entrepreneurship among students and to provide adequate knowledge to the students for formulating and handling projects.

Course Outline:

Unit I: Entrepreneurship: Definition and Structure, Entrepreneurial Culture, Theories of Entrepreneurship, Classification and Types of Entrepreneurship. Factor Effecting Entrepreneurial Growth, Entrepreneurial Competencies, Women Entrepreneurship.

Unit II: Entrepreneurial Development: Entrepreneurial Environment, Process of Entrepreneurial Development, Entrepreneurial Development Programme, Role of Government and Specialized Institutions in Entrepreneurship Development.

Unit III: Issues Related to Entrepreneurship in Uttarakhand.

Unit IV: Entrepreneurship Development and Government: Role of Central Government and State Government in promoting entrepreneurship with various incentives, subsidies, grants etc.

Unit V: Project Financing: Estimation of Financial Requirements, Capital Structure and Source of Financing, Various Financing Schemes of Financial Institutions. Foreign Currency Financing.

Suggested Readings:

1. Chandra Prasanna: Project Preparation, Appraisal and Implementation., Tata McGraw Hill,
2. Holt: Entrepreneurship
3. S.S. Khanka: Entrepreneurial Development
4. Vasant Desai: Entrepreneurial Development
5. Madhurima Lall & Shikha Sahai: Entrepreneurship
6. Clifford Gray: Project Management, Richard D. Irwin,

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.402: Banking And Insurance

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course Objective: To impart knowledge about the basic principles of the banking and insurance as there are numerous opportunities for jobs in Banking and Insurance sector.

CONTENTS

Unit 1: Introduction

Origin of banking: definition, banker and customer relationship, General and special types of customers, Types of deposits, Origin and growth of commercial banks in India. Financial Services offered by banks, changing role of commercial banks, types of banks.

Unit 2: Cheques and Paying Banker

Crossing and endorsement - meaning, definitions, types and rules of crossing. Duties, Statutory protection in due course, collecting bankers: duties, statutory protection for holder in due course, Concept of negligence.

Unit 3: Bank's Lending and Internet Banking

Principles of sound lending, Secured vs. unsecured advances, Types of advances, Advances against various securities.

Internet Banking, Meaning, Benefits, Home banking, Mobile banking, Virtual banking, E-payments, ATM Card/ Biometric card, Debit/Credit card, Smart card, NEFT, RTGS, ECS (credit/debit), E-money, Electronic purse, Digital cash.

Unit 4: Basic Concept of Insurance

Basic concept of risk, Types of business risk, Assessment and transfer, Basic principles of Insurance - utmost good faith, Indemnity, Proximate cause, Subrogation contribution, warranty and insurable interest etc., Types of Insurance: Life and Non-life, Re-insurance, Risk and return relationship, Need for coordination. Power, functions and Role of IRDA, online Insurance .

Unit 5: Life Insurance

Life Insurance: Features, Importance, Advantages, contract of life insurance, Hazards; Procedure of effecting life insurance (from proposal to policy); Selection, Substandard Lives; Kinds of policies, Annuities, Policy conditions; Computation of premium, numericals of premium computations Mortality table ,kinds ,methods of construction of mortality table, investment of life fund, valuation and bonus, Organization and working of the Life Insurance Corporation of India. entry of private sector in Insurance

. Suggested readings:

1. Agarwal O.P., *Banking and Insurance*, Himalaya Publishing House
2. Satyadevi C., *Financial Services Banking and Insurance*, S.Chand
3. Suneja H.R., *Practical and Law of Banking*, Himalaya Publishing House
4. Chabra T.N., *Elements of Banking Law*, Dhanpat Rai and Sons
5. Arthur C. and C. William Jr., *Risk Management and Insurance*, McGraw Hill
6. Saxena G.S; *Legal Aspects of Banking Operations*, Sultan Chand and Sons
7. Varshney P.N., *Banking Law and Practice*, Sultan Chand and Sons
8. Sethi Jyotsna and Bhatia Nishwan, *Elements of Banking and Insurance*, PHI Learning

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

Or

M.Com. 402 : Project Report (Dissertation)

Those students who have obtained at least 60 % marks in aggregate in the first and second semester of M com can opt the project report. In place of paper of Banking and Insurance.

As part of the curriculum, students are required to undertake the Project Report (PR) in their chosen area. For this purpose, each student shall be assigned a Faculty member as his/her Project Guide.

Objective: Project report writing trains a student to communicate information in an effective and convincing way. Project Report in itself is a complete and compact training programme.

The student would choose a topic of his/her choice and they will conduct an investigative research on the topic .The topic would be related to business . Research will be conducted on empirical basis under the guidance of the project guide/faculty member.

Final Report Submission: This part would involve data collection, tabulation, data analysis, findings, suggestions, limitations, conclusion, and scope for further studies. Students should Use appropriate data analysis tools and software.

Every report must be hard bounded with Black Leatherette cover duly embossed in Golden in BOLD letters with the Project Title, Student's name & roll no., class, batch and year and must be submitted to the Department. Copy of Synopsis should also be submitted.

Following should be the chapterization scheme of the report. The list of chapters is indicative in nature and can be modified by the Faculty guide if required.

Indicative chapters for Final Research Report

- Introduction (Background and significance)
- Literature Review & Theoretical background
- Objectives
- Hypothesis
- Research Design and sampling design & Theoretical model
- Data Analysis
- Findings
- Suggestion & Limitations
- Conclusion
- Appendix, Bibliography & Reference, Questionnaires, Scales

Plagiarism/ Cheating/ Unfair Means in Projects/ Assignments

Plagiarism is when you steal the thoughts or writing of others and offer them as your own. Everyone repeats someone else's ideas at some point in their academic career but when doing so, it is important to acknowledge it. You can avoid plagiarism by quoting within inverted commas and acknowledging the source.

Final Submission of the Project: Hard copy and Soft copy of the Project Report along with the Synopsis shall be submitted to the University for evaluation.

M.Com.403: Seminar and Viva Voce

(a) Seminar (20 marks)

Course Objective: The objective is to develop the art of oral communication skill among the students so that they can face interviews for jobs.

The students shall be expected to give several presentations during the semester with the final one on the day of the examination. The viva voce shall give them an opportunity to experience an interview. Regular quizzing sessions shall be held with the students throughout the semester under this course.

(b) Viva Voce (80 marks)

Course Objective: The objective is to help them gain the experience of a final interview before they go out seeking jobs in industry and also develop confidence in a face to face interaction in a formal setting.

At the end of the semester, a viva voce shall be conducted with an external and internal examiner wherein the students shall be expected to answer questions related to both their project report and the courses studied in the IVth semester, as well as, previous semesters.

Elective Group: Students have to opt for same group of specialization which was opted in 3rd sem. Student has to opt for both the available papers in selected specialization in examinations

Finance Group:

M.Com.404:Working Capital Management

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course objective : Working capital is a financial tool which represents operating liquidity available to a business .Student should have adequate knowledge of determining working capital of a business concern.

Unit I: Introduction, meaning, concepts, classification and importance of working capital, Relevance of current assets and current liabilities in the balance sheet, Objectives of WCM. Over- capitalisation, under-capitalisation, zero working capital, Short-term v/s long term financing-A risk-return trade-off. Liquidity v/s profitability trade-off. Cost trade-off, Working capital approaches.

Factors determining working capital requirements, Assessment and forecasting of working capital requirements, Assessment and forecasting of working capital requirements, Operating cycle, Weighted Operating cycle, Relevance of current assets and current liabilities and their inter-relationship, Management of different current assets

Unit II Inventory Management: , Management of Inventory. Relevance and scope, Deciding the optimum level of inventory in a firm, Purpose and benefits of holding inventory.

Risk and cost of holding inventory, Inventory management - tools, techniques, Inventory management - tools, techniques, Inventory management - tools, techniques, Inventory management models, Inventory management models, Determining stock levels and safety stocks, Types of organizations holding inventory, Inventory strategies & techniques, Inventory strategies & techniques. Cases on Inventory Management

Unit III : Management of Accounts Receivables, Creation and size of accounts receivables, Motives of extending credit, Limitations of Accounts Receivables-Tax considerations, Determining maximum length of credit period, Credit terms, opportunity costs, receivables at cost or sale price, Goals and functions of A/Rs management, Short-term changes in credit policy, Long-term changes in credit policy

Financial statements analysis wrt. Accounts Receivables, Financial statements analysis wrt. A/Rs, Financial, Cash management-meaning and concept statements analysis wrt. A/Rs,

Unit IV: Cash management-meaning and concept, Cash v/s profit. Cash flow, cash stock and cash to current assets ratio, Cash flow presentation as per IFRS, NOCF & priority outflows, Management of liquidity-Shiftability theory, Liquidity newly defined, liquidity crises 7 firm level action, Measurement of liquidity, Window dressing, Certainty model by Baumol, Uncertainty model by Miller & Orr, Cash flow forecasting, Cash collection system.

Unit V: Management of Accounts Payables, Trade credits-terms of purchase, stretching accounts payables, Cost of Stretching A/Ps, The model of cost of stretching A/Ps, Overtrading and the need of a good information system.

Financing Working Capital Gap, Sources of working capital finance, Bank finance, Tondon and Chore committees on Bank finance, Other sources of working capital finance and deciding a suitable mix.

SUGGESTED READING MATERIALS:

1. Working Capital Management by Hrishikes Bhattacharya, PHI publication
2. Working Capital Management by R.P. Rustagi, Taxman Publication.
- 3 Financial Management by Prasanna Chandra, McGraw Publications.
4. Financial Management by I.M. Pandey, Vikas Publishing House.

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.405: International Financial Management

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course objectives: The objective of the course is to acquaint the students with Financial Management problems of multinational corporations and prepare them to tackle these problems.

Course Outline:

Unit I: (a) Financial Management in Global Perspective: Development in the International Monetary System, Gold Standard, Britain Woods System of Exchange Rate, Exchange Rate Regime, IMF and International Liquidity, System of Exchanging Currencies.

(b) Exchange Rate Determination: Determination of Exchange Rate in Spot and Forward Market, PPP Theory, IRP Theory, Monetary Theories of Exchange Rate determination, Overshooting Models.

Unit II: Foreign Exchange Market: Spot and Forward, Participants in Foreign Exchange Market- Arbitraging, Hedging and Speculation, Covered Interest Rate Arbitrage, Borrowing and Investing Markets.

Unit III: Risk Exposures and Their Management: Translation, Transaction and Operating Exposures: Their Measurement and Management.

Unit IV: Financial Swaps: Types and Uses, cash management by MNCs

Unit V: (a) International Financial Markets: International Equity Issues and Long Term Borrowings. GDRs, ADRs and Euro Bonds. International Development Banks, Foreign Currency Financing by Indian Financial Institutions.

(b) Short Term Financial Management: Management of Cash, Inventory and Accounts Receivable in Global Context, Inter–Company Fund Flow Mechanism, Short Term Financing. Financing of International Trade.

Suggested Reading:

1. Levi, Maurice: International Finance, Routledge,
2. Eiteman, David K: Arthur Stonehill and Michael H. Moffett, Multinational Business Finance, Pearson,
3. Shapiro AC: Multinational Financial Management: PHI
4. Apte : International Financial Management: PHI
5. Seth, A.K.: International Financial Management.
6. Vjj, madhu: International Financial Management, Excel Publications,

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

Marketing Group:

M.Com.404: Marketing of Services :

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course objective: To enable students to understand the conceptual aspects of services marketing.

Course Outline:

Unit I: Introduction to Services Marketing: Services as a marketing concept; factors for the growth of service sector; characteristics of services; dimensions of services; classification of services; managing customer expectations: level of expectations; zone of tolerance; segmentation, targeting and positioning of service.

Unit II: Services Marketing Mix: Product: service package, core and supplementary services; Product levels, service levels and delivery; price: pricing concepts and issues in pricing, pricing policy, pricing approaches, price and customer values; Promotion: Internal and external communication, issues in services promotion; place: Service distribution, channel options, service distribution strategy.

Unit III: Service Design: Essentials of a service system; components of services; designing the service package; front office interface; back office interface; operations system; service delivery system; customer satisfaction and conflicts; service recovery system; service quality; concept of service quality, measuring service quality; SERVQUAL system; concept of CRM: CRM objectives, technology impact on services, concept of e-CRM.

Unit IV: Globalization of services: Stages of globalization; international marketing services; emerging trends; principal driving forces in global marketing of services; key decisions in global marketing; services strategy and organizing for global marketing.

Unit V: Marketing of Financial and Hospitality Services: Application of the component of marketing of services in marketing of financial, tourism, travel and transport services.

Suggested Reading:

1. Zeithaml, Gremler, Bitner, and Ajay Pandit, Services Marketing, Tata McGraw- Hill, 4th ed., 2008.
2. Lovelock, Services Marketing: People, Technology and Strategy, Pearson Education, 5th ed., 2007.
3. Baron S and Harris K, Services Marketing: Text and Cases, Palgrave, 2003
4. Rajendra Nargundkar, Services Marketing: Text and Cases, Tata McGraw- Hill, 2nd ed., 2007.
5. Harsh V Verma, Services Marketing: Text and Cases, Pearson Education, 2008.
6. Rama Mohana Rao, Services Marketing, Pearson Education
7. Govind Apte, Services Marketing, Oxford Univ. Press

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

M.Com.405 : International Marketing

Assessment: Internal 20 marks , End semester exam of three hours 80 marks

Course objective: To enable the students to understand the concept, implications and procedures of International Marketing.

Course Outline:

Unit I: Introduction to International Marketing: Meaning, nature and scope of international marketing; international marketing distinguished from domestic marketing. Exporting, international trade and international business; international marketing management process- an overview.

Unit II: International marketing Environment: Geographic, demographic, economic, political, legal, socio cultural environments- their nature and effects on international marketing operations, tariff and non-tariff barriers; WTO, UNCTAD, generalized system of preferences (GSP), regional economic groupings- European Union (EU), NAFTA, ASEAN, etc., facilities and incentives schemes for exporters.

Unit III: International Product/ Market Selection and Entry Modes: Selection products, selection market, various modes of entry into international markets and their evaluation, export licensing/franchising contracting, joint venture, setting up wholly owned subsidiary.

Unit IV: International Product Planning and Pricing: Product in international context, standardization vs. adoption decision, other considerations; packaging, branding after sales services, ISO 9001:2000 quality system standard, factors influencing price, pricing methods, decisions and pricing process, price quotations and related considerations.

Unit V: International Distribution and Promotion: Types and functions of foreign distribution channels, selection of middlemen, distribution logistics- transportation and warehousing decisions, International advertising- standardization vs. adaptation, selection of media, selection of agency, measuring advertising effectiveness.

Suggested Reading:

1. Vern Terpestra, International Marketing, Southwest Publication,
2. Varshney RL and B. Bhattacharya, International Marketing- Indian Perspective, Sultan chand publication 2006.
3. Fayerweather, J, International Marketing Management, Sage Publication,
4. Cattero, R, Philip, International Marketing, Tata Mc Graw Hill
5. Jain Subhash, International Marketing Management, Southwest Publication,

Note: The pattern of setting the question paper is given at the end of the Syllabus, which is to be followed by the paper setter.

Pattern of Question Paper

Note: Instruction for pattern of paper setting is required to be followed by the examiner while setting the question paper.

There are three categories of subjects for the purpose of paper setting.

1.Numerical papers (End Semester Exam)

Instruction: Numerical papers in each semester of M.Com will follow the under mentioned pattern of question paper. Maximum marks will be 80.Maximum time allowed is 3 hours.

The question paper will consist of 80% numerical questions and 20% theoretical questions.

The question paper will include a total of ten questions, out of which five questions are to be attempted by the student. Each question will carry same marks i.e; 16 marks each. Questions shall be formed covering all five units of syllabus.

[16 Marks x 5 Questions = 80 Marks]

Note: Use of simple calculators are allowed.

List of Numerical papers

Following papers are termed as numerical papers

M.Com.101: Corporate Accounting

M.Com.201: Financial Management

M.Com.204: Management Accounting

M.Com. 302: Research Methods and Statistics

M.Com. 303: Income Tax Laws and Practice

2.Semi Numerical papers (End Semester Exam)

Instruction: Semi-Numerical papers in each semester of M.Com will follow the under mentioned pattern of question paper. Maximum marks will be 80.Maximum time allowed is 3 hours.

The question paper will consist of 2-3 numerical questions and the remaining questions will be theory.

The question paper will include a total of ten questions, out of which five questions are to be attempted by the student. Each question will carry same marks i.e; 16 marks each. Questions shall be formed covering all five units of syllabus.

[16 Marks x 5 Questions = 80 Marks]

Note: Use of simple calculators are allowed.

List of Semi Numerical papers

M.Com.305: Security Analysis and Portfolio Management

M.Com.404: Working Capital Management

3.Theoretical papers (End Semester Exam)

Note :Remaining papers other than numerical and semi numerical papers are termed as theoretical papers

Instruction: Theoretical papers in each semester of M.Com will follow the under mentioned pattern of question paper. Maximum marks will be 80.Maximum time allowed is 3 hours.

The question paper will include all theory questions.

The question paper will include a total of ten questions, out of which five questions are to be attempted by the student. Each question will carry same marks i.e; 16 marks each. Questions shall be formed covering all five units of syllabus.

[16 Marks x 5 Questions = 80 Marks]

Department of Political Science
Sri Dev Suman Uttarakhand Vishwavidhyalaya, Tehri

M.A. Courses

The Masters (M.A.) Programme in Political Science shall be a 2 years programme divided in 4 Semesters. Each Semester shall consist of 4 Courses carrying 100 marks each. Admission to the Programme shall be granted on the basis of the recommendation of the Admission Committee of the Department made on the basis of merit and a personal interview. The number of seats in the Programme shall be such as notified in the Prospectus issued every year. A student taking the Programme shall be required to pass in the sessional test as well as course papers for completing the Programme in the duration of the Programme extendable in accordance with the Ordinances of the University governing the Masters Programmes.

Courses in the M.A. Programme at a Glance

FIRST SEMESTER

Course no.	Name of the Course
POL.SC.C-01	Western Ancient and Mediaval Political Thought
POL.SC.C-02	Comparative Politics
POL.SC.C-03	Indian Political System
POL.SC.C-04	Local Self Government in India

SECOND SEMESTER

Course no.	Name of the Course
POL.SC.C-05	Western Modern Political Thought
POL.SC.C-06	Modern Political Systems
POL.SC.C-07	India's Foreign Policy
POL.SC.C-08	Research Methodology
POL.SC.C-09	Viva-Voce

THIRD SEMESTER

Course no.	Name of the Course
POL.SC.C-10	Indian Political Thought
POL.SC.C-11	International Relations
POL.SC.E-12-A	Public Administration
POL.SC.E-13-A	International Organizations
POL.SC.E-14-B	Regional Development in India
POL.SC.E-15-B	Indian Administration

FOURTH SEMESTER

Course no.	Name of the Course
POL.SC.C-16	Theories of International Politics
POL.SC.C-17	International Law
POL.SC.-E-18-A	Political Philosophy of Mahatma Gandhi
POL.SC.E-19-A	Human Rights
POL.SC.E-20-B	Modern Political Analysis
POL.SC.E-21-B	Politics of Environment and Development
POL.SC.C-22	Dissertation / Viva

M.A. COURSES: POLITICAL SCIENCE

NOTES:

1. Each course shall carry 100 marks. There shall be an End-Term Examination in each Course carrying 60 marks. In addition there shall be 1 Sessional Tests carrying 20 marks each during the Semester. The aggregate of marks obtained by a student in the Sessional Tests and the End-Term Examination in every Course shall be taken to be the Marks obtained by him/her in the Course concerned.
2. All courses in the First semester and the Second semester shall be compulsory with viva-voce in the second semester. In the Third semester courses X, XI shall be compulsory, while courses XII, XIII, XIV and XV shall be elective 'A' and 'B' will be available in each course. The candidates will be required to choose any one elective option in the case of each of the two courses. However, option 'A' in Course of XII might be opted with option 'A' of Course XIII; option 'B' of Course XIV and XV might be opted with option 'B' only. Similarly in the Fourth semester courses XVI and XVII shall be compulsory. But courses XVIII, XIX, XX and XXI shall be elective/optional courses and 2 options 'A' and 'B' will be available in each course. The candidates will be required to choose any one elective option in the case of each of the two courses. However, option 'A' in Course XVIII might be opted with option 'A' of Courses XIX; option 'B' of Course XX might be opted with option 'B' of Courses XXI only. The Course XXII will be dissertation/viva.

FIRST SEMESTER CORE/ COMPULSORY COURSES ALL COURSES SHALL CARRY 100 MARKS

COURSE –I: WESTERN ANCIENT AND MEDIEVAL POLITICAL THOUGHT

Unit-I:	Plato
Unit-II:	Aristotle
Unit-III:	St. Augustine- St. Thomas Aquinas.
Unit-IV:	Marsilio of Padua,

Readings Recommended:

Barker, E., Greek Political Theory
Dunning, A History of Political Theory
Ebenstien, Great Political Thinkers
Fadiya, B. L. , RajnitikChintanKaIthihas
Mehta, Jiwan , RajnitikChintanKaIthihas
Nelson, B.R., Western Political Thought
Russell, Bertrand, History of Political Philosophy
Sabine, G.H., History of Political Theory
Sharma, PrabhuDutt , RajnitikChintanKaIthihas
Strauss, L. and Joseph Cropsey, History of Political Philosophy
Bedalankar, Hari Dutt , AdhunikRajnitikChintan

Vedalankar, Hari Dutt , PashchatyaRajnitikChintan
Verma, K.N. , Rajdarshan Bhag-1 and 2
Wayper, C.L. , Political Thought

COURSE- II: COMPARATIVE POLITICS

Unit- I: Comparative Politics—meaning, nature, scope, evolution and approaches; political culture, political development.

Unit- II: The concept of political system; structural-functional approach.

Unit-III: Forms of Political Systems—federal versus unitary system; Separation of powers and checks and balances, judicial review.

Unit-IV: Representation--theories of representation, proportional representation; Public opinion and mass media.

Readings Recommended:

Almond, G.A. and J.S. Coleman, The Politics of the Developing Areas, Princeton NJ, Princeton University Press 1960.

Almond, G.A., and B. Powell, Comparative Politics: A Developmental Approach, Little Brown, 1966.

Apter David A. and E. Eckstein (ed.), Comparative Politics.

Apter, David A., Introduction to Political Analysis.

Apter, D.A., The Politics of Modernization, Chicago, University of Chicago, Press 1965.

Bara, Judith and Mark Pennington, Comparative Politics, Sage 2009

Gena, C.B., TulnatmakRajniti.

Jain, R.B., TulnatmakShashanAurRajniti.

Johari, J.C., TulnatmakRajniti.

Lipset, Seymour Martin, Political Man.

Maheshwari, S.R., TulnatmakRajniti.

Maheshwari, S.R., Comparative Government and Politics.

Ray, S.N., Modern Comparative Politics: Approaches, Methods and Issues, Prentice Hall

Sharan, Parmatama, TulnatmakShasanPranaliyan.

Sharma, PrabhuDutt, TulnatmakRajnitikSansthayain.

Stephen, A., Arguing Comparative Politics, Oxford, 2001

Tornquist, O., Politics and Development, Delhi, Sage, 1999.

Nema, J.P. & Negi M.S. – Comparative International Politics.

COURSE-III: INDIAN POLITICAL SYSTEM

Unit- I: Background of the constituent Assembly of India, Composition and working; Ideological Basis of Indian Constitution; Preamble, Fundamental Rights, Directive Principles of State Policy.

Unit-II: Nature of Indian Federalism; Centre State Relations.

Unit-III: The Parliament: Structure, Functioning; The Union Executive: President, Prime Minister; The Judicial System: Supreme Court, Judicial Review, Judicial Activism.

Unit-IV: Election Commission and Electoral Reforms.

Readings Recommended:

Aiyar S.P., and U. Mehta-Essays on Indian Federalism, Bombay, Allied Publishers, 1965

Awasthi, A.P., Bhartiya Sashan Aur Rajniti

Baxi, U., The Indian Supreme Court and Politics Delhi, Book Company, 1980

Basu, D.D., An Introduction to the Constitution of India, New Delhi Prentice Hall, 1994

Basu, D.D., Bharat Ka Samvidhan: Ek Parichaya

Bhambri, C.P., The Indian State : Fifty Years , New Delhi, 1999

Dubey, S.N., Indian Government and Politics.

Jain, S.N., Bhartiya Sashan Aur Rajniti.

Jaiswal, R.K., Bhartiya Sashan Aur Rajniti

Johari, J.C., Indian Government and Politics

Jones, Morris, The Government and Politics of India.

Kaushik, Sushila, Bhartiya Sashan Aur Rajniti.

Narain, Iqbal, Politics in India

Pandey, Jaya Narain, Indian Constitution

Pylee, M.V., Constitutional Government in India.

Singh, M.P. and Rekha Saxena, Indian Politics, Prentice Hall of India, 2008

Singh, R.L. and C.P. Sharma, Bhartiya Sashan Aur Rajniti.

Semwal, M.M. – Dynamics of Politics.

COURSE- IV: LOCAL SELF GOVERNMENT IN INDIA

Unit- I: Concept of Local Self Government: Meaning and Importance, Brief history during British period and after Independence.

Unit- II: Local Government: 73rd & 74th Amendments.

Unit- III: Urban Local Government: Municipalities, Municipal Corporation.

Unit- IV: Achievements of Panchayati Raj System.

Readings Recommended:

Asaithambi, S., A. Mohamed Abdullah, N. Kannan: The Changing Face of Rural India , Abhijeet Publication, 2008.

Baker, Benjamin, Urban Government.

Bambhri , C.P., Public Administration in Theory and Practice.

Bryce, James, Modern Democracies.

Chand, Gyan, Local Financial in India.
 Dharmaraj, S., Panchayati Raj System in India, Abhijeet Publication, 2008,
 Gerber, David N Local democracy in South Asia,
 Jain, L.C. (ed) , Decentralization and Local Government.
 Jain, Mukesh, Excellence in Government, Atlantic Publishers, 2001.
 Kapur, Devesh&PratapBhanuMehta , Public Institutions in India.
 Maheshwari , S.R., Local Government in India.
 Mathur, B.N. Decentralized Democracy and Panchayati Raj, Swastik Publication, 2009.
 Mishra, A.D., Decentralized Planning, Abhijeet, 2009.
 Palanithurai, G., Decentralization in India Critical issues from the field.
 Singh, Kartar, Rural development, Principles, policies and Management.
 Sinha Roy, BhaktapadaPanchayati Raj Rural and Development, Abhijeet Publication, 2008.
 Wadouy , Russell W., Issues in states and local government.

SECOND SEMESTER CORE/ COMPULSORY COURSES

COURSE- V: WESTERN MODERN POLITICAL THOUGHT

Unit-I: Machiavelli- Separation of Ethics from Politics, Theory of Statecraft; Jean Bodin-Concept of Sovereignty.

Unit-II: Hobbes, Locke, Rousseau- A Comparative Study; Jeremy Bentham- Utilitarianism, Political and Legal Reforms, Contribution of Jeremy Bentham; J.S.Mill- Liberty.

Unit-III: Hegel- Dialectics, Theory of State; Immanuel Kant-Theory of Moral Freedom and Peace.

Unit-IV: T.H. Green-Liberty, Rights and State; Karl Marx-Dialectical Materialism, Theory of Class Struggle, Theory of State.

Readings Recommended:

Dunning, A History of Political Theory.
 Ebenstein, Great Political Thinkers.
 Mehta, Jiwan , RajnitikchintankaItihas.
 Nelson, B.R., Western Political Thought.
 Russell, Bertrand, History of Political Philosophy.
 Sabine, G.H., History of Political Theory.
 Strauss, L., and Joseph Cropsey, History of Political Philosophy.
 Wayper, C .L . , Political Thought.

COURSE: VI- MODERN POLITICAL SYSTEMS (UK-USA-CHINA-FRANCE)

Unit-I: Typology of political systems: written– Unwritten, Flexible-Rigid, Presidential-Parliamentary; Rule of Law - Administrative law with reference to India, U.S., U.K. and China.

Unit-II: French Political System: The Presidency, Executive and Judiciary.

Unit-III: Party System in UK, USA, China and France.

Unit-IV: China: Constitutional Framework – Executive, Legislature, Role of Communist party.

Readings Recommended:

- Almond G.A. and B. Powell, Comparative Politics: A Developmental Approach
Apter David A. and E. Eckstein (edt.)-Comparative Politics
Apter, David, The Politics of Modernization, University of Chicago Press, 1965.
Ball, Alan, Modern Politics and Government, Macmillan, 1977
Birch, A.H., The British System of Government, Allen & Unwin, 1980
Gena, C.B., TulnatmakRajniti.
Irish, M. and J.W. Prothro , The Politics of American Democracy, Prentice Hall, 1968.
Johari, J.C., TulnatmakRajniti.
Maheshwari, S.R., Comparative Government and Politics
Madgwick, P.J., Introduction to British Politics, Hutchinson, 1971
Pye, Lucian, The Spirit of Chinese Politics, Cambridge, 1970
Ward, Robert and Roy Macrides (Ed.), : Modern Political Systems, 1972.
Weller, D.J., The Government and Politics of Communist China, Huthchison, 1970
Wesson, Robert, Communism and Communist Systems, Prentice Hall, 1978

COURSE- VII: INDIA'S FOREIGN POLICY

Unit- I: India's Foreign Policy: Principles, Objectives, Determinants.

Unit- II: India in World Politics: Relation with USA, Russia, China.

Unit- III: India and Its Neighbors- Pakistan, Nepal, Bangladesh, Sri Lanka.

Unit –IV: India's Nuclear Policy and Emerging Challenges to India's Foreign Policy.

Readings Recommended:

- Arora, V.K., PramukhDeshonkeVideshNitinyan.
Black and Thompson (Ed.), : Foreign Policies in a changing World.
Cohen,Stephen P., India Emerging Power, Oxford University, Press 2001
Dixit, J.N., 50 years of India's Foreign Policy, 2003
Dutt, V.P., India's Foreign Policy in a Changing World .Vikas Publishing House, New Delhi, 1999
Ganguly, Sumit (Ed.), India as an Emerging Power. Frank Cass, London, 2003,
Ganguly, Sumit, India Pakistan Tensions since 1947. OxfordUniv. press 2002
Gupta, K.R. and Vatsala Shukla, Foreign Policy of India , Atlantic, 2009
Jalan, Bimal, The Future of India. Penguin, New Delhi, 2005
Jetly, Nancy, India's Foreign Policy, Challenges and Prospects, Vikas Publishing House, New Delhi, 1999
Kapur, H., India's Foreign Policy: Shadow and substance.
Kaushik, P.D., BhartiyaVideshNiti.

Malhotra, Inder, India Trapped in Uncertainty, UBSPD, New Delhi 1991
 Mansingh, LalitEtd (Ed.), India's Foreign Policy Agenda for the 21st century.
 Menon, Raja, A Nuclear strategy for India, Sage, 2000
 Misra, K.P., Studies in Indian Foreign Policy.
 Misra, K.P., Bharat kivideshniti.
 Mohan, C. Raja, Crossing the Rubicon: The shaping of India's New Foreign Policy. Viking, 2003
 Nautiyal, Anpurna (Ed.), India and New World Order : South Asia Pub. New Delhi 1995
 Nautiyal, Anpurna (ed.) : Challenge to India's Foreign Policy in the New era.
 Pant, Puspesh& Jain, BhartiyaVideshNiti :NayainAyam
 Prasad, Bimla, The origin of India's Foreign Policy.
 Sharma, R.R., India and Emerging Asia.
 Sikri, Rajiv, Challenge and Strategy, Sage,2009
 Vanaik, Achin, India's Place in the World.' In Partha Chatterjee (Ed.) *Wages of Freedom, Fifty years of the Indian Nation state*, OxfordUniversity press, Delhi, 1998

COURSE- VIII: RESEARCH METHODOLOGY

Unit-I: Meaning, relevance of Research methodology ;Scientific Methods: Main Steps of Scientific Methods.

Unit-II: Selection and Formulation of Research Problem.

Unit-III: Hypothesis, Research Design, Techniques of Data collection-Observation, Interview, Questionnaire and Schedule Method.

Unit-IV: Sampling: Meaning, Types; Introduction to Statistics; Data Processing ; Thesis Writing.

Readings Recommended:

Blalock, H.N., An Introduction to Social Research, Englewood Cliffs NJ, Prentice Hall, 1970.
 Eulau, H., TheBehavioural Persuasion in Politics, New York, Random House, 1964.
 Evera, S.V., Guide to Methods for Students of Political Science , Ithaca ,NY ,Cornell University Press, 1997.
 Frohock, F.M., The Nature of Political Inquiry, Homewood Illinois, Dorsey Press, 1967.
 Galtung, John,Theory and Practice of Social Research.
 Gilbert, N. (ed.), Researching Social Life, London, Sage, 1993.
 Gosh, B . N . , Scientific Methods and Social Research.
 Good &Hatt , Methods in Social Research.
 Gopal, M.H., An Introduction to Research Procedures in Social Sciences.
 Kaplan, A., The Conduct of Inquiry, Methodology for Behavioural Science.
 Kaugman:Methodology of Social Sciences.
 Kerliger, F. N., Behavioural Research, New York, Holt, Rinehart and Winston, 1979.
 Lsaak, A. C., Scope and Methods of Political Science, Homewood Illinois, Dorsey Press 1985.
 Marsh, D. and G.Stoke (ed.), Theory and Methods in Political Science, Macmillan,1995.
 Merton, R. K. (ed.), Social Theory and Social Structure, New York, The Free Press, 1957.
 Rubin, H. J., Applied Social Research, Columbus, North Ulinos University Press, 1983.
 Verma, S . L . , RajnitiVigyan Mein SodhPravidhi.
 Young, P . V . , Scientific Social Survey and Research.

COURSE- IX: Viva-Voce

**THIRD SEMESTER
CORE/ COMPULSORY COURSES**

COURSE: X- INDIAN POLITICAL THOUGHT

Unit-I: Overview of Indian Political Thought: Genesis and Development, The Indian Renaissance.

Unit-II: Ram Mohan Roy, Gopal Krishna Gokhale, BalGangadharTilak.

Unit- III: Sir Syed Ahmed Khan, V.D. Savarkar, M.K.Gandhi.

Unit-IV: Political Ideas: Jawahar Lal Nehru, B.R. Ambedkar, and J. P. Naryan.

Readings Recommended:

- Appadorai, A., Documents on Political Thought in Modern India, 2 Vols.Bombay OUP 1970.
Awasthi, A. P., BhartiyaRajnitikVicharak.
Awasthi, Amrendra, AadhunikBhartiyaSamajikAurRajnitikChintan.
Azad, M.A., India Wins Freedom, Hyderabad, Orient Longman, 1988.
Bandhopadhyaya, J., Social and Political Thought of Gandhi, Bombay, Allied 1969.
Bose, N.K., Studies in Gandhism, Calcutta , Merit Publishers,1962.
Bourai, Himanshu, Gandhi and Indian Liberals: Abhijeet Publications, New Delhi, 2000
Chandra, B., Nationalism and Colonialism in Modern India, Delhi, Vikas,1979.
Damodaran, K., Indian Thought: A Critical Survey, Asia Pub. House 1967.
Fadia, B.L., BhartiyaRajnitikChintan.
Goshal, U.N., A History of Indian Political Ideas.
Gohkale, B.G., Indian Thought Through the Ages.
Grover, Political Thinkers of Modern India.
Jain, Pukhraj, BhartiyaRajnitikVicharak.
Mehta, V. R., Foundations of Indian Political Thought, Manohar, 1992.
Nanda, B.R., Gokhale, Gandhi and the Nehrus: Studies in Indian Nationalism, London, Allen and Unwin,1974.
Narayan, J. P. Prison Diary, Bombay, Popalar Prakashan, 1977.
Spellman, J.W., Political Theory of Ancient India.
Verma, V.P., Modern Indian Political Thought.
Verma, V.P., AadhunikBhartiyaRajnitikChintan.

COURSE- XI: INTERNATIONAL RELATIONS

Unit-I: International Relations: Definition, Development and Theories-Idealist and Realist.

Unit-II: Balance of Power: Meaning and Relevance, Collective Security and Disarmament

Unit-III: Regional Organizations: SAARC, ASEAN,

Unit-IV: Various discourses in Globalization, Issue of Terrorism

Readings Recommended:

- Baral, J.K., International Politics.
- Bindra, S.S. India and Her Neighbour.
- Brown, Chris and Kirsten Ainley, Understanding International Relations, Palgrave Macmillan Publishing, 2005.
- Chaturevedi, D.C., AntrashtiyaRajniti.
- Claude, I., Power and International Relations, New York, Random House,1962.
- Coulombus& Wolfe, Introduction to International Relations.
- Crowley, An Introduction to International Relations.
- Dwivedi, Dharendra, SAARC : Problems and Prospects, Adhyayan Publishing, 2008.
- Holsti, K.J., International Politics: A Framework of Analysis. Englewood Cliffs, Prentice Hall,1967.
- Johari, J.C., International Relations.
- Kaushik, P.D., AntrastiyaSambandh.
- Malhotra, Vinay Kumar, Introduction to International Relations.
- Morgenthau, H.J., Politics Among Nations.
- Nautiyal, Annpurna (ed.), India and the New World Order.
- Northedge, F.S., The International Political System. London,1976.
- Palmer, Norman D. and H.C. Perkins, International Relations.
- Pant, Pushpesh, AntrashtiyaSambandh.
- Rajan, M.S., Non alignment and the Non alignment Movement in the Present World Order, Delhi Konark,1994.
- Roach, Steven C., Critical Theory of International Relations, Routledge, 2009.
- Schlecher, International Relations.
- Sharma, M.L., AntarrastiyaSambandh (1945 to Present).
- Sheth, Praven, Theory and Praxis of Environmentalism.
- Sood, C.S. and Niranjana Bahuguna, AntarrashtriyaRajniti.
- Wright, Quincy, A Study of International Relations.

COURSE- XII-A: PUBLIC ADMINISTRATION

Unit-I: Public Administration: Meaning, Nature, Scope, Public and Private Administration, Neo Public Management & Good Governance.

Unit-II: Organization: meaning, Forms; Hierarchy, Span of Control, Unity of Command, structure of Organization.

Unit-III: Personnel Administration: Recruitment, Training.

Unit-IV: Financial Administration: Budget, Accounting and Auditing.

Readings Recommended:

- Anderson, J.E., Public Policy Making, Boston, Houghton Mifflin, 1990
- Avasthi, A. and S. N. Maheshwari, Public Administration, Agra ,Laxmi N. Agarwal, 1996.
- Awasthi, Amreswarand A.P. Awasthi- Indian Administration.
- Bhagwan, Vishnoo and VidhyaBhushan, Public Administration.
- Chaturvedi, T. N., (Ed.), Strategies for Administrative Culture of India, New Delhi, Mittal, 1997.
- Datta, Prabhakar, Public Administration and the State.

Dimock and Dimock:Public Administration
Dubashi, P. R., Recent Trends in public Administration, Delhi, Kaveri Books, 1995.
Fadiya, B. L. , LokPrashasan
Maheshwari, S. R., Administrative Theories, New Delhi, Allied, 1994.
Pffner, Public Administration
Sharma, Harish Chandra, LokprashasankeAdhar
Sharma, PrabhuDutt Public Administration.
Sharma, P. D. , LokPrashasan
Sharma, PrabhuDutt, LokprashasanSidhantAurBayawahar
Singh, Birkeshwar Prasad , LokPrashasan
Weber, M., The Theory of Organization: Readings in Public Administration, New York, Harper and Row , 1983.
White, L. D., Introduction to the Study of Public Administration, New York, Macmillan, 1955.

COURSE- XIII-A: INTERNATIONAL ORGANISATION

Unit-I: Meaning, Nature and Classification of International Organizations.

Unit-II: Historical Development- League of Nations: Main Organs, Causes of Failure.

Unit-III:The United Nations- Origin, Objectives, Principal Organs

Unit-IV: Need for the revision of UN Charter, Relevance of U.N. in Present Era

Readings Recommended:

Bachr, P. and L.Gordenker, The United Nations in the 1990s, Oup, 1992.
Basu, Rumki , The United Nations.
Bennet, A.L., International Organization: Principles and Issues.
Bilgrami, S.J.R., International Organization, New Delhi, Vikas,1977.
Gairola, R. N. , AntarastriyaSangatan.
Gaur, M., United Nations for a Better World, Alfa Publications, 2009.
Kamath, P.M., Reforming and Restructuring the United Nations ,Anamika Publishers 2007.
Kaushik, P. D. , AntarrashtriyaSangathan.
Kumar, S. (ed.), The United Nations at 50: An Indian View, Delhi, UBSPD, 1995.
Leonard, L. L. , International Organisation.
Mahajan, V. D. , International Organisation.
Mehrish, B.N. and C.Archer, International Organizations.
Mehrish, B.N., International Organizations: Structures and Processes.
Potter, P. B. , International Organisation.
Rajan, M. S. (ed.)-United Nation at Fifty and Beyond, Lancer Books, New Delhi, 1993.
Roy, M.P., AntarrshtriyaSangathan.
Saxena, K.P., Reforming the UN : The Challenge of Relevance.
Singh, Nagendra , International Organisation.
Srivastava, L. N. , International Organization.
The UN Year Book- Latest Edition.

COURSE- XIV-B: REGIONAL DEVELOPMENT IN INDIA

Unit-I: Regional Development-Meaning, Importance.

Unit-II: Regional Imbalances in India-Causes, Effects and Corrective measures.

Unit-III: Socio-Economic Problems and Issues of Development in India-- Poverty, Social Backwardness and Disparities, Displacement, Resettlement and Environmental degradation.

Unit-IV: Developmental Policies, Priorities and strategies in India and Target Groups; Democratic Decentralization and development in India.

Readings Recommended:

Aggarwal, S.K., Regional Development and Planning in India, New Delhi: Concept, 2009.

Bardhan, Pranab, The Political Economy of Development in India.

Balakrishna, Ramachandra, Regional Planning in India, Bangalore: Bangalore Printing and Publishing Co., 1948.

Bhattacharya, S.N., Development of Industrially Backward Areas, The Indian Style, New Delhi: Metropolitan, 1981.

Bhattacharya, S.N., Role of Indian Rural Institutions in Economic Growth: A Critical Study, New Delhi: Metropolitan, 1985.

Breze, Jean and Amartya K. Sen, Indian Development: Selected Indian Perspectives, Oxford University Press, 1997.

Breze, Jean and Amartya Sen, India, Economic Development and Social Opportunity, Clarendon Press, 1998.

Chakravarty, S., Development Planning: The Indian Experience.

Friedman, J. and W. Alonso (Ed.), Regional Development and Planning: A reader.

Hilhorst, J.G.M., Regional Development Theory.

Jalan, Bimal (ed.), The Indian Economy: Problems and Prospects.

Lewis, John P., India's Political Economy: Governance and Reform, Oxford University Press, 1995.

Mishra, Jagannath and Chakradhar Sinha, Planning and Regional Development in India, New Delhi: Gaurav, 1985.

Misra, R.P. K.V. Sundaram and V.L.S. Prakasa Rao: Regional Development Planning in India: A New Strategy, New Delhi: Vikas Publishing House, 1974.

Misra, R.P., Planning for Backward Areas: Some Contributions, Mysore, Institute of Development Studies University of Mysore, 1974.

NCAER, Economic Policy and Reforms in India.

Nair, K.R.G., Regional Experience in a Developing Economy, Wiley, 1983.

Ray Chaudhuri, Jayasri, An Introduction to Development and Regional Planning: With Special Reference to India, New Delhi: Orient Blackswan, 2001.

Sen, Amartya, Development as Freedom.

Sivaramakrishnan, K. and Arun Agrawal, Regional Modernities: The Cultural Politics of Development in India, Stanford: Stanford University Press, 2003.

Shukla, Amitabh, Regional Planning and Sustainable Development, New Delhi: Kanishka, 2000.

Singh, M.B. and Dubey, K.K., Regional Development Planning (Hindi).

Todaro, M.P., Development Planning, Models & Methods.

UNDP, Human Development Report, 2001.

United Nations, Selected Experiences in Regional Development, 1970.

COURSE-XV-B: INDIAN ADMINISTRATION

Unit-I: Features of Indian Administration, Historical evolution of Indian Administration during Colonial Period.

Unit-II: Ministry of Home, Cabinet Secretariat, PMO.

Unit-III: UPSC and Civil Services in India, Recruitment, Training and Promotion.

Unit-IV: Financial Administration in India- Composition and Functions of Finance Ministry, Budget, Audit, Comptroller and Auditor General of India.

Readings Recommended:

Arora, R.K., Administrative Change in India
Bansal, P.L., Administrative Development in India
Bhushan, Vidya and Vishnu Bhagwan, Indian Administration
Chandra, Asok, Indian Administration
Chatterjee, S.K., Indian Administration
Chaturvedi T.N. (Ed.), Strategies for Administrative Culture in India
Jain, R.B., Contemporary issues in Indian Administration
Jain, R.B., Contemporary Issues in Indian Administration
Maheswari, S.R., Indian Administration
Sharma, P.D., Bhartiya Prasasan

FOURTH SEMESTER
CORE/ COMPULSORY COURSES

COURSE- XVI: THEORIES OF INTERNATIONAL POLITICS

Unit-I: International Politics-Definition, Nature, Scope, Development.

Unit-II: Approaches and Methods of International Politics.

Unit- III: National Power, National interest & ideology.

Unit- IV: Foreign Policy & diplomacy, Role of non-state actors in international relations

Readings Recommended :

Baral, J.K., International Politics.
Chaturvedi, D.C., Antarrashtriya Rajniti.
Claude, I., Power and International Relations, New York, Random House, 1962.
Deutsch, Karl W., The Analysis of International Relations.
Fadiya, B.L.: Antarrashtriya Rajniti.
Goldstein, J.S. -International Relations
Holsti, K.J., International Politics: A Framework of Analysis. Englewood Cliffs, Prentice Hall, 1967,
Johari, J.C., International Relations.
Kaushik, P.D.: Antarrashtriya Sambandh.

Kumar, Mahendra, Theoretical Aspects of International Politics.
Malhotra, Vinay Kumar, Introduction to International Relations.
Morgenthau, H.J., Politics Among Nations.
Northedge, F.S., The International Political System. London, 1976
Palmer, Norman D. and H.C. Perkins, International Relations.
Pant, Pushpesh, Antarrashtriya Sambandh.
Rajan, M.S.: Non-alignment and the Non alignment Movement in the Present World Order.
Ray, James Lee, Global Politics
Sharma, M.L., Antarrashtriya Sambandh (1945 to present).
Sood, C.S. and Niranjana Bahuguna, Antarrashtriya Rajniti, New Delhi: Radha Publications, 1997.
Wright, Quincy, A study of International Relations.
Shah, B.L. & Bhakuni, R.S. – Contemporary Issue in International Politics.

COURSE- XVII: INTERNATIONAL LAW

Unit- I: International Law: Meaning, Nature, Relation with Municipal Law; Sources of International Law.

Unit-II: Subjects of International Law, Diplomatic Envoys, Extradition and Asylum.

Unit-III: Settlement of Disputes: Amicable and Compulsive Means.

Unit-IV: War: Consequences and Termination, War Crimes, Neutrality, Blockade and Contraband.

Unit-V: Leading Cases: The Paquet Havana and the Lola, Corfu Channel, The Savarkar, The S.S. Lotus, The Zamora, The Chung Chichueng VS The King, The Alabama Claims, Mighell Vs the Sultan of Johore, The Altmark.

Readings Recommended:

Fadiya, B.L., Antarastriya Vidhi.
Fenwick, International Law.
Friedmann, W., The Changing Structure of International Law, New York, 1964.
Gairola, R.N., Antarastriya Vidhi.
Hide, International Law.
Kapoor, S.L., Antarastriya Vidhi Aur Manav Adhikar.
Lawrence, Principles of International Law.
Oppenheim, International Law Vol. 1&2.
Starke, An Introduction to International Law.
Stowell, International Law.
Verma, S.K., An Introduction to Public International Law.

COURSE- XVIII-A: POLITICAL PHILOSOPHY OF MAHATMA GANDHI

Unit-I: Influence on Gandhi, Gandhiji's Conception The end and means.

Unit-II: Truth, Non-violence and Satyagrah.

Unit- III: Social ideas, Political ideas, Economic ideas.

Unit- IV: Contribution and relevance of Gandhi.

Readings Recommended:

- Adhikari, G., Gandhism- A Review. Bombay, 1940.
Alexander, Horace, and Others, Social and Political Ideas of Mahatma Gandhi..New Delhi, 1949.
BARR, f. Mary, Conversations and Correspondence with Mahatma Gandhi. Bombay, 1949.
Bose, N. K., Studies in Gandhism. Calcutta, 1947.
Catlin, G., In the Path of Mahatma Gandhi. London, 1948.
Datta, d.m., The Philosophy of Mahatma Gandhi. Wisconsin, 1953.
Dhawan Gopinath, The Political Philosophy of Mahatma Gandhi, The Gandhi Peace Foundation, New Delhi, 1990
Hocking, W.E., Man and the State. Yale University PRESS, 1926- The Lasting Elements of Individualism. Yale University Press, 1937.
Kripalani, J. B., The Gandhian Way. Bombay, 1938.
Kumari, Sanjay, Gandhian Philosophy in the 21st Century –, Jagat Parkashan, 2008
Merriam, C.E., Political Power. New York, 1934.
Polak, H.S.L., Mahatma Gandhi. Madras, 1930
Pyarelal, The Epic Fast. Ahmedabad, 1932.
Radhakrishnan, S. (ed.), Mahatma Gandhi – Essays and Reflections on His Life and Work. LONDON, 1939.
Rajendraprasad, Satyagraha in Champaran. Madras, 1928. (Also Ahmedabad, 1949).
Sharma, B.S., Gandhi as a Political Thinker. Allahabad, 1956.
Shelvankar, K.S., Ends Are Means. London, 1938.
Tendulkar, D.G., Mahatma – Life of Mohandas Karamchand Gandhi, 6 Vols. Bombay, 1951-53.

COURSE- XIX-A: HUMAN RIGHTS

Unit-I: Meaning, Nature, Significance and Development of Human Rights.

Unit-II: The U.N. Charter and Universal Declaration of Human Rights.

Unit-III: National Human Rights Commission of India: Organisation, Structure, Functions and Powers.

Unit-IV: Non State Actors: Amnesty International, Asia Watch and Green Peace.

Readings Recommended:

- Agarwal, Hari Om, Implementation of Human Rights.
Alston, Philip (Ed.), The United Nations and Human Rights.
Arora, Lalit Kumar, Major Human Rights Instruments, Isha Books Publication, 2006.
Batra, T.S., Human Rights: A Critique.
Brownlie, Ian (Ed.), Basic Documents on Human Rights.
Donnelly, Jack, The Concept of Human Rights, London, 1973.
Diwan, P., Human Rights and Law.
Hingorani, Human Rights in India.
Iyer, Krishna, Human Rights and Law.
Kapoor, S.K., Manwadhikar.

Kazmami, Fareed, Human Rights Myth and Reality.
Raju, M.V., Human Rights : Today and Tomorrow.
Robertson, A.H. Human Rights in the World.
Sastry, T.S.N., India and Human Rights, Concept, 2005.
Simmons, Beth A., Mobilizing for Human Rights, Cambridge, 2009.
Singh, B.P., Human Rights in India.
Solby, David, Human Rights.
Soni, S.K., 2007 Human Rights : Concept Issues, Emerging Problems.
Vijapur, A.P., Essays on Human Rights.
Vijapur, A.P., Implementing Human Rights in the Third World, Manak, 2008.

COURSE- XX-B: MODERN POLITICAL ANALYSIS

Unit-I: Nature and approaches of Political Science, The Growth of Political Science as a Discipline.

Unit-II: The Behavioural and post Behavioral Revolution in Political Science.

Unit-III: End of Ideology: Rise & decline of Pol. Theory.

Unit-IV: Existentialism, Feminism, Environmentalism & Green Politics.

Readings Recommended:

Apter, David, Introduction to Political Analysis.
Dahl, Robert A., Modern Political Analysis Sixth Edition
Gandhi, M.G., Modern Political Analysis.
Gena, C.B. Adhunik Rajnitic Sidhant.
Johri, J.C., Modern Political Analysis.
Lipset, Seymour Martin, Political Man.
Sharma, P.D.: Abinav Rajnitic Chinton.
Verma, S.P., Modern Political Theory.

COURSE-XXI-B: POLITICS OF ENVIRONMENT AND DEVELOPMENT

Unit I - Environment and Development: Meaning, Definition, Problems and changing concepts – development and sustainable development.

Unit II - Environment and Conflict of Resources: Forests, Biodiversity, protected areas.

Unit III - Poverty, Social Backwardness and disparities, Social Movements.

Unit IV -: Climate Change and impact on Development, Environment Protection.

Readings Recommended:

Dryzek, John S., The Politics of Earth: Environmental Discourses.
Guha, R., Environmentalism.
Gupta, R.D., Environmental Pollution: Hazards and Control.

Kandari, O.P. and O.P. Gusain: Garhwal Himalaya Nature, Culture and Society, Transmedia Publication, 2001.

Krishna, Sumi, Women's Livelihood Rights –Sage Publication, 2007.

Manihi, S. K., Environment and Development.

McNeill, J. R., [John Robert McNeill](#), and Paul Kennedy, Something New Under the Sun: An Environmental History of the Twentieth Century World, 2001.

Menon, Ajit, Praveen Singh, Esha Shah and others, Community Based Natural Resource Management, Sage Publication, 2007.

Nag, P., Environmental Pollution and Development.

Naidu, G. S., Environmental Economics.

Pandy, Ashutosh, Bhoopal Singh and G.K Singh, Urbanization and Globalization in India , Radha Publication, 2008.

Redclift, Michael, Political Economy of Environment: Red and Green Alternatives.

Rao, M.G. Ramakant, Good Governance Modern Global and Regional Perspective, Kanishka Publishers, 2008.

Rathod, P.B., Women and Development, ABD Publications, 2009.

Rosenbaum, Walter A., Environmental Politics and Policy, East west press, 1991.

Shiva, Vandana, Ecology and the Politics of Survival, Sage, 1991.

Singh, Kartar and Anil Shishodia, Environmental Economics, Sage, 2007.

Singh, R. B. and S. Misra, Environmental law in India: issues and Responses.

Sinha, R.N.P., Environment and Human Response.

COURSE-XXII : Dissertation/Viva

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of Himalayan Wetlands Ecosystem in
Uttarakhand (CSDHWE)
28-29 May, 2021



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Total		60,000.00

(₹Sixty Thousand only)

Account Details:-

Name of Account Holder	Bank Name & Address	Account Number	IFSC Code
Convener A/C Principal, Govt. PG College, New Tehri	Axix Bank, Hotel Shiv Palace, Tehri	918010029617169	UTIB0003437
M: 9411531788	GST-05MRTG0208781D5		

Above grant is subject to the following conditions:-

1. The amount will be used by the Institution only for the purpose it has been sanctioned. The money would not be diverted for any other purpose under any circumstance; even for temporary periods.
2. The institute would highlight the Financial Support and role of UCOST Dehradun by giving due acknowledgment at all the forums, publications, pamphlets, banners and proceedings.
3. Detailed Program Report (Executive Summary, Background, Minute to Minute Program Details, Colored Photographs, Press Clippings/Media Coverage, List of Participants & Experts and Recommendations/Outcomes of the program) with Publication of Proceedings in both Hard & Soft Copy and Audited UC & SOE in council format would be sent through Head of the Institution in 3 copies of each within 45 Days of completion of the program.
4. Assets acquired wholly or partially through grant shall not be disposed-off without obtaining prior approval of UCOST.
5. The accounts will be audited according to the procedure of the host institution. Audited Utilization Certificate (UC) and Statement of Expenditure (SoE) duly signed by competent authority would be submitted to UCOST after completion of event/financial Year. In case of Private Institutions /Universities/NGOs, Audited documents must be mandatorily counter signed by Chartered Accountant (CA). Head of the organization will be responsible for submitting the Audited Statement of Expenditure and Utilization Certificate in the prescribed format of Council (Available on our website <http://ucost.in>).

Cont....



STATEMENT OF EXPENDITURE

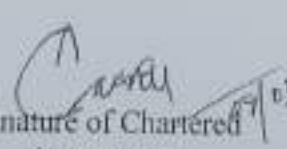
Financial Year 2019-2020

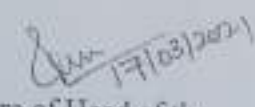
1. Sanction Letter No. : No. Dated: 18.08.2019
2. Total sanctioned amount (In Rs.) : 1,00,000.00
3. Received Amount (In Rs.) : 90,000.00
4. Date/Duration of Programme : Nov. 14-16, 2019
5. Interest, if any :-
6. Statement of Expenditure :

S.No.	Heads Sanctioned	Amount Allocated	Amount Utilized	Balance, if any
1	Stationery, Pre-Conference printing, Folders and publication of proceeding	1,00,000.00	1,00,000.00	Nil
Total :		1,00,000.00	1,00,000.00	Nil


Signature of
Organizing Secretary

Dr. V.P. Samwal
Assistant Professor
Department of Zoology
Post Box No. 100, Jammu, Jammu & Kashmir


Signature of Chartered
Accountant
FOR POKHRIYAL & ASSOCIATES
Chartered Accountants
(CA. Ashok Kumar Pokhriyal)
M. No. :098746
UDIN:21098746AAAAFC5838


Signature of Head of the
Institution
प्रधान,
राजकीय स्वातंत्र्य महाविद्यालय
नई दिल्ली (दिल्ली मद्रास) उत्तराखण्ड



Uttarakhand State Council for Science & Technology (UCOST)

Department of Science & Technology (Govt. of Uttarakhand)

Vigyan Dham, Jhajra, via Premnagar, Dehradun-248007 [UK]
(Tel: +91-9412051556 / 57, Email: scp.ucost@gmail.com Website: www.ucost.in)

No. UCS&T/SCP-26/19-20/56933/

Dated: 09.10.2019

ORDER

Sanction of ₹ 50,000.00 (₹ Fifty Thousand only) and release of ₹ 40,000.00 (₹ Forty Thousand only) in favor of "Principal, Govt. P.G College, New Tehri" through online transfer into the following account towards the financial support for organizing International Conference on contemporary issues of Climate change, Conservation of Biodiversity and Natural Resources in Himalayan Environments during 14th -16th Nov, 2019 at Govt. P.G. College, New Tehri, Head wise allocations approved are given below:-

S. No.	Account Head	Amount (in ₹)
1.	TA/DA	10,000.00
2.	Local Hospitality	20,000.00
3.	Stationary & Pre- Conference Printing, Folders and Publication of Proceedings	15,000.00
4.	Miscellaneous	5,000.00
Total		50,000.00

(₹ Fifty Thousand only)

Account Details:-

Name of Account Holder	Bank Name & Address	Account Number	IFSC Code
Convener A/C, Principal, Govt PG College, Tehri	Axis Bank, Hotel Shiv Palace, Tehri	918010029617169	UTIB0003437

Above grant is subject to the following conditions:-

1. The amount will be used by the institution only for the purpose it has been sanctioned.
2. The accounts will be audited according to the procedures of the institutions concerned and the audited accounts duly countersigned by the competent authority will be transmitted to UCOST as early as possible.
3. **Program Report, Colored Photographs & press clippings (Hard & Soft Copy of all) and UC & SOE in council format with recommendations/Outcomes will be sent through Head of the Institution in 2 copies of each.**
4. Advance intimation should be sent to the Council so that representation from Council could be decided and necessary mention of the Uttarakhand State Council for Science & Technology should be made in all circulars/banners, invitations and proceedings.
5. Head of the organization will be responsible for submitting the Audited Statement of Expenditure and **Utilization Certificate in the prescribed format of Council (Available on our website <http://ucost.in>).**
6. The account of the workshop shall be open to inspection by sanctioning authority/audit whenever the institute is called upon to do so.
7. It will be the responsibility of the concerned institution that relevant rules and regulations/instructions are strictly followed and proper attention of thrift is kept while using the fund. Savings if any out of the sanctioned funds will be returned to this office at the earliest possible.

This order is being issued as per approval accorded by Director General, UCOST.

(Dr. B. P. Purohit)
Joint Director

Copy for information and necessary action to:

1. The Principal, Govt. P.G College, New Tehri, Uttarakhand
2. Dr V.P. Semwal, Organizing Secretary & Assistant Professor, Dept. of Zoology, Govt. P.G College, New Tehri, Uttarakhand.
3. Accounts Section for release of above amount, debit able under SCP Head.
4. Office Copy.

(Dr. Kailash N. Bhardwaj)
Scientific Officer (I/C)



Hemant Kulkarni
Senior Principal Scientist

Ref No. SYM/9911/18-HRD
Dec 04, 2016

Dr V P Semwal
Assistant Professor
Dept. of Zoology
P G College New Tehri
Tehri Garhwal-249 001 Uttarakhand 9411505565

SUBJECT: National Conference on Contemporary Issues of Climate Change & Conservation of Biodiversity & Natural Resources in Himalayan Environments during Dec 20-22,2018 at P G College New Tehri, Tehri Garhwal

Dear Dr Semwal

With reference to your application on the above subject, we are happy to inform you that Director General, CSIR has been pleased to sanction a grant of **Rs.50000/- (Rupees Fifty Thousand Only)** subject to the following conditions:

1. The grant received from CSIR should be duly acknowledged by email along with a certificate that the grant would be specifically utilized for the purpose for which it has been sanctioned.
2. The grant may be reimbursed **within three months** from the date of Conference / Seminar/ Workshop etc is over by filling-in the Grant-in-Aid Bill Form in duplicate duly signed and rubber-stamped by the concerned officials, indicating clearly the designation of the official along with **Audited Statement of expenditure** for release of grant (**Current Proforma for Grant-in-aid bill and Audited Statement of expenditure are available on our website URL <http://csirhrdg.res.in/sy.htm>**), if any Utilization Certificates of Previous Grant for symposia (as per Col.No. 16 of the Application Proforma) not submitted till date, please attach copies of Utilization Certificates also. All the pages of above documents should be self attested by the organizer.
3. Invitation cards should be sent to the Director General, CSIR and Head, HRDG. CSIR may nominate three scientists for the above event and registration fee should not be charged from them. In case of nomination, the Head, HRDG or the undersigned would issue a letter with a copy to the nominee(s).
4. Softcopy (preferably in CD/ DVD in PDF format) of the full paper proceedings of above event should be sent to the undersigned.
5. An overall activity report by the Convener / Organizing Secretary should be made available by email to us with regard to outcome of the gathering, the recommendations and plan of action for future. The names, addresses & email IDs of the participants / delegates should also be sent immediately after the event by email.

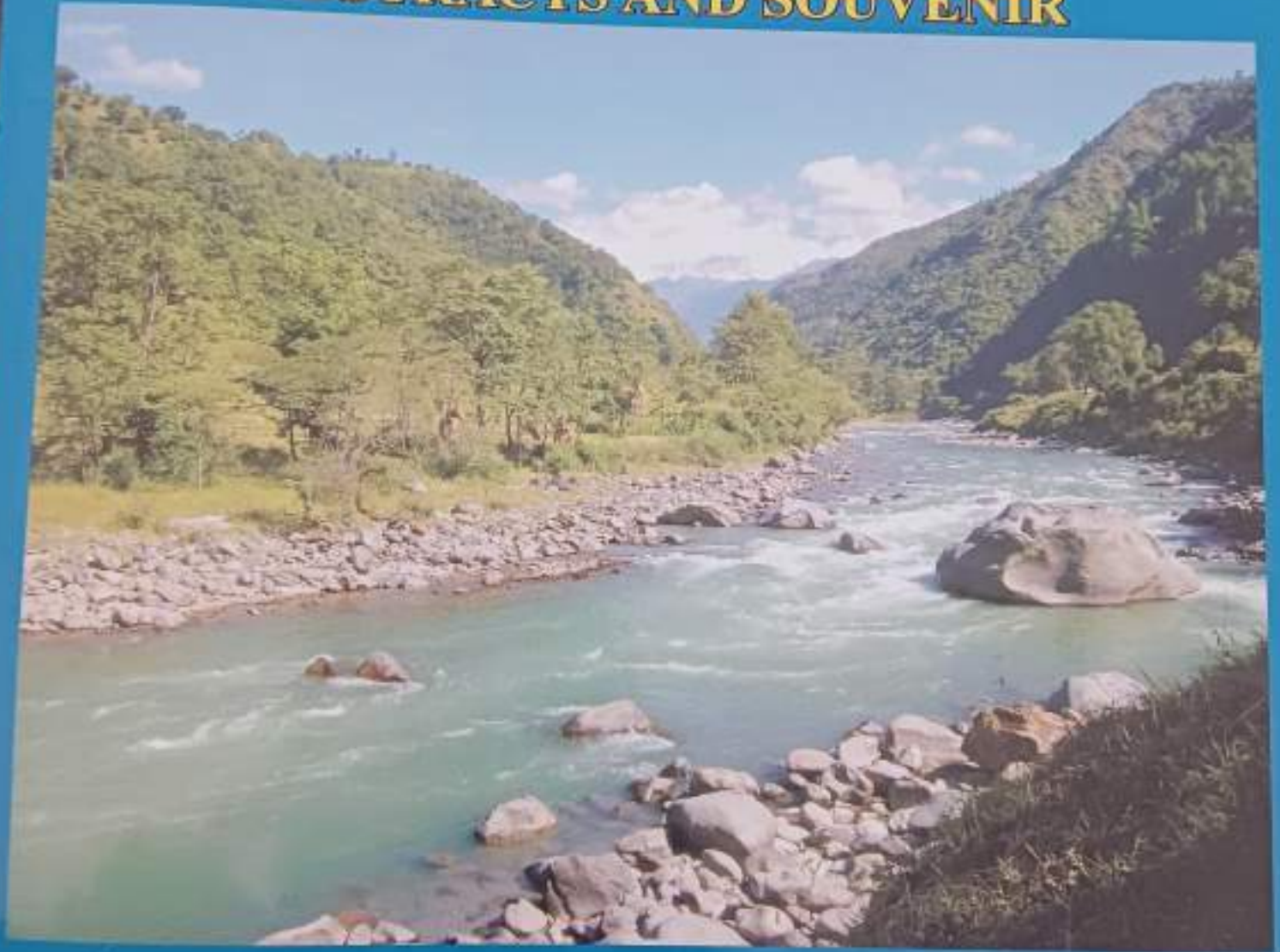
Yours sincerely,


(Hemant Kulkarni)



**International Conference
On
Contemporary Issues of Climate Change, Conservation of
Biodiversity and Natural Resources in Himalayan Environments
14-16 November 2019**

ABSTRACTS AND SOUVENIR



ORGANIZED BY

Department of Zoology

**Government P. G. College New Tehri, Tehri Garhwal, Uttarakhand-249001, India
(NAAC Accredited Grade 'B')**

<https://www.gpgcnewtehri.com>

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2022.11.18 11:44

Respected Sir,

This has reference to your letter dated 18.08.2019 addressed to Director (Expl.), ONGC, New Delhi regarding sponsorship International Conference on Contemporary Issues of Climate Change and Conservation of Biodiversity and Natural Resources in Himalayan Environments scheduled to be held during 14th to 16th November, 2019.

In this connection, this is to inform you that financial sponsorship of Rs. 1,00,000/- is under process. Since all payments in ONGC are being made through electronic payment mechanism, you are requested to forward the following documents for creation of Vendor :

1. EPM form (copy attached) duly verified by your banker
2. A cancelled cheque
3. GST details
- ✓ 4. A copy of PAN Card
5. PAN card photocopy.

It is also requested kindly to intimate the deliverables to ONGC through this sponsorship. Soft copies of ONGC Logo and Advertisement are being forwarded to provide adequate coverage during the event.

Regards.

L.K.Khaneja
DGM (HR)-PS to Director (E)
ONGC, Green Hills,
Tel Bhavan, DEHRADUN-248003
9410391954

भारत का ऊर्जा सारथी
स्वच्छ भारत एक कदम स्वच्छता की ओर

अस्वीकृति :

संचेतना

विवेक युक्त ज्ञान, ज्ञानात् प्रथित विवेक

मानविकी एवं समाज विज्ञान परिषद

HUMANITIES AND SOCIAL SCIENCE COUNCIL

राजकीय स्नातकोत्तर महाविद्यालय नई टिहरी, टिहरी गढ़वाल

मासिक ई-न्यूजलेटर

अंक-1, दिसम्बर, 2021



मानविकी एवं समाज विज्ञान परिषद के संचालक मण्डल के सदस्य

एक परिचय

कला संकाय के समस्त प्राध्यापकों द्वारा दिनांक 08 अक्टूबर 2021 को मानविकी एवं समाज विज्ञान परिषद का गठन किया गया। सदस्यों के चयन के पश्चात इस पर निर्णय लिया गया कि महाविद्यालय के सात 07 (प्राध्यापक) एवं 02 अध्ययनरत छात्रों को कार्यकारिणी समिति में सम्मिलित किया जाएगा। नैक के सफल सम्पादन के लिए भी इस पर विचार विमर्श किया गया।

दिनांक 09 अक्टूबर 2021

08 अक्टूबर को कार्यकारिणी समिति की बैठक में 07 सदस्यों को सर्वसम्मति से मनोनित किया गया एवं इसी बैठक में डॉ० मणिकान्त शाह द्वारा पहला व्याख्यान दिनांक 17 नवम्बर 20 को दिए जाने के लिए सभी सदस्यों की सहमति बनी।

दिनांक 26 अक्टूबर 2021

इस दिन परिषद के कानून एवं नियमों पर चर्चा के पश्चात उन्हें लागू करने पर सभी सदस्यों की सहमति बनी। एक दिवसीय कार्यशाला को भी आयोजित करने पर विचार किया गया। जो कि आगामी वर्ष में प्रस्तावित है।

दिनांक 27 अक्टूबर 2021

परिषद के उद्देश्यों पर चर्चा के पश्चात् यह निर्णय लिया गया कि परिषद द्वारा आयोजित व्याख्यान, संगोष्ठी एवं

कार्यशाला को ऑफलाइन/ऑनलाईन के माध्यम से करवाने पर सहमति बनी।

दिनांक 28 अक्टूबर 2021

परिषद के सफलतापूर्वक संचालन हेतु सदस्यों को नामित किया गया जिसमें अध्यक्ष, कोषाध्यक्ष ई-न्यूज लेटर के सम्पादक आदि अन्य सदस्यों को कार्यभार दिया गया।

दिनांक 12 नवम्बर 2021

परिषद के प्रथम व्याख्यान के लिए डॉ० मणिकान्त शाह द्वारा थॉमस कूह की पुस्तक "वैज्ञानिक क्रान्ति की शुरुआत के सन्दर्भ की पृष्ठभूमि" शीर्षक पर दिनांक 17 नवम्बर 21 को व्याख्यान देने की औपचारिक घोषणा की गयी।

दिनांक 17 नवम्बर 2021

परिषद की सभी गतिविधियों को पूर्ण करने के पश्चात् इसका उद्घोषण हुआ। समय 12:15 से डॉ० मणिकान्त शाह ने अपना व्याख्यान प्रारम्भ किया जो 02:15 पर समाप्त हुआ। इस व्याख्यान में 76 शिक्षकों एवं छात्र-छात्राओं की उपस्थिति रही। डॉ० शाह ने अपने व्याख्यान में लेखक व पुस्तक के स्थान पर उनकी पुस्तक की पृष्ठभूमि पर ध्यान केन्द्रित किया। उन्होंने बताया कि विज्ञान अनुशासन नहीं है बल्कि यह अध्ययन की एक विधि है, जिसके माध्यम से हम किसी भी विषय वस्तु का अध्ययन कर सकते हैं। इसी के

साथ उन्होंने कहा कि शोध में भी शोधकर्ता इसी पद्धति का अनुसरण करते हैं। कुह के अनुसार विज्ञान का विकास "पेराडाइम शिफ्ट" के कारण होता है, क्योंकि वैज्ञानिक परिवर्तन विशुद्ध रूप से एक संज्ञानात्मक प्रक्रिया नहीं है अपितु एक सामाजिक प्रक्रिया है। डॉ शाह ने छात्र-छात्राओं

सम्पादकीय

मानविकी एवं समाज विज्ञान परिषद का गठन 08 नवम्बर 2021 को किया गया। मानविकी एवं समाज विज्ञान परिषद के तत्वाधान में होने वाले व्याख्यान को साहित्यिक विद्वत समाज एवं छात्र/छात्राओं के सम्मुख प्रस्तुत करते हुए अपार हर्ष का अनुभव हो रहा है। अध्ययन के दौरान ही छात्र/छात्राओं को बेहतर से बेहतरीन होने का अवसर प्राप्त होता है। मानविकी एवं समाज विज्ञान परिषद के माध्यम से छात्र/छात्राओं के सर्वांगीण विकास के लिए सकारात्मक प्रयास किया जा रहा है। विद्यार्थी अपनी रुचि के अनुसार अपनी क्षमताओं का आंकलन भी कर सकेंगे। परिषद के माध्यम से प्राध्यापक एवं छात्र/छात्राओं के बीच विचारों का आदान प्रदान भी होता रहेगा।

डॉ० इन्दिरा जुगसान
एसो० प्रोफेसर
संस्कृत विभाग

NFHS-5 2019-20: KEY HIGHLIGHTS

The National Family Health Survey (NFHS) is a large scale, multi-round survey conducted in a representative sample of households throughout India. The first round of NFHS was conducted in 1992-93 and the latest round is the fifth round conducted for 2019—21. The objective of the survey is to provide requisite data on health and family welfare as needed by the ministry of Health and family welfare which conducts the survey. The Ministry has appointed International Institute of Population Sciences as the nodal agency responsible for providing coordination and technical guidance for the survey.

Recently, key indicators for the country as well as 22 states and union territories from Phase 1 of NFHS-5, 2019-20 were released. The key highlights of the survey at the national level and their implications include the following:

I. The total fertility rate (TFR) has been falling ones times and has now reached below at 21 at 2.0 just below the replacement rate of 2.1. This is true across all states of India which means that population has stabilized. This decline in TFR has further positive implications for women health as well. There one many factors responsible for this decline in TFR

को वैज्ञानिक क्रान्ति के लिए तैयार होने के लिए कहते हुए अपने व्याख्यान का समापन किया।



including rising female literacy, delayed marriage for both male and female, etc.

II. During 2019-21, it has been for the first time that more adult women were recorded than adult man which was revealed by an adult sex ratio of 1020 adult women per 1000 men. However the child sex ratio is still skewed at 952 child sex ratio is still skewed at 952 child sex ratio is still skewed at 952 girls per 1000 boys (0- 6) years.

III. The incidence of anaemia in under 5 children women as well as men has worsened in all states of India. This is a matter of grave concern as for as the health of the nation is concerned and the issue must be addressed by appropriate policy intervention.

IV. The three indicators of malnutrition, stunting, wasting and underweight show an overall improvement.

As far the key indicators in NFHS-5 for the state of Uttarakhand and its districts are concerned the total fertility rate has declined from 2.1 (NFHS, 2015-16) to 1.9 (NFHS-5 2020-21). The sex ratio at birth for children born in the last five years (females per 1000 males) has also improved from 888 (NFHS-4, 2015-16) to 984 (NFHS-5, 2020-21). The Infant Mortality Rate has also improved from 39.7 to 39.1. There has been significant increase in the percentage of C-section deliveries for Uttarakhand from 9.4% to 13.7% and similar trends are visible at the national level as well. WHO advocates the ideal percentage of

C-section births to be around 10-15% but in private hospitals of India every second pregnant woman is delivering through C-section operations. There is a need to inquire into this abnormally high percentage of C-section deliveries in private health care facilities which surpasses the percentage advocated by WHO.

The data above shows that NFHS-5, 2019-21 reveals positive trends related to women health, child nutrition ,sex ratios, population growth etc., about which the country can take a sigh of relief. But at the same time, concerns like rising anaemia, increasing C-section deliveries and TFR falling below replacement level might be early signs of major issues that can emerge as cause of concern in the future and hence appropriate measures taken timely can prove to be fruitful.

Dr. Pooja Bhandari
Assistant Professor
Deptt .of Economics

वैश्वीकरण : हिन्दी भाषा एवं साहित्य का दिशा निर्धारण

विज्ञान ने आज दुनिया के सभी देशों को एक बाजार बना दिया है जिससे किसी भी क्षेत्र या स्थान अथवा देश की घटना समस्त देशों को प्रभावित करती है। अन्तर्राष्ट्रीय निकटता के परिणाम स्वरूप विदेशी साहित्य ने भी हमारे साहित्य को प्रभावित किया है इसलिए साहित्य में अन्तर्राष्ट्रीय रुचि का विकास इसी भूमण्डलीकरण का परिणाम है। भारत देश की राजभाषा हिन्दी आज विश्व साहित्य और विश्व बाजार का मुकाबला करने के लिए सक्षम और तत्पर हो उठी है। पाश्चात्य कवियों व उनके साहित्य तथा काव्यान्दोलनों का हिन्दी साहित्य व कवियों पर प्रभाव इसी तत्परता एवं हिन्दी की सक्षमता का प्रमाण है। डॉ वी० एम० नेथन अपने लेख 'हिन्दी की वैश्विक चेतना' में हिन्दी साहित्य में पड़े प्रभाव की स्थिति को स्पष्ट करते हुए लिखते हैं—“औद्योगिककरण, शहरीकरण, कृषि, संस्कृति का विघटन, नारी जागरण, स्थानान्तरण आदि से सामाजिक पक्ष हैं, जिनका प्रभाव अ००न्तर्राष्ट्रीय साहित्य पर पड़ा। औद्योगिक सभ्यता की यांत्रिकता, महानगरों का अजनबीपन, सांस्कृतिक विघटन की पीड़ा यह सब ऐसे घटक हैं, जिससे विश्व-साहित्य अनुप्रमाणित हुआ है। इनमें भावनाओं की अपेक्षा विचारों की अभिव्यक्ति अधिक हुई है। अस्तित्ववाद, लघुमानवतावाद, आधुनिकतावाद, उत्तर आधुनिकतावाद, अतियथार्थवाद, जादुई यथार्थवाद, उपभोक्तावाद आदि अनेक विस्तृत वैचारिक परिसर, जिनका प्रभाव विश्व साहित्य के साथ हिन्दी साहित्य पर पड़ा।”

डॉ अकिता बोरा
सहायक प्राध्यापक
हिन्दी विभाग

बैंक

- बैंक क्या है ?

आज के समय हम सभी लोग बैंकों से भली-भाँति परिचित हैं। बैंक एक प्रकार की संस्था होती है जो अपने ग्राहकों या आम शब्दों में हम कहे लोगों को समय आने पर ऋण (उधार) देता है व लोगों द्वारा अपनी आय (कमाई) से बैंक में जमा की गई अपनी बचत (Saving) को सुरक्षित रखता है।

- आखिर बैंक क्या काम करती है ?

बैंक जनता से लेन-देन करती है। जनता बिना डर के बैंकों में पैसा जमा कर सकती है। (ब्याज एक प्रकार का पैसों पर किराया होता है। जो बैंक अपने ग्राहकों को जमा किए गए पैसों पर एक निर्धारित प्रतिशत के हिसाब से देता है।) बैंक लेन-देन के अलावा जनता को कई प्रकार के ऋण (Loan) भी देता है। जैसे की बिजनेस लोन, होम लोन, कार लोन, एजुकेशन लोन।

- बैंक क्यों जरूरी है?

वर्तमान समय में हम पैसों को घर में सुरक्षित नहीं मानते। क्योंकि प्रतिदिन हम खबरों, मैगजीन एवं न्यूजपेपर में चोरी-डकैती के मामले सुनते और पढ़ते रहते हैं। ऐसी परिस्थिति में बैंक अपने ग्राहकों के लिए विवसनीय साबित हुआ है। बैंक न केवल अपने ग्राहकों या जनता के लिए आवयक है बल्कि यह किसी भी देा की अर्थव्यवस्था में विकास के लिए महत्वपूर्ण भूमिका निभाता है।

(1) बैंक लोगों द्वारा जमा किए गए पैसों पर ब्याज देता है जिसके कारण ग्राहकों की आय में भी वृद्धि होती है , जो कि अर्थव्यवस्था की वृद्धि में भी सहायक है। यही नहीं यह देा के नागरिकों को रोजगार देता है, जिससे देा में बेरोजगारी को कम किया जा सकता है।

(2) बैंक अन्य देाों देाों के साथ लेन-देन भी करता है जिससे देा की अर्थव्यवस्था पर सीधा असर देखने को मिलता है। वर्तमान समय (2021) में भारतीय स्टैंट बैंक भारत का सबसे बड़ा बैंक है एवं यह एक भरोसेमंद बैंक है।

Reserve bank of India (RBI)

भारत का केन्द्रीय बैंक RBI कहलाता है अर्थात् यह भारत के समस्त बैंकों को चलाता है। RBI भारत की अर्थव्यवस्था को नियंत्रण में रखता है। यह समस्त बैंकों के लिए नोट छापने का काम करता है। इसे बैंको का बैंक भी कहा जाता है। यदि हम शुरुआती बैंको और अब के बैंको की तुलना करें तो हमें इनमें कई सारे बदलाव देखने को मिलते हैं। इसका जीता जागता उदाहरण हम अपने क्षेत्र टिहरी गढ़वाल,उत्तराखण्ड से ले सकते हैं जहाँ वर्तमान समय (2021) में आठ से अधिक बैंक

शामिल है। जहाँ ग्राहको के लिए सभी प्रकार की सुविधाएँ पूरी सुरक्षा व नई टेक्नोलॉजी के साथ उपलब्ध है।

उपरोक्त लेख से स्पष्ट है कि बैंक हमारे लिए और हमारे दे"ा के विकास के लिए कितना जरूरी है हम सभी को बैंक की सुविधाओं का लाभ उठाना चाहिए ताकि दे"ा का विकास भी हो। बिना बैंक के दे"ा की अर्थव्यवस्था में विकास के बारे में सोचना संभव नहीं है।

मानविकी एवं समाज विज्ञान परिषद का गठन 03 नवम्बर 2021 को किया गया। मानविकी एवं समाज विज्ञान परिषद के तत्वाधान में होने वाले व्याख्यान को साहित्यिक विद्वान समाज एवं छात्र/छात्राओं के सम्मुख प्रस्तुत करते हुए अपार हर्ष का अनुभव हो रहा है। अध्ययन के दौरान ही छात्र/छात्राओं को बेहतर से बेहतर होने का अवसर होता है। मानविकी एवं समाज विज्ञान परिषद के माध्यम से

छात्र/छात्राओं के सर्वांगीण विकास के लिए सकारात्मक प्रयास किया जा रहा है। विद्यार्थी अपनी रुचि के अनुसार अपनी क्षमताओं का आंकलन भी कर सकेंगे।

बैंक के सफल सम्पादन एवं अपने विचार रखने के उद्देश्य से इस परिषद का गठन हुआ। परिषद के माध्यम से प्राध्यापक एवं छात्र/छात्राओं के बीच विचारों का आदान प्रदान भी होता है।

आकृति
बी०ए० प्रथम वर्ष

Women in Leadership and Management

A leader has an ability to get things done by others. A capability to lead makes one a leader when it comes to leadership, it's a quality to influence others through direction motivation and supervision. Women is a leader in her every walks of life. Her different roles make her a leader. She is a leader as responsible homemakers, a devoted wife, a committed mother, an excellent jobholder as well as professional.

While performing her different roles, she has to deal with lots of challenges including largely under-represented in the workplace, besides full and equal participation in all aspects of society. Women and girls continued to be undervalued, they work more and earn less, have fewer choices and experiences multiple forms of violence at home and in public areas. It's a challenge to women to first handle these problems and then to get any higher positions and even if she reaches to a position these obstacles remains with her besides lots of challenge and obstacles women are working as a leader. The most powerful nation in the world has elected Kamala Harries as vice president from India in 2020. World trade organization has chosen an African lady Ngozi-Okonjo- lweala as its first women Director General. New Zealand is also under its lady leadership. India's richest self- made and first female brew master is Dr. Kiran Mazumdar-Shaw. The 2020 the Nobel prize winner for Literature, physics and chemistry were granted on women.

Women are also in management at higher positions. The share of women in higher ranking roles in management globally increasing rapidly In 2019, 29% of senior managing roles were obtained by women. 43% of HR directors were women compared 16% of chief information officer and 17% of sales directors. In 2020 40% of human resources directors

are women compared to 17% of chief marketing officers and 16% of chief information officers.

It is noted by MC Kinsey Global Institute (MGI) that Increasing the participation of women in corporate, India shall boost the Indian Economy by potentially increasing GDP to \$28 trillion by 2025, which is 26% more than predicted value. A number of studies have noted that women have a transformation style of leadership. They have ability to establish themselves as role models by gaining follower's trust and confidence along with making necessary changes to the current business models. So when women become leaders they provide a different set of skills imaginative ideas and structural and cultural differences that drive effective solutions.

Yes, of course no doubt that women are leaders and have leadership qualities inbuilt, but the reasons why women may not seek or apply to be elected as a leader is self confidence. The first thing which can encourage them is self confidence. For this organization should think to examine their training at both the professional and executive level and also to give them clear workplace.

It seems even if there is multiple challenges and social problems in women is life women are doing their best in their workplace. They are in every sector and places. They are in every sector and institutions. They are leading and managing their personal and professional life in all possible ways. But we should always remember that it all begins with small steps of empowerment by each and every individual towards women. Celebrate the girl child when she is born, give her equal opportunities as a boy when it comes to study & jobs teach her that there is nothing stopping her for achieving her dreams. Let's give her a clear sky!

Shivanshi Uniyal,
BA II year

संचेतना

विवेक युक्त ज्ञान, ज्ञानात् प्रथित विवेक

मानविकी एवं समाज विज्ञान परिषद

HUMANITIES AND SOCIAL SCIENCE COUNCIL

राजकीय स्नातकोत्तर महाविद्यालय नई टिहरी, टिहरी गढ़वाल

मासिक ई-न्यूजलेटर

अंक-II, जनवरी, 2022



मानविकी एवं समाज विज्ञान परिषद का द्वितीय मासिक व्याख्यान

डॉ पूजा भंडारी का व्याख्यान 'कार्य स्थल एवं घर पर महिलाओं द्वारा निभाई जाने वाली दोहरी भूमिका' एवं उन दो भूमिकाओं के बीच के अन्तःसंबंधों पर केन्द्रित रहा। डॉ पूजा भंडारी ने विश्व आर्थिक मंच द्वारा जारी की गई रिपोर्ट में वैश्विक लिंग असमानता बढ़ने के संदर्भ में भारत की महिलाओं की दूरदर्शा पर चर्चा की।



उन्होंने रिपोर्ट के दो चिन्ताजनक आंकड़ों को सामने रखते हुए बताया कि कार्यबल में महिलाओं की भागीदारी में गिरावट तथा स्वास्थ्य उपसूचकांक में कमी आई है। व्याख्यान के अन्त में उन्होंने कहा कि व्यापक लिंग अन्तर को कम करने के लिए महिला केन्द्रित मुद्दों से संबन्धित जागरूकता उत्पन्न करने के लिए समाज की भागीदारी होनी चाहिए। साथ ही वह सरकार द्वारा सक्रिय जातिगत हस्तक्षेप की मांग करती है।

Editorial

It is an immense pleasure to tell that the second E- newsletter is going to be published.

On this occasion I am grateful to the Academic Head, Dr. Indira Jugran, Associate Professor in Sanskrit.

It is the platform for all the members of the Council, students of the college to show their desire towards studies, lecture etc.

I am thankful to all the members who gave me support for this e-newsletter. I also gave my sincere thanks to the Principal, Govt. P.G College, New Tehri, Tehri Garhwal.

Last but not the least, I extend my thanks to the members of the editorial board who gave me support and help for published this e-newsletter. I thank Dr. S.S Kohli, Assistant Professor in Sociology and Dr. Meera Kumari, Assistant Professor in Hindi Department for devoting their time for publishing this e-newsletter.

Dr. Nishant Bhatt
Assistant Professor
Department of English

[Adventure Tourism and the Prospectus of Employment in Uttarakhand](#)

Uttarakhand commonly regarded as 'Devbhoomi' or the 'land of gods' is considered as a paradise for adventure sports. Adventure being an exciting and

unusual experience for tourists is a major source of attraction in the state. With the abundance of natural tourism resources, Uttarakhand is a home to the magnificent snow-clad Himalayas, splashing rivers, and the vast 'bugyals' extending beyond horizons. Uttarakhand offers outstanding skiing facilities in the Auli Ski Resort, providing excellent opportunities for cross-country and downhill skiing events. While water river rafting is another popular and thrilling adventure sport. The unique topography of Uttarakhand with splendid Himalayas in the north and plains of 'Tarai' in the south promises an unforgettable paragliding experience. Trekking in Pindari Glacier, Deoria Tal and Chandrashila has continued to lure mountaineers and trekkers for a long time. Besides all these camping, rock climbing, bird watching, lake activities, jungle safari and mountain biking are other thrilling and invigorating experience of a lifetime, and is available in plenty in Uttarakhand. In recent years, adventure tourism is emerging as an energetic, exciting, vibrant and rapidly growing sector of Uttarakhand tourism industry. Apart from being recreational and leisure activity, adventure tourism activities like river rafting, paragliding, skiing, kayaking, canoeing, boating, camping and trekking are highly labour intensive with a range of career options available for the local people of Uttarakhand. Job opportunities in adventure tourism can contribute towards the growth and development of the state, both from the prospects of revenue and employment generation and as an instrument of promotion of cultural and regional heritage.

Dr. Preetam Singh
Assistant Professor
Department of English

MULTIDIMENSIONAL POVERTY INDEX AND UTTARAKHAND.

As the world moved forward to the sustainable development goals in 2015, the first of which is "to end poverty in all its forms everywhere" this in its essence is a very multidimensional statement. Thus the time had arrived in India to employ a very non-monetary metric to index its poverty measurements.

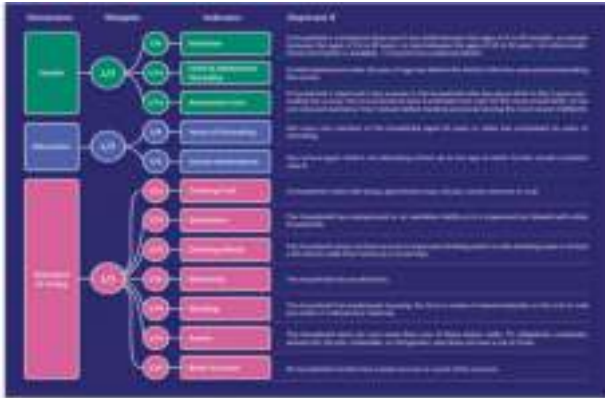
Thus in early 2020 the Cabinet Secretariat GOI, under the mandate to improve India's ranking in the Global Indices for Reforms and Growth (GIRG) identified NITI Aayog as the Nodal Agency for Multidimensional Poverty Index (MPI).

Tasked with the responsibility of ensuring "no one is left behind", the MPI is a broad index covering over 700 districts capturing indicators across twelve parameters which capture simultaneous deprivation and indicator wise contribution to poverty.

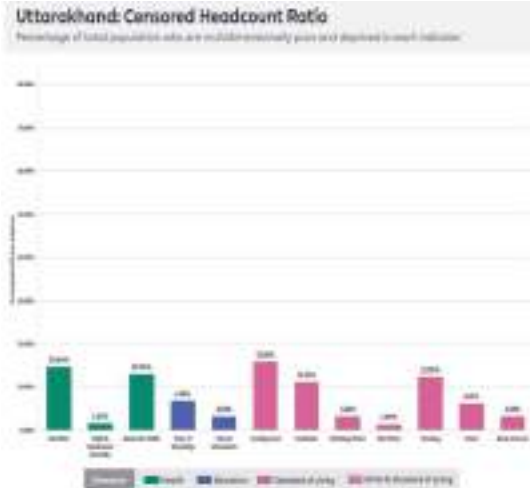
The MPI is measured using Alkire-Foster methodology, which is a framework where people are identified as poor and non-poor on the basis of a dual cutoff counting method. In the Indian backdrop this done by calculating the Head Count Ratio (H) which gives "how many poor" i.e. multidimensional poor are there. Then the qualitative dimension of "how poor are the poor" is calculated by the average share of weighted indicators of multidimensional poor people. This is known as the intensity of the poverty (A). Thus MPI is the product of aforementioned indices i.e. $MPI = A * H$.

The twelve indicators used to calculate the MPI are nutrition, child and adolescent mortality, ante natal care, years of schooling, school attendance, cooking fuel, sanitation, drinking water, electricity, housing, assets and bank account. These indicators cover the equally weighted dimensions of health, education and standard of

living.

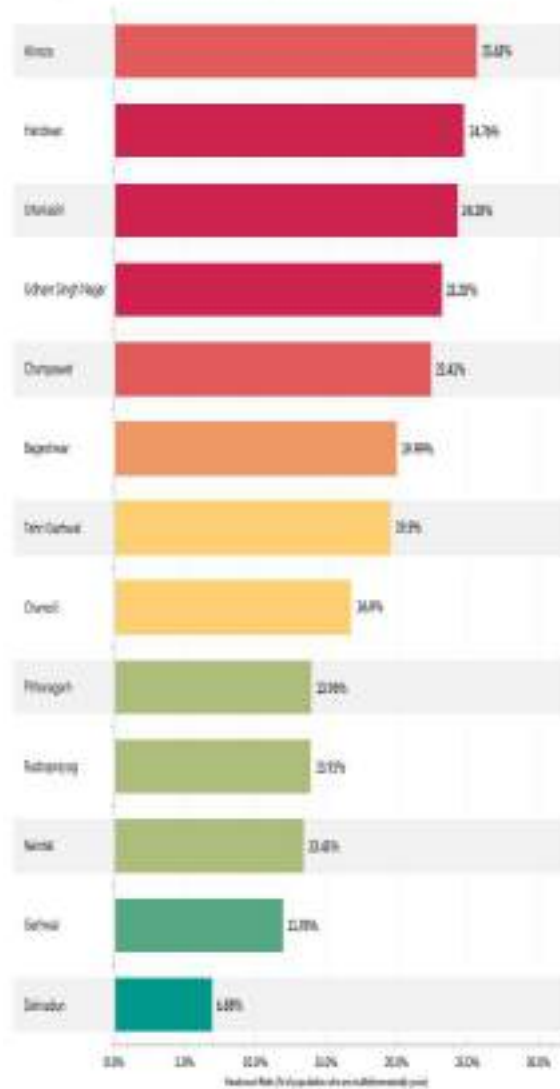


The first MPI (2021) is based on the dataset provided in the round of NFHS-4(2015-16). As regard to Uttarakhand it has an MPI of 0.079, it is positioned at 15th among 29 states in raw head count ratio (17.72%) which means that around 18% of its total population is multidimensionally poor. The indicator suggests that it is the deprivation of cooking fuel, nutrition, maternal health, sanitation and housing that feeds into poverty of people of Uttarakhand. As regards to the head count ratio in terms of districts of Uttarakhand, Almora district has the most percentage of the population that is multidimensionally poor (25.65%) and Dehradun district has the least percentage of the population that is multidimensionally poor (6.88%). The rural urban divide in terms of poverty is quite evident in the index as the head count ratio for the multidimensionally poor in the rural region of Uttarakhand is 21.94% as compared to the 9.89% in the urban region.



Uttarakhand: Headcount Ratio

Percentage of population who are multidimensionally poor in each district



Multidimensional Poverty Index



A reform action plan for cooking fuel, nutrition, maternal health and sanitation is certainly needed for Uttarakhand rural poor. As schemes and programmes regarding these indicators don't have the desired effect that could be captured in the MPI score. Though the NITI Aayog certainly does have template for reform action plan but it is generalized plan made in consultation with central government ministries. Thus now the state government along with the administration

should take into account the realities and developmental challenges, set its priorities by suitably modifying development programmes and schemes according to the local needs so that there is a visible reduction in multidimensional poverty and deprivations.

VAIBHAV SINGH RAWAT
ASSISTANT PROFESSOR
ECONOMICS.

आर्थिक एवं सामाजिक क्षेत्र में महिलाएँ

स्त्री शक्ति राष्ट्र शक्ति का अभिन्न अंग है, जिसे सशक्त और शामिल किए बिना कोई राष्ट्र शक्तिशाली नहीं हो सकता। भारत के संबंध में कई बार वर्ल्ड बैंक ग्रुप आदि ने कहा है कि अगर यहाँ पर महिलाओं की आर्थिक भागीदारी में वृद्धि की जाए तो भारत की विकास दर में तीव्र वृद्धि हो सकती है। गौरतलब है कि 1994 से 2012 के मध्य कई लाख भारतीय गरीबी रखा से बाहर निकल चुके हैं। इन आँकड़ों में और अधिक बढ़ोतरी होती अगर कार्यबल में महिलाओं की भागीदारी अधिक होती। महिलाएँ 2012 में सिर्फ 27% भारतीय महिलाएँ विभिन्न क्षेत्रों में कार्यरत थीं।

चिंता की बात यह है कि भारत के तीव्र शहरीकरण ने कार्यबल में महिलाओं की भागीदारी में कोई वृद्धि नहीं की है। देश में कार्यबल में महिलाओं की भागीदारी में 37% से नीचे गिरकर 2019 में 18% रह गई एवं जेंडर गैप के मामले में 23% पर आ गई। रजिस्ट्रार जनरल ऑफ इंडिया द्वारा प्रदान की गई सूचना के अनुसार महिलाओं की श्रम भागीदारी दर 2001 में 25.63% थी यह 1991 में 22.27% थी और 1981 में 1967 की तुलना में अधिक थी। 2001 में ग्रामीण क्षेत्रों में महिलाश्रम भागीदारी दर 30.79% थी। शहरी क्षेत्र में लगभग 80% महिला श्रमिक संगठित क्षेत्रों में काम करती हैं।

2004-05 के दौरान देश के कुल श्रम-शक्ति का अनुमान 455.7 मिलियन लगाया गया है। जो विभिन्न राज्यों के लिए एम्प्लॉयमेंट/अनएम्प्लॉयमेंट और जनसंख्या फैलाव पर एनएसएस राउन्ड सर्वे पर आधारित है। महिला श्रमिकों की संख्या 146.89 मिलियन थी या कुल श्रमिकों का केवल 33.2 प्रतिशत थी। इन महिला श्रमिकों में लगभग 106.89 मिलियन या 72.8 प्रतिशत कृषि कार्य करती थी। ब्लड बैंक ने अपनी इंडिया डिवेलपमेंट रिपोर्ट में कहा है कि वर्कफोर्स में महिलाओं की भागीदारी के मामले में भारत काफ़ी पीछे है। इस मामले में देशों की सूची में वह 120वें स्थान पर है। श्रमशक्ति में औरतों की भागीदारी 2005 के बाद से

लगातार कम हुई जबकि देश में 42 फिसदी स्त्रियाँ त्रैजुएट हैं। इंडस्ट्री और सर्विस सेक्टर में उनकी उपस्थिति महज 20 फीसदी है। निश्चित रूप से यह हमारे लिए सबक है। भारत की विकास प्रक्रिया सही मायने में अपने मुकाम पर पहुंचेगी जब महिलाएँ इसका अनिवार्य हिस्सा बनेंगी।

नाम :- शीतल
कक्षा :- बी.ए. प्रथम वर्ष

जनरेशन गैप

‘जनरेशन गैप’ जिसे पीढ़ी अंतराल भी कहा जाता है। हर उम्र के व्यक्ति के लिए एक सामान्य विषय बन चुका है। इसे हम इस संदर्भ में समझते हैं कि माता-पिता और संतान की उम्र का फासला ही जनरेशन गैप कहलाता है। परंतु यह पीढ़ी अंतराल केवल उम्र के आयाम तक ही सीमित नहीं है बल्कि यह विचारों में मतभेद, आदर्शों में अन्तःविरोध, आदि कई विभिन्न परिप्रेक्ष्यों से लिप्त हैं।

अक्सर यह देखने को मिलता है कि विभिन्न आयामों से लिप्त पीढ़ी अंतराल के फलस्वरूप संतान अपने माता-पिता से कई पहलुओं पर चर्चा करने में असहज रहती है। जैसे-जैसे शिशु बाल्यावस्था से यौवनावस्था की ओर प्रवेश करता है, उसका जीवन की सच्चाई से साक्षात्कार होता है। तब बहुत से ऐसे नवीन एवं संवेदनशील मुद्दे प्रकट होते हैं जिन पर एक संतान केवल अपने माता-पिता पर ही भरोसा कर सकती हैं, परंतु जनरेशन गैप के कारण ऐसा करना दुष्कर प्रतीत होता है। ऐसे में सर्वप्रथम यह प्रश्न उभरता है कि क्या यह संतान एवं अभिभावक के मध्य स्पष्ट रूप से उपजे? या यह संभव हो कि अभिभावक एवं संतान दोनों ही ऐसे प्रयास करें कि दोनों पीढ़ियों के बीच के अंतर को इस प्रकार सुलझाया जाए कि माता-पिता और संतान अपनी उम्र के किसी भी पड़ाव पर निःसंकोच एक-दूसरे से विचार-विमर्श कर सकें।

आवश्यक तो नहीं कि हमेशा माता-पिता को पुराने ख्यालात वाला एवं बच्चों को गैर-जिम्मेदार बताकर उनसे दूरी बना ली जाए, बल्कि हल तो तब निकल आता है जब बड़े भी आधुनिक विचारों को महत्व दें और बच्चे भी प्राचीन आद को समझें अगर बड़े और बच्चे दोनों ही सकारात्मक दिशा में प्रयास करें तो ‘पीढ़ी अंतराल’ एक शब्द मात्र रह जाएगा। और फलस्वरूप न तो कभी माता-पिता खुद को बेसहारा एवं अकेला पाएंगे और बच्चे भी उत्कंठा से ग्रसित होने पर गलत राह पर नहीं चल पड़ेंगे।

नाम:- मणिका राणा
कक्षा:- बी.ए. द्वितीय वर्ष

संचेतना

विवेक युक्त आस्था, आस्था प्रतिष्ठित विवेक

मानविकी एवं समाज विज्ञान परिषद

HUMANITIES AND SOCIAL SCIENCE COUNCIL

राजकीय स्नातकोत्तर महाविद्यालय नई टिहरी, टिहरी गढ़वाल

मासिक ई-न्यूजलेटर

अंक-III, फरवरी, 2022



मानविकी एवं समाज विज्ञान परिषद का तृतीय मासिक व्याख्यान

डॉ संजीव सिंह नेगी असिस्टेंट प्रोफेसर हिन्दी ने उर्दू जुबान और गालिब विषय पर अपना व्याख्यान दिया। डॉ संजीव सिंह नेगी ने उर्दू भाषा की महत्ता पर चर्चा की। उन्होंने बताया कि उर्दू भारतवर्ष की और हम सब की भाषा है। यह भाषा दुनियाँ को देखने का हमारा नजरिया बदलती है। इसके साथ ही उन्होंने हमें उर्दू के कई शब्दों से अवगत कराया।

डॉ संजीव सिंह नेगी ने गजल और गालिब के बीच संबंध बताने के साथ-साथ हमें बताया कि गजलें विभिन्न भाषाओं में लिखी गई हैं। साथ ही उन्होंने हमें गालिब के शेरों से भी अवगत कराया।



Editorial

It is an immense pleasure to inform you that the third printed E- Newsletter "Sanchetna" is going to be published from the editor's desk. In this occasion I am grateful to my Academic Head, Dr. Indira Jugran, Associate Professor in Sanskrit.

It is the platform for all the members of the Council, students of the college to show their desire towards studies, lecture etc.

I am thankful to all the members who gave me support for this E-Newsletter. I also give my sincere thanks to the Principal, Govt. P.G College, New Tehri, Tehri Garhwal.

Dr. Nishant Bhatt
Assistant Professor
Department of English

संस्कृत की प्रासंगिकता

संस्कृत क्यों जरूरी है – संस्कृत के विषय में कई तरह के प्रश्न पूछे जाते हैं।

भारतीय संस्कृति एवं साहित्य उससे पूर्णतया अनुप्राणित है। संस्कृत भाषा एवं वैज्ञानिकता को देश विदेश के विद्वानों ने स्वीकार किया है। वेद,

उपनिषद्, रामायण, महाभारत और गीता का आज भी देशव्यापी प्रचार है। हमारे देवालयाँ एवं तीर्थ स्थानों में उसका प्रभाव आज भी अक्षुण्ण है। हमारे उपनयन विवाह आदि समस्त संस्कार तथा अन्य धार्मिक कृत्य संस्कृत में ही सम्पन्न होते हैं। किसी भी शब्द के सही व्युत्पत्ति परक ज्ञान के लिए संस्कृत कर ज्ञान आवश्यक है।

सम्पूर्ण विश्व का सर्वाधिक पुराना साहित्य वेद है। विश्व सृष्टि का अनुसंधान भी सर्वप्रथम विश्व के समक्ष विश्व के प्राचीन लिखित ग्रन्थ ऋग्वेद में उपलब्ध होता है—

**“नासदासीन्नो सदासीत् तदानीमासीद् रजः नो व्योपमरो यत्।
किमावरीवः कुहकस्य शर्मन अम्भः किमासीद् गहनं गम्भी रम्।”**

उस समय सृष्टि उत्पत्ति से पहले असत् अभावात्मक तत्व नहीं था और सत्तात्मक तत्व भी नहीं था। रजः अर्थात् पृथ्वी आदि का कोई लोक भी नहीं था। अन्तरिक्ष नहीं था और अन्नरिक्ष से परे कुछ भी नहीं था।

“आकाशाद् वायुर्वायोरग्निरापडदभ्यः पृथ्वी।”

आकाश से स्पन्दन् होकर वायु उत्पन्न हुई, वायुअग्नि, अग्नि से जल और जल से पृथ्वी अविर्भूत हुई आधुनिक वैज्ञानिकों ने जब तक यह पता लगाया कि जल हाइड्रोजन तथा आक्सीजन का पौगिक रूप है तथा हाइड्रोजन जलनशील गैस है और आक्सीजन के बिना भी अग्नि प्रज्ज्वलित नहीं हो सकती तब तक संस्कृत वाङ्मय में अग्नि से मानी गयी जल की उत्पत्ति को अस्मभव मानते थे।

आधुनिक वैज्ञानिकों ने जो यह प्रतिपादित किया कि पदार्थ मात्र अविनाशी है, उसका केवल रूपान्तरण किया जा सकता है, सर्वथा विनाश असम्भव है। वह तथा संस्कृत में पाँच सहस्र वर्ष पूर्व कृष्ण शब्दों में प्रतिपादित कर दिया गया था—

“नासतो विद्यते भावो नाभावो विद्यते सतः।”

जो है ही नहीं, उसकी विद्यमानता हो ही नहीं सकती और जो विद्यमान है, उसका कभी विनाश नहीं हो सकता।

केवल भारतीयों ने ही नहीं अपितु अनेक विदेशी विद्वानों ने तो अपना पूरा का पूरा जीवन ही संस्कृत को समर्पित कर दिया। जैसे— इब्राहिम रोजर ने संस्कृत का ज्ञान प्राप्त कर भर्तृहरि के सुभाषित श्लोकों का हिन्दी अनुवाद प्रकाशित किया। मैक्समूलर ने सायण भाष्य सहित ऋग्वेद को प्रकाशित कराया तथा संस्कृत, साहित्य का इतिहास लिखा।

चार्ल्स विलिकन्स ने भगवद्गीता, हितोपदेश शकुन्तकलोपाख्यान का अंग्रेजी अनुवाद प्रकाशित किया। यह पहला अंग्रेज था जिसने भारतीय शिलालेखों का अध्ययन कर उनमें से कुछ का अंग्रेजी अनुवाद प्रकाशित किया। सर विलियमजोन्स ने ‘अभिज्ञान शकुन्तलम्’ का अंग्रेजी अनुवाद किया। मनुस्मृति का अंग्रेजी अनुवाद प्रकाशित कराया।

प्राचीन भारत में कला एवं विज्ञान की समुन्नत दशा के प्रत्यक्ष प्रमाण स्वरूप देश भर में विद्यमान मूर्ति, चित्र,स्तम्भ,मन्दिर, स्तूप, दुर्ग, प्रासाद आदि आश्चर्यजनक पुरातत्व सम्बन्धी सामग्री को देख-देख कर लोगों के मन में स्वभावतः उनके पूरे-पूरे इतिहास को जानने की अभिलाषा उत्पन्न होती है और इस अभिलाषा की तृप्ति केवल संस्कृत साहित्य से ही होती है। क्योंकि समुद्रगुप्त का प्रयोग स्तम्भ, कुमार गुप्त का मन्दसौर अभिलेख, एहोल शिलालेख,रुद्रदामन शिलालेख आदि सभी संस्कृत में हैं। यह बताने की आवश्यकता नहीं, कि प्राचीन भारत का समूचा इतिहास क्या धार्मिक, क्या सांस्कृतिक क्या सामाजिक और क्या राजनीतिक—संस्कृत वाङ्मय में ही संनिहित है।

वेदों के अति रहस्यमय ज्ञान से लेकर सामान्य जनजीवन के मनोविनोद से सम्बन्धित “पंचतन्त्र” की कथाओं तक जितना भी साहित्य वैभव विद्यमान है वह सब संस्कृत भाषा में ही सुरक्षित है।इसके अतिरिक्त आयुर्वेद और ज्योतिषशास्त्र जैसे ग्रन्थ भी संस्कृत में ही लिखित हैं। मानव इतिहास से सम्बन्ध अत्यन्त बहुमूल्य और अत्यन्त उपादेय प्रामाणिक सामग्री संस्कृत में ही संचित हैं।

संस्कृत भाषा पूरे देश के साथ जुड़ी हुई है। संस्कृत भाषा के अमर उद्घोष “संगच्छध्वं संवदध्वं” के प्रतिक्षण अनुपालन की महती आवश्यकता है, तभी “वसुधैव कुटुम्बकम्” की कल्पना अपना वास्तवीक रूप ले सकती है।

**डॉ० इन्दिरा जुगरान
एसोसिएट प्रोफेसर
संस्कृत विभाग**

Food and Nutrition

Nowadays every individual is having a busy lifestyles and everybody wants to lead a healthy life. But the problem is how to maintain our lifestyles and keep ourselves healthy and nutritious. So, if one has a proper knowledge of food and nutrition the problem of keeping ourselves fit and healthy would come to an end.

Food and nutrition is essential for every individual. Food acts as fuel in our body. It is the main basis of maintaining health. We get food from plants as well as from animals. On the other hand, nutrition is a dynamic process which comprises consumption of food to remain healthy. It gives nourishment to our body.

So the food which we all are consuming should be nutritious. Lacking of nutrition from food makes food of no value. We should avoid eating fast food like burgers, pizzas and street foods and in place of these foods we should go to nutritious foods like fruits and vegetables, salads, nuts and dryfruits and also homemade food which is so good for health.

Now it's in our hands that what food we want to consume. Is it to be the food which harms our body or is it to be the food which charms our body as well as our mind. In my opinion, take example from the nature. The nature is having its own beauty because it makes its food naturally besides all those junk foods. We are also the part of this nature and it's our responsibility to keep ourselves healthy like nature.

Shivanshi Uniyal
B.A II Year

ROLE OF ADEQUATE NUTRITION DURING PANDEMIC

Eating a healthy diet is very important during the COVID-19 pandemic. What we eat and drink can affect our body's ability to prevent,

fight and recover from infections. Healthy diets are important for supporting immune system. Good nutrition can also reduce the likelihood of developing other health problems; including obesity, heart disease, diabetes and other types of diseases. Wearing masks and using sanitizers is essential but one also must prepare their body and immune system to fight against the virus. In such a case, short-term immunity boosters won't be helpful. It is best that you change your lifestyle, follow healthy habits, and incorporate the right kind of foods on a long term.

For maintaining a healthy diet, we must eat a variety of food, including fruits and vegetables. Every day, eat mix of whole grains like wheat, maize and rice; legumes like lentils and beans, plenty of fresh fruits and vegetables, with some foods from animal products like meat, fish, eggs and milk.

Choose wholegrain foods like unprocessed maize, millets, oats, wheat and brown rice; you can take these foods as these are rich in valuable fiber and can help you feel full for longer. For snacks, choose raw vegetables, fresh fruits, and unsalted nuts. Eat moderate amounts of fats and oils, avoid baked and fried foods that contain industrially produced trans-fat. Choose fresh fruits instead of sweet snacks such as cookies, cakes and chocolates. When other dessert options are chosen, ensure that they are low in sugar and consume in small portions. Drink enough water. Good hydration is crucial for optimal health.

A fluid in the circulatory system, known as lymph, carries infection-fighting immune around the body. It is largely made up of water; and when the body gets dehydrated, its movement slows down; sometimes leading to an impaired immune system. Physical activity is an important part of being healthy and supporting a healthy immune system. Regular exercise might improve immune functioning by boosting the overall circulation; making it easier for immune cells, other

molecules to travel easily throughout your body. The pandemic has taught us that no supplement will cure or prevent the diseases. Boosting one's immunity is one of the essential things; one has to follow proper healthy diet.

Monika
BA I year

मनरेगा

मनरेगा का दर्शन या विचारधारा का स्रोत भारत का संविधान है जो कि भारतीय संविधान के अनुच्छेद 21,39 (अ) एवं 41 में निहित है। मनरेगा भारत सरकार के द्वारा अन्य रोजगार कार्यक्रमों की व्यवहारिक सीमाओं को दूर कर मनरेगा पर केन्द्रित है।

मनरेगा विकास की एक रणनीति है। अतः इसकी प्रकृति एवं क्षेत्र अत्यधिक व्यापक एवं विस्तृत है। मनरेगा जनता को रोजगार प्राप्त करने का एक कानूनी अधिकार सौंपता है। अब तक ग्रामीण विकास कार्यक्रमों में गरीबी रेखा के नीचे के व्यक्तियों को लक्ष्य समूह माना गया है। जबकि मनरेगा समस्त ग्रामीण समूह के लिये है। इस कानून के अंतर्गत आवेदक के द्वारा रोजगार की मांग की जानी है। अतः इसका वास्तविक लाभ उन्हीं व्यक्तियों को प्राप्त होगा, जिन्हें वास्तविक रूप से सरकार की सहायता एवं सहयोग की आवश्यकता होगी।

मनरेगा के अंतर्गत गृहस्थ के किसी एक वयस्क सदस्यों को वर्ष में कम से कम 100 दिनों का श्रम रोजगार प्राप्त करने का अधिकार है, यह रोजगार गैर कुशल शारीरिक कामगारों को उपलब्ध है। यह बेरोजगारी की समस्या को दूर करने की दिशा में मनरेगा का विशेष महत्व है, क्योंकि इसका संबंध ऐसे क्षेत्र से है जहां सर्वाधिक बेरोजगारी है। आवेदक को आवेदन की तिथि से 15 दिनों के अंदर रोजगार उपलब्ध कराया जाना है। अन्यथा आवेदक को बेरोजगारी भत्ता दिया जायगा, रोजगार आवेदक के निवास स्थान से 5 किमी. की त्रिज्या के भीतर होना चाहिए एवं रोजगार का कार्य क्षेत्र इससे अधिक होने की स्थिति में यातायात भत्ता उपलब्ध कराया जाता है एवं रोजगार ऐसे कार्य के संदर्भ में दिया जाना है जिसका संबंध ग्रामीण आधारभूत संरचना को विकसित किये जाने से है। ऐसे प्रावधानों के माध्यम से कार्यों के प्रति कामगारों की कटिबद्धता को प्रोत्साहित करने का प्रयास किया

गया है, ताकि कार्य के गुणवत्ता स्तर में बढोतरी हो सके।

मनरेगा के माध्यम से पंचायतों विशेषकर ग्राम पंचायतों को अधिक सौंपा एवं सुदृढ़ बनाने का प्रयास किया गया है। मनरेगा के अंतर्गत परिपालक अभिकरण के रूप पंचायतों की भूमिका को प्रोत्साहित करने पर विशेष बल दिया गया है, ग्राम पंचायतों के द्वारा ही गृहस्थों का पंजीकरण किया जाना है एवं जॉब कार्ड जारी किया जाना है। ग्राम पंचायतों के क्षेत्राधिकार में लागू की जाने वाली परियोजनाओं के लेखा परीक्षण का दायित्व ग्राम सभा को सौंपा गया है ताकि ग्राम पंचायतों को ग्राम सभा के प्रति अधिक जवाबदेह बनाया जा सके।

मनरेगा से सम्बन्धित सारे दस्तावेजों की सूचना के अधिकार में शामिल किया गया है। जिससे अधिक पारदर्शिता को प्राप्त किया जाना सम्भव हो पाया है। मनरेगा के अंतर्गत कामगारों को भुगतान साप्ताहिक आधार पर किया जाना है जो कि किसी भी परिस्थिति में कार्य सम्पन्न होने के उपरान्त 15 दिनों से अधिक नहीं हो सकता है एवं भुगतान समुदाय के समक्ष किया जाना है। इस प्रावधान के माध्यम से दलालों की भूमिका को बाहर किया गया है। जिससे भ्रष्टाचार की सम्भावनाओं को कम से कम किया जा सके।

कार्यस्थल पर पीने के पानी, प्राथमिक स्वास्थ्य जैसी मूलभूत सेवाओं के माध्यम से मानवीय पक्ष पर भी ध्यान केन्द्रित किया गया है। मनरेगा ग्रामीण अर्थव्यवस्था को सुदृढ़ करता है। जो कि भारतीय अर्थव्यवस्था का मूल आधार है। इसके माध्यम से ग्रामीण जनता की आर्थिक आत्मनिर्भरता सुदृढ़ होती है जो कि ग्रामीण विकास के अन्य लक्ष्यों को प्राप्त करने में भी सहायक सिद्ध होगा। मनरेगा ग्रामीण क्षेत्रों से शहरी क्षेत्रों की ओर पलायन को रोकने में भी सहायक सिद्ध होगा। जिसका प्रभाव सामाजिक स्तर पर स्वाभाविक है।

ग्रामीण अर्थव्यवस्था को सुदृढ़ करने में मनरेगा अप्रत्याशित संभावनाओं एवं अवसरों को व्यक्त करता है बर्तन इसके परिपालन के दिशा में पारदर्शिक नियमों का अनुपालन दृढ़ता से किया जाय जो कि मनरेगा के प्रावधानों में वर्णित है। यदि मनरेगा का परिपालन अधिनियम के शर्तों एवं भावनाओं के अनुरूप किया गया तो यह ग्रामीण क्षेत्रों के साथ-साथ भारत की दिशा एवं दिशा को परिवर्तित कर सकता है।

डॉ. मीनाक्षी शर्मा
असिस्टेंट प्रोफेसर
राजनीति विज्ञान विभाग

संचेतना

विवेक युक्त आस्था, आस्था सहित विवेक

मानविकी एवं समाज विज्ञान परिषद HUMANITIES AND SOCIAL SCIENCE COUNCIL राजकीय स्नातकोत्तर महाविद्यालय नई टिहरी, टिहरी गढ़वाल

मासिक ई-न्यूजलैटर

अंक IV, मार्च, 2022



मानविकी एवं समाज विज्ञान परिषद का चतुर्थ मासिक व्याख्यान

डॉ० इन्दिरा जुगरान एसोसिएट प्रोफेसर संस्कृत ने आयुर्वेदानुसार औषधिय पादपों के गुणधर्म व प्रयोग पर अपना व्याख्यान दिया। डॉ० इन्दिरा जुगरान ने बताया कि आयुर्वेद से हमें जीवन का ज्ञान मिलता है तथा आयुर्वेद की शुरुआत औषधिय पादपों से हुई।

इसके साथ ही उन्होंने हमें औषधिय पादपों के कई गुणों से अवगत भी करवाया। उन्होंने बताया कि किस प्रकार विशैले रसाइनों से औषधिय पादपों को नुकसान हो रहा है तथा नुकसान से बचने के उपाय भी बताए।



डॉ० इन्दिरा जुगरान ने हमें औषधिय पादपों से मिलने वाले कई नुसखों पर प्रकाश डालते हुए हमें औषधिय पादपों से अवगत भी करवाया जैसे पदमकाष्ठ, कपूरकचरी, कटाफल, कुटकी, जंगली अंजीर, अमृता, जटामान्सी, अतिवृसा, चूलू, चिरायता, अप्राजिता, अश्वगंधा आदि।

उन्होंने बताया कि पदमकाष्ठ के बीजों और पत्तों को मसाले के रूप में प्रयोग किया जाता है एवं पानी को शुद्ध करने के लिए भी इसका प्रयोग किया जाता है। कपूरकचरी रक्त को शुद्ध करता है एवं त्वचा को निरोगी बनाता है।

कटाफल का तेल जोड़ों के दर्द को दूर करता है। कुटकी वजन को घटाने में लाभ देती है। अमृता तथा जटामान्सी त्वचा के घाव को मिटाने में लाभ देती है, दिल या हृदय की धड़कन बड़ जाने पर इसका प्रयोग किया जाता है। इसके साथ ही उन्होंने हमें कई औषधिय पादपों का चित्रण भी फिल्माया।

शुभादकीय

मैं मानविकी एवं समाज विज्ञान परिषद के समस्त सदस्यों का आभार प्रकट करती हूँ। 'संचेतना' ई-न्यूजलैटर का चौथा संस्करण छपने जा रहा है, इस हेतु मैं डॉ० इन्दिरा जुगरान एसो० प्रोफेसर संस्कृत विभाग एवं अकादमीक प्रभारी का धन्यवाद प्रकट करती हूँ।

इस परिषद के माध्यम से प्राध्यापक एवं छात्र-छात्राओं का ज्ञान वर्धन होता है। इस परिषद के माध्यम से हम किसी एक विषय-वस्तु पर परिचर्चा कर उसके निष्कर्ष पर पहुँच सकते हैं। मैं प्रधान संपादक डॉ० निशान्त भट्ट, असिस्टेंट प्रोफेसर, अंग्रेजी विभाग एवं डॉ० सोबन सिंह कोहली, असिस्टेंट प्रोफेसर समाजशास्त्र विभाग, का धन्यवाद प्रकट करती हूँ।

अन्त में मैं डॉ० रेनु नेगी, प्राचार्य राजकीय स्नातकोत्तर महाविद्यालय, नई टिहरी, का भी धन्यवाद प्रकट करती हूँ जिनके पूर्ण सहयोग से इस ई-न्यूजलैटर 'संचेतना' का चतुर्थ अंक का सफल प्रकाशन हो सका।

डॉ० मीरा कुमारी
असिस्टेंट प्रोफेसर
हिन्दी विभाग

Editorial

I am very thankful to all the members of the Humanities and Social Science Council on the eve of publication of the fourth edition of our e-newsletter 'SANCHETNA'.

It is the place where the teachers, students give their thoughts on a particular topics which is purely beneficial for all the people who read it.

Last but not the least, I pay my sincere thanks to Academic Head of our Council Prof. Indira Jugran, I also give my thanks to the members of editorial board including Dr. S.S Kohli, Assistant Prof. Department of Sociology, Dr. Meera Kumari, Assistant Prof. of Hindi. I am thankful to our Principal Prof Renu Negi, who gave us her unencumbered support for printing this e-newsletter and conducting the lectures.

Dr. Nishant Bhatt
Assistant Professor
Department of English

Linguistic Study of Sanskrit and English

सुरसा सुबोधा – विश्वमनोज्ञा
ललिता – हृदय रमणीय ।।
अमृतवाणी संस्कृतभाषा
नैव क्लिष्टा न च कठिना ।।

Sanskrit is an ancient and classical language of India. Rigveda was the first book in Sanskrit. It is believed that Vedas are dated by from 6500 B.C. During this period a vast literature – Vedas, Brahmana - Granthas, Aranyankas, Upanishad are Vedangas had come into existence Panini (500 B.C.) had a great impact in the development of Sanskrit literature. About ten grammar school were prevalent during his time, he wrote the master book of Sanskrit grammar named Ashtadhyayi which was a milestone in concising the grammar of Sanskrit and served as beacon for the later period.

Literary Sanskrit and spoken Sanskrit both followed Panini's system of language. According to Paninian Grammar and investigations of M.R. Kale, Sanskrit has 35 pronouns . Today the correctness of Sanskrit language is tested upon the touch stone of Panini's Ashtadhyayi. Sanskrit is said to Indo- Aryan or Indo – Germanic family of languages which includes Greek, Latin , English and other alike languages. There is more connections between Sanskrit and English.

Many English words actually have Sanskrit origins. Similarly, many Vedic religious concepts can also be found in western culture. Some Sanskrit words are difficult to be spelt in English as the Sanskrit has 42 letters and English has only 26. The differences in the pronunciation of "c" , "kicking ka" "curly ka" "J" and "G" in English are an issue. In mainstream some English words derived from Sanskrit, are as follows.

Root Sanskrit Words	Derived English Words
Sri	Sir
Gav	Cow
Matr	Mother
Sarpa	Serpent
Naas	Nose
Danta	Dental

Sanskrit has been studied by westerners, since the late 18th century. In the 19th century, the study of Sanskrit played a crucial role in the development of the field of comparative linguistics of the Indo-European languages.

Sanskrit grammar and its salient features are well captured in a computer program 'DESIKA' an analysis program based on Paninian grammar, 'DESIKA' includes Vedic processing as well. The English sentence always has an order of subject +verb+ object, while Sanskrit sentence has a free word order.

A free order language is a natural language which does not lead to any absurdity or ambiguity, thereby maintaining a grammatical and semantic meaning for every sentence obtained by the change in the ordering of the words in the original sentence.

Dr. Ashok Joshi
Assistant Professor
Department of English

Introduction to New Education Policy 2020

The New Education Policy of India 2020 (NEP 2020) which was approved by the Union Cabinet of India on 29th July 2020, outlines the vision of new education system of India. The new policy replaces the previous National policy on education,1986. The policy is a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India.

K. Kasturirangan, an eminent scientist who steered the Indian Space Programme as chairman of (ISRO) Indian space Research organization for nine years, was the Chairman of the Committee for Drafting this policy. At the Bengaluru Tech Summit 2020 Kasturiangan explains how this new education policy could bring transformatory changes in India's education system.

New Education Policy gets green Signal to be implemented from 2022-23. It will be implemented from the academic year 2022-23. It will be implemented from the academic year 2022-23 has been cleared by the Union Cabinet. At the same time the human resource Ministry will be remained as education Ministry. The New education policy 2020 includes school education then higher education, other areas to be focused and most important quality and affordable Education for all.

According to the Ministry of human resource Development "This National Education policy 2020 is the 1st education policy of the 21st century land aims to address the many growing development

imperatives of our country. This policy proposes the revision and revamping of scale aspects of the education structure, including with regulation and governance, to create a new system that is aspirational foals of the 21st century education, including SDG4, while building upon India's traditional and value system!

Dr. Nishant Bhatt
Assistant Professor
Department of English

My Erudition with Shakespearean Drama- 'Othello' and 'Twelfth Night'

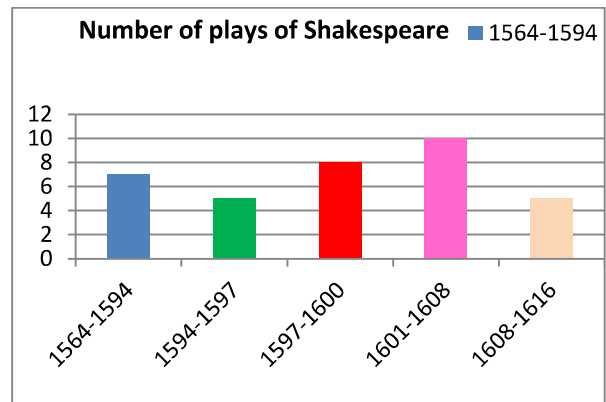
William Shakespeare is considered the greatest dramatist, the world has ever known, as well as the finest poet who had written in English language. He is credited with thirty seven plays and had written memorable series of Sonnets which were a boon for the dramatic industry. Thomas Carlyle exclaimed " *The Indian Empire will go at any rate some day , but this Shakespeare does not go, he last for ever with us, we cannot give up our Shakespeare.*" This statement of Carlyle clearly shows that the Shakespeare was the brightest ornament and was the most cherished personality of his days.

WORKS OF SHAKESPEARE

S. No	Approximate year	Name of plays	No. of plays
01	1564-1594	Henry VI three parts, Richard III, Titus Andronicus, Love 's Labour's Lost ,The Two Gentlemen of Verona, The Comedy of Errors, The Taming of the Shrew.	07
02	1594-1597	Romeo and Juliet, A Midsummer Night Dreams, Richard II, King John, The Merchant of Venice.	05
03	1597-1600	Henry IV part I, Henry IV part II, Henry V, Much Ado About Nothing, Merry Wives of Windsor, As You Like It, Julius Caesar, Troilus ,Cressida.	08

04	1601-1608	Hamlet, Twelfth Night, Measure for Measure, All's Wells That Ends Wells, Othello, King Lear, Macbeth, Timon of Athens, Antony and Cleopatra, Coriolans.	10
05	1608-1616	Pericles,Cymbeline , The Winter's Tale,The Tempest, Henry VIII.	05
Total plays			35

Shakespeare had written total 35 plays during his life. He had written his maximum number of plays during 1601-1608.'Othello' and 'Twelfth Night' are the two plays of that period of Shakespeare which I have gone through.



Some of his greatest works were written during the time of personal misfortunes like 'Twelfth Night'-a tragi comedy, which shows his dedication and love for his work and a mark of a great dramatist. Shakespeare had a great understanding of human soul in pain. He acquired knowledge of the world and the men and women living in it. He reveals the hidden depths of the human minds which clearly seen in his drama-'Othello' where he created an environment of deep pain and sorrow at the end of the drama.

He gave his audience a feeling of separation of the hero from his beloved due to death, which shows profound emotional presentation of Shakespeare. He presented villain filled with revengeful spirit to evoke a feeling of the hatred in the audience. The play has a intense moral beauty. It makes a moral imagination. As in its presentation of figure of love Desdemona which does not alters for Othello. Shakespeare's 'Othello' is the mirror of real life experiences along with all his tragedies.

Another quality of Shakespeare is to make people laugh and entertain. His comic spirit was clearly seen in his 'Twelfth Night'. He used dramatic characterization and wit in his 'Twelfth Night'. He presented sentimental love of Duke with the music 'food of love' to Olivia and firstly created an environment to connect audience with the characters with emotions and music and at the end when the matter got disclosed he gave pleasure of laughter to the audience. This quality of Shakespeare shows that how nicely he used his characters of his drama with keeping the interest of the audience and to make them laugh on the characters. He gives his plays not only unity and vitality as well. He gave depth to his plays by using poetry, music, imagination, love, dialogues and climax, humour, wit, satire, dramatic irony and soliloquy which makes his plays more beautiful, glorious and valuable and becomes a bearer of pleasure to the audience.

Name:- Shivanshi Uniyal

Class:- B.A II Year

Why U.P.I Needs to Replace Swift

The west has retaliated against Russia, not with weapon but with finance. Russian bank have been cut off from Swift. Even Aadhar card and VISA have stopped their Russian operations. How will Russia receive International payment? This had created huge problem for Russian people, but this problem can be a huge opportunity for India but how???? Because of these three letters (U.P.I) unified payments interface.

How U.P.I. can help India at the Global level? But what is SWIFT? SWIFT (Society for Worldwide Interbank Financial Telecommunication) If you want to transfer funds internationally today the process for it is quite simple. You can visit a bank branch or fill up a form for the online and your money is transferred in sometime. You can transfer your funds to any country in the world. This is possible because of SWIFT.

SWIFT is a instant managing system which connect 200 countries and 11000 banks. In 2021 more than 4 crore transactions was done daily and it was handled by SWIFT. Swift system does not transfer any money. The money transfer is done by the banks. But how does the communication happen safely and securely? Swift solves this problem.

Since 1973 SWIFT has acted like a postman for the banking system and it keeps the power of the US

dollar worldwide. On the face of it, SWIFT is an independent co- operative organization. But actually it is controlled by USA and European Union. SWIFT has a monopoly on international transactions whenever any country challenges western ideas it is removed from the Swift System. This directly impacts the economies of those countries.

In March 2012 the USA kicked Iran from Swift. This crashed Iranian Oil export by more than 50% North Korea is out of the Swift network for obvious reason Think about it.... Just because your ideologies don't match with other world leaders. You cut the entire population of that country from the Global financial System. What kind of logic is that?? How does it change the political ideology/there? If it is so ironic.

The US is a democracy but today the US has become so powerful that it behaves like a bully internationally. If dictates what is right and what it wrong So much power concentrated in the hands of one country is dangerous for world peace, several Russian banks have been kicked out of SWIFT . The connection of Russian banks with Global banks is served Russian entities have overseas loans of \$121 billion.

Russia supplies oil and gas to Europe and the world 50% weapons and components. There has to be some or the other solutions to this. Not having SWIFT has caused a vaccum. That's why this vaccum needs to be solved because this will impact the whole world. And this is where India's financial technology comes in. If something has spread factor than covid in India. If is the use of UPI. UPI stands for unified payments interface.

Today from coffee to the stake of the company that cells me that coffee I can buy all of this in one single click with the help of UPI India has left USA and China behind in digital transactions. Is UPI possible internationally? Yes, NPCI or National Payments corporation of India informed the country that after revolutionizing payments in India Nepal has adopted UPI as well. Through a partnership with UAE'S Masheteq bank, Indian visitors can make payments in UAE , via UPI There are talks to enable UPI in to other countries. This men for the first time on such a big scale Indian Technology will make India proud. This is a proud moment for every Indian.

Name:-Priyanshu Singh

Class:- B.A II Year

संचेतना

विवेक युक्त आस्था, आस्था सहित विवेक

मानविकी एवं समाज विज्ञान परिषद

HUMANITIES AND SOCIAL SCIENCE COUNCIL

राजकीय स्नातकोत्तर महाविद्यालय नई टिहरी, टिहरी गढ़वाल

मासिक ई-न्यूज़लैटर

अंक V, जून 2022



मानविकी एवं समाज विज्ञान परिषद का पांचवां मासिक व्याख्यान

डॉ हर्ष सिंह नेगी, विभागाध्यक्ष अर्थशास्त्र विभाग द्वारा 'पांच ट्रिलियन अर्थव्यवस्था – चुनौतियाँ एवं राहें' विषय पर व्याख्यान दिया गया। उन्होंने बताया कि प्रधानमंत्री नरेन्द्र मोदी जी ने वित्त वर्ष 2024–25 तक भारत को 5 लाख करोड़ डॉलर (5 ट्रिलियन डॉलर) की अर्थव्यवस्था बनाने का लक्ष्य रखा है तथा कोरोना महामारी की वजह से यह लक्ष्य रुका हुआ है, जिससे भारतीय अर्थव्यवस्था को नुकसान पहुंच रहा है, जिसकी वजह से 2021 में भारतीय अर्थव्यवस्था – 7.3 फीसदी पर पहुंच गई है।

इसके साथ ही आर्थिक प्रणाली पर प्रकाश डालते हुए उन्होंने आर्थिक गतिविधियों और पूंजीवादी अर्थव्यवस्था के बारे में बताया कि पूंजीवादी अर्थव्यवस्था निजी स्वामित्व और उत्पादनों के साधनों पर निर्भर करती है। जिससे बाजार में फर्मा के बीच प्रतिस्पर्धा उत्पन्न होती है। इसके साथ ही उन्होंने समाजवादी अर्थव्यवस्था के बारे में भी बताया जो सामाजिक स्वामित्व पर निर्भर करती है।



पूंजीवादी एवं समाजवादी अर्थव्यवस्था के अंतर को स्पष्ट करते हुए उन्होंने बताया कि भारतीय अर्थव्यवस्था, पूंजीवादी एवं समाजवादी अर्थव्यवस्था से मिलकर बनी एक मिश्रित अर्थव्यवस्था है। साथ ही उन्होंने भारत एवं चीन की अर्थव्यवस्था पर चर्चा भी की।

साथ ही उन्होंने सकल घरेलू उत्पाद को बढ़ाने के उपाय भी बताए। अन्त में भारतीय सकल घरेलू उत्पाद में क्षेत्रीय योगदान के आंकड़ों को बताते हुए पांच ट्रिलियन अर्थव्यवस्था के लक्ष्य को प्राप्त करने के उपाय भी बताए। उन्होंने आधारभूत संरचना को बढ़ाने तथा संसाधनों का पूर्ण रूप से उपयोग करने पर चर्चा की।

Editorial

I am very thankful to all the members of Humanities and Social Science Council on the eve of publishing of the fifth edition of our e-newsletter-“ Sanchetna”.

The newsletter is a place where the teachers, students share their thoughts on some particular topics which is purely beneficial for all the people who read it.

Last but not the least I pay my sincere thanks to Academic Head of our Council, Dr. Indira Jugran, Associate Professor, Department of Sanskrit. I also give my sincere thanks to the members of editorial board including Dr. S. S. Kohli, Assitant Professor, Department of Sociology and Dr Meera Kumari, Assistant Professor, Department of Hindi. I am thankful to our Principal, Prof. Renu Negi who gave us her unencumbered support for printing this e-newsletter and conducting the lectures.

Dr. Nishant Bhatt
Assistant Professor

सम्पादकीय

मैं मानविकी एवं समाज विज्ञान परिषद के समस्त सदस्यों का आभार प्रकट करती हूँ। 'संचेतना -ई न्यूजलैटर' का पाँचवाँ संस्करण छपने जा रहा है, इस हेतु मैं डॉ० इन्दिरा जुगरान, एसो० प्रोफेसर संस्कृत विभाग एवं अकादमिक प्रभारी का धन्यवाद प्रकट करती हूँ।

इस परिषद के माध्यम से प्राध्यापक एवं छात्र-छात्राओं का ज्ञान वर्धन होता है। इस परिषद के माध्यम से हम किसी एक विषय वस्तु पर परिचर्चा कर उसके निष्कर्ष पर पहुँच सकते हैं। मैं प्रधान सम्पादक डॉ० निशान्त भट्ट, विभागाध्यक्ष अंग्रेजी विभाग एवं डॉ० सोबन सिंह कोहली, असिस्टेंट प्रोफेसर समाजशास्त्र विभाग का धन्यवाद प्रकट करती हूँ।

अन्त में मैं डॉ० रेनु नेगी, प्राचार्य राजकीय स्नातकोत्तर महाविद्यालय, नई टिहरी का भी धन्यवाद प्रकट करती हूँ जिनके पूर्ण सहयोग से इस ई-न्यूजलैटर 'संचेतना' का सफल प्रकाशन हो सका।

डॉ० मीरा कुमारी
असिस्टेंट प्रोफेसर
हिन्दी विभाग

**The Strategic History Of The Russia-Ukraine
Conflict In Short**

The current war between Russia and Ukraine can be termed as a proxy war between Russia and the Western powers wherein Ukraine is being supported by the west to arrive at their own strategic interests in Eastern Europe. This war which is also being called "Putin's War" is being fought with missiles, drones and special forces on the one hand and social media disinformation campaigns and fake news on the other. This only goes on to create confusion as to what the reality of the situation is, amongst the majority of the people interested in the conflict. In order to understand the current situation between Russia and Ukraine one needs to have a look at the history of strategic relations between the western powers and the Soviet Union/Russia. This will help us in understanding the strategic logic behind the Russian invasion of Ukraine.

At the end of the Second World War which saw allied forces victorious, the two major powers of the time, the United States and the Soviet Union entered "A New World Order" in terms of ideology and strategy and the world shifted from multi-polarity to a Bi-polar

situation. In this bi-polar situation the global politics was dictated by the above mentioned powers and their followers. The western powers led by the United States formed the North Atlantic Treaty Organization (NATO) in April 1949 in order to check the rise of the Soviet Union and Communism and also as a mechanism to prevent further conflicts between the European countries. After the entry of Western Germany in NATO in 1955, the Soviet Union in turn established the Warsaw Treaty Organization, also known as the Warsaw Pact in order to rally its allies behind its aim of checking the western influence in Eastern Europe. Overall "Collective Security" was the main reason for the formation of these above mentioned organizations

In the nineties the Soviet Union dissolved because of various reasons both ideological and economic, and the western powers saw this as an opportunity to further weaken the already declining Russian power which even after the dissolution of the Soviet Union still yielded a tremendous influence over the Central and Eastern European Countries. The Soviet Union had dissolved but its heart-Russia, did not. This was one obstacle which the West desperately wanted to tackle. Another aspect which threatened the western interests was the rise of China.

NATO continued to expand with the entry of Poland in 1999 and many more countries later till 2020, many of which were in the so called Russian sphere of influence. An alarmed Russia now wanted to push the western economic and military pressure westwards, which included sabotaging NATO's attempt to recruit Georgia, Finland, Sweden and of course Ukraine in its fold. NATO's expansion towards east including Ukraine will mean encirclement of Russia from the South.

Ukraine even after its independence in 1991, has ever since been in the Russian sphere of influence. But also ever since, Ukrainian politics and political revolutions have seen proxy wars between the Western powers and Russia, with both powers backing opposing groups and parties. By 2008 there were official talks about a Ukrainian NATO

membership and also attempts by Ukraine to join the European Union after 2014, when pro-western governments started assuming power in Ukraine. An alarmed Russia annexed Crimea from Ukraine in 2014. Besides this, the Donbass region (comprising Luhansk and Donetsk) which has a majority Russian population declared its sovereignty from Ukraine.

This strategic history will give us an understanding of the circumstances that have led to the invasion of Ukraine by Russia in 2022.

The Russia of today is a powerful country with a majority of European countries dependent on it for their energy needs (The Nord Stream). The United Nations and other world powers should try everything in their means to prevent an escalation between the NATO and Russia. All the sides involved should halt their aggressive interventions in Ukraine, or else this situation has the potential to escalate into the largest military conflict since the second world war and might even lead to a nuclear war which would be catastrophic.

In the current state of affairs even as Russia attempts to preserve or boost its global influence, it must stop its intervention in Ukraine. The Western world including the United States must guarantee the existence of Ukraine as a neutral buffer zone in the same manner as the United States had demanded of Soviet Union, the removal of nuclear missiles from its backyard Cuba in the year 1962.

And above all, the voice of the Ukrainians should be heard.

Dr Jayendra Sajwan
Assistant Professor
Department of Geography

A Camp to Chawal-Khet Village

Last month I went to Chawal Khet village, a village near Dhaizar, New Tehri. The journey began from 23rd of March with friends and teachers at 12 noon. After reaching the destination, the view of the village seemed to

be full of greenery and pine trees and the raw



path to the village was under construction. After reaching the stay at the Government Upper Primary School, we prepared our meal together. Next morning we visited other areas of the village and met with people of the village also. They used to do subsistence farming of wheat and also animal husbandry and some of them were depend on shops as their source of monthly earnings. Basically the society was agrarian society and the people used to communicate mostly in Garhwali language and have lack of medical and irrigation facilities. Besides this we did activities like collection of plastics and garbage and cleaning of roadsides.



As very well said that 'culture is a learnt behaviour' the camp had given me an opportunity to conjoin myself with culture of Garhwal and a platform to interact and communicate with village people and Society. In the valedictory function, activities like dancing and singing on folk music of Garhwal were performed. The performance or

traditional dresses for the folk dance and presented the Herbals culture which gave immense pleasure to the audience. Besides this, professes also visited the camp to communicate and interact with students. After spending seven days at the camp, we went back to our homes. But it was a great experience for me. I involved in activities like management and leadership and gain practical knowledge of my subjects. The camp had given me a bag of memories and a platform to learn the art of living.

Shivanshi Uniyal
BA II

WHY I BELIVE IN Rama(Four REAL LESSON FROM RAMAYANA)

Do you believe in Lord Rama ?

Not religiously but practically!

These days we find the need to clarify this because everyone want's Ramrajya. Nobody wants to be like Rama.

Four practical things we can learn from Lord Rama.

1. RESPECT YOUR PARENT'S

Today, we live in such times where parents send their kids to boarding school, And those kids send their parents to an old age home.It is difficult to connect with each other. In spite of having good intention we became villain in their eyes.

Dashrath wanted Loard Rama to be the king and Rama knew Dashrath would not be unjust on purpose even then because of the circumstance Rama had to bear 14 years of vanvas.

Circumstances and situations, they're these things which make our close ones the villians of our story but we call prince Rama as Lord Rama because he tried to understand his father's actions.

Everyone sees life from their own perspective but seeing things from a different perspective is not everyone's cup of tea.

Can we try to be a better son or daughter like Lord Rama?

2. IMPORTANCE OF CO-OPERATION

Vanvas is a Metaphar . Life after education is a corparate vanvas where we meet all kinds of people!Rama is a divine entity because we

can restart from zero . But he had to put his ego aside and take help whether it was Jatayu,the Vanar Sena or Shabri.

Till the time we are in a protected zone whether it is home , our college or our school we are in our comfort zone, we have the freedom to behave as we wish but roaming like a prince/ princess in the outside world? That is an option we really don't have , we need help if we want to survive in this world and the best human is the one who respects a janitor and a CEO the same without distinction.

Can we try to respect every single person?

3. A PROMISE IS A PROMISE

Friendship and toxic friendship-only one thing distinguishes them.Toxic friendship is completely one sided there are friends who only want to take undue benefit of you either because of your skills or your social connections. They stay friends with you for some personal gain they are not your true friends!

Sugreev asked for help to win his kingdom back. He promise to take Lord Rama to Lanka in return but as soon as he won his kingdom back Sugreev forgot is promise.

People say that your network is your net worth but the network that wants a favour from you but doesn't come forward to help you in times of trouble. That is not your network. Some friends are parasites who believ in one sided friendship.

Can we learn to identify such toxic friends?

4. TRUST YOUR PARTNER

We know the sacrifices Lord Rama had to do bring Sita home. How he went from north India to Lanka ! How he made Ram Setu with the help of Vaanar Sena. At the same time we cannot forget that Ma Sita tolerated Ravan's mental torture as well she was patient to believe that Lord Rama would save her at any cost. In a partnership whether it is a business partnership or a romantic one, trusting your partner is like winning half the battle.

Can we bring trust like Rama and Sita in our relationships?

Priyanshu
BA II Year

संचेतना

विवेक गुप्त आस्था, आस्था सहित विवेक

मानविकी एवं समाज विज्ञान परिषद

HUMANITIES AND SOCIAL SCIENCE COUNCIL

राजकीय स्नातकोत्तर महाविद्यालय नई दिल्ली, दिल्ली गढ़वाल

मासिक ई न्यूजलैटर

अंक VI, मई 2022

संपादकीय

प्रिय पाठकों, छात्रों !

संचेतना का छठा अंक आपके सामने है। आज की बाजारवादी अर्थव्यवस्था के इंस्टेंट युग में विचार, कल्पना, अभिव्यक्ति और हमारे बोध का स्वरूप भी बहुत कुछ रेडीमेड हो गया है यहां तक कि अपने नितांत निजी संबंधों में भी हम उधार की छिछली और सतही अभिव्यक्तियों से काम चलाते हैं। ऐसे में संचेतना का मुख्य उद्देश्य अपने छात्र छात्राओं में अभिव्यक्ति कौशल का विकास करने के साथ ही उन्हें अपने आसपास के मुद्दों पर स्वतंत्र चिंतन के लिए प्रेरित करना है। इस संदर्भ में संचेतना का कार्य भले ही छोटा हो लेकिन महत्वपूर्ण है। इसी अंक में बीए द्वितीय वर्ष के छात्र प्रियांशु सजवान का आलेख शिक्षा व्यवस्था में परीक्षाओं की भूमिका पर नए सिरे से विचार की आवश्यकता को रेखांकित करता है। शिवांशु उनियाल ने अर्थशास्त्र विषय की प्रासंगिकता और महत्व को अपने आलेख में बताया है। डॉ. श्रद्धा सिंह ने अपने लेख में आज के जीवन में पैदा बोर्डम, उब, बेचैनी और निरर्थकताबोध से मुक्ति के उपाय सुझाती हैं। इस अंक से हम एक नया कॉलम 'इस महीने का शब्द' शुरू कर रहे हैं जिसमें ज्ञान के अलग-अलग अनुशासनों से प्रत्येक माह एक नया पारिभाषिक शब्द देंगे जिससे पाठक लाभान्वित होंगे। आशा है आप अपनी प्रतिक्रियाओं और सुझावों से हमें अवगत कराएंगे ताकि हम संचेतना को और बेहतर बना सकें।

मैं हवाओं का रुख तो नहीं बदल सकता,
पर मैं अपनी रहगुजर तो बदल सकता हूँ।
शुभकामनाओं सहित संजीब नेगी।



Sixth Monthly Lecture by Dr Nishant Bhatt on Topic- English: Today and Tomorrow

कला और मानविकी परिषद की माह अप्रैल की गतिविधियां

डॉ० निशांत भट्ट विभागाध्यक्ष, अंग्रेजी विभाग द्वारा 'आधुनिक अंग्रेजी: वर्तमान एवं भविष्य' विषय पर व्याख्यान दिया गया। उन्होंने अंग्रेजी भाषा के इतिहास पर प्रकाश डालते हुए बताया कि अंग्रेजी भाषा 1700 शताब्दी की भाषा है तथा यह भाषा औद्योगिक क्रांति से उत्पन्न हुई भाषा है और तकनीकी विकास से अंग्रेजी के शब्दों की समाज में आवश्यकता पड़ी।

उन्होंने अंग्रेजी भाषा की विशेषताओं पर चर्चा करते हुए बताया कि अंग्रेजी भाषा एक सरल, लचीली एवं स्पष्ट भाषा है। साथ ही उन्होंने अंग्रेजी भाषा की विशेषताओं पर चर्चा करने के साथ-साथ बताया कि अंग्रेजी भाषा 360 मिलियन लोगों में पूरे विश्व में बोली जाती है और 118 देशों में पढाई जाती है एवं यह भाषा विचारों का आदान-प्रदान करने के लिए पूरे विश्व में बोली जाती है।

अंग्रेजी भाषा के दायरों को बताते हुए उन्होंने भाषा को विज्ञान, गणित, तकनीकी एवं पर्यटन की भाषा बताते हुए अंग्रेजी भाषा के महत्व पर चर्चा की और बताया कि अंग्रेजी एक वैश्विक एवं इंटरनेट की भाषा है।

जीवन के प्रति बच्चों जैसा उत्साह बनाए रखना जरूरी है

डॉ० श्रद्धा सिंह, समाजशास्त्र विभाग

अक्सर देखा जाता है कि बच्चों में हर चीज के प्रति अत्यधिक उत्साह होता है। सूबह उठने से लेकर रात को सोने तक वे हमेशा ऊर्जा से भरे रहते हैं। उनमें एक-दूसरे से प्रतिस्पर्धा का भाव भले हो, किंतु वे अपने दिल के भीतर नफरत सींचकर नहीं रखते। वे कुछ भी नया जानने के लिए आतुर रहते हैं। उन्हें न तो अनदेखे भविष्य की चिंता होती है और न ही वे अपनी आत्मा पर बीते हुए कल का बोझ ढोना पसंद करते हैं। पर, हमारे जीवन का दूसरा पहलू यह है कि जैसे-जैसे हम बड़े और परिपक्व होते हैं। वैसे-वैसे इस उत्साह, मस्ती और जिंदादिली से वंचित होते जाते हैं। स्कूल-कॉलेज की शिक्षा पूरी करने के बाद जब जीवन के वास्तविक संघर्षों से दो-चार होना पड़ता है तो जीवन के प्रति उत्साह में अचानक कमी महसूस होने लगती है।

कई समाजशास्त्रियों, दार्शनिकों और सामाजिक मनोवैज्ञानिकों ने अपने-अपने तरीके से इस उत्साहहीनता की व्याख्या की है और इससे मुक्त होने के उपाय भी बताए हैं। वस्तुतः उन विद्वानों ने इस समस्या को 'अलगाव' (अर्थात लगाव न होना) का नाम दिया है जो अंग्रेजी शब्द (alienation) का हिंदी समतुल्य है। कार्ल मार्क्स जैसे समाजशास्त्री ने इसकी व्याख्या अर्थव्यवस्था के आधार पर की है तो ऐरिक फ्रॉम जैसे मनोवैज्ञानिकों ने व्यक्ति के 'मन के स्तर' पर। मैक्स वेबर ने इसकी व्याख्या समाजशास्त्रीय

तथा प्रशासनिक दृष्टिकोण से की है, तो हीगेल,कीर्कगार्द और सार्त्र जैसे विचारक इस समस्या को दर्शन की सूक्ष्मताओं के स्तर पर विश्लेषण करते हैं। मैं कोशिश करूँगी कि इन सभी बातों को समाहित करते हुए सरल भाषा में जीवन को बेहतर बनाने के लिए उपयोगी सूत्र एकत्रित करूँ।

पहला सूत्र यह है कि जीवन में रचनात्मकता या 'क्रियेटिविटी' की कुछ न कुछ संभावना बनी रहनी चाहिए। इस बिंदु पर विशेष रूप से कार्ल मार्क्स और मैक्स वेबर ने बल दिया है। मार्क्स ने कहा है कि मनुष्य तभी तक मनुष्य रहता है जब तक वह अपनी छठी इंद्रिय (sixth sense) का प्रयोग करता रहता है। मार्क्स के दर्शन में छठी इंद्रिय शब्द का प्रयोग रचनात्मक क्षमता के अर्थ में किया गया है। उन्होंने बताया है कि जब तक कोई व्यक्ति किसी भी तरह के रचनात्मक कार्य से जुड़ा रहता है, उसमें सार्थकता का अहसास बना रहता है। इस सार्थकता को बनाए रखने का एक ही तरीका है कि हमें अपने जीवन का समय रचनात्मक कार्यों में गुजारना चाहिए।

दूसरा सूत्र यह है कि जीवन में कोई न कोई उद्देश्य विद्यमान होना चाहिए। यह जरूरी नहीं है कि उद्देश्य बहुत बड़ा हो। जरूरी सिर्फ इतना है कि जीवन में उद्देश्य विद्यमान होना चाहिए। किसी विद्यार्थी के लिए परीक्षा में सफल होना उद्देश्य हो सकता है तो किसी नेता के लिए चुनाव जीतना। किसी का उद्देश्य धार्मिक क्रियाकलाप हो सकता है तो किसी कर्मचारी के लिए आय-वृद्धि तथा पदोन्नति हासिल करना उद्देश्य हो सकता है।

तीसरा सूत्र यह है कि व्यक्ति को किसी-न-किसी सामाजिक कार्य से जुड़े रहना चाहिए। इस सूत्र की प्रभावशाली व्याख्या प्रसिद्ध मनोवैज्ञानिक ऐरिक फ्रॉम ने कार्ल मार्क्स के वैचारिक सूत्रों के आधार पर की है। मार्क्स ने कहा था कि व्यक्ति को गहरा संतोष तभी मिलता है जब उसे महसूस होता है कि उसने अपने समाज के लिए कोई योगदान दिया है। फ्रॉम ने अमीर लोगों को सलाह दी है कि अगर वे वास्तविक संतोष हासिल करना चाहते हैं तो अपने समय और धन का कुछ हिस्सा उन लोगों पर खर्च करें जो आर्थिक प्रतिस्पर्धा में पीछे छूट गए हैं और गंभीर रूप से वंचित हैं। ऐसा करने से उन वंचित व्यक्तियों की तो जो मदद होगी, सो होगी, उससे अधिक मदद उन अमीरों की होगी जो अत्यधिक धन कमाने के बावजूद अपनी सार्थकता की अनुभूति के लिए कोई वजह तलाश पाते हैं।

एक शिक्षक विद्यारूपी धन ही अपने छात्रों को देता है चाहे प्राचीन गुरुकुल की व्यवस्था हो या आज की आधुनिक प्रणाली विद्यारूपी धन को देने पर एक शिक्षक, आचार्य को परम संतोष एवं उत्साह की अनुभूति होती है। इसलिए वेदशास्त्रों में भी कहा गया है विद्या को संचय नहीं बाँटना चाहिए:-

न भ्रातृभाज्यं न च भारिकारी।

व्यये कृते वर्धते एवं नित्यं, विद्याधनं सर्वधनं प्रधानम्।।

अपूर्वः कोऽपि कोशोऽयं विद्यते तव भारति।

व्ययतो वृद्धि मायाति क्षयमयाति स।।

वास्तव में ये खजाना सचमुच अदभुत है, जो खर्च करने से बढ़ता है, और जमा करने से कम होता है। जीवन में उत्साह बनाए रखने के कुछ और भी सूत्र हैं। पहला यह है कि उम्र चाहे

जितनी भी हो जाए, व्यक्ति को अपने भीतर के बच्चे को मरने नहीं देना चाहिए। अपने भीतर के बच्चे को जिंदा रखने का अर्थ सिर्फ इतना है कि संकोच और झिझक को खुद पर हावी नहीं होने देना चाहिए। इसी में दूसरा सूत्र यह है कि अपनी व्यस्त से व्यस्त दिनचर्या में भी कुछ समय अच्छे दोस्तों और रुचियों के लिए जरूर निकालिये।

वास्तव में उत्साह से भरा जीवन एक ऐसा वरदान है जिसका महत्व उन्हें ही समझ आता है जो इस वरदान से वंचित हो गए हैं।

ब्रेल लिपि अथवा ब्रेल पद्धति

डॉ० मीरा कुमारी, हिन्दी विभाग

ब्रेल पद्धति एक तरह की लिपि है, जिसको विश्व भर में नेत्रहीनों को पढ़ने और लिखने के लिए व्यवहार में लाया जाता है। इस पद्धति का आविष्कार 1821 में एक नेत्रहीन फ्रांसीसी लेखक लुई ब्रेल ने किया था। यह अलग-अलग अक्षरों, संख्याओं और विराम चिह्नों को दर्शाते हैं। ब्रेल के नेत्रहीन होने पर उनके पिता ने उन्हें पेरिस के रॉयल नेशनल इंस्टीट्यूट फॉर ब्लाइंड चिल्ड्रेन में भर्ती करवा दिया। उस स्कूल में 'वेलन्टीन होउ' द्वारा बनाई गई लिपि से पढ़ाई होती थी, पर यह लिपि अधूरी थी। इस विद्यालय में एक बार फ्रांस की सेना के एक अधिकारी कैप्टन चार्ल्स बार्बियर एक प्रशिक्षण के लिए आये और उन्होंने सैनिकों द्वारा अंधेरे में पढ़ी जाने वाली 'नाइट राइटिंग' या 'सोनोग्राफी' लिपि के बारे में व्याख्यान दिया। यह लिपि कागज पर अक्षरों को उभारकर बनायी जाती थी और उसमें 12 बिन्दुओं को 6-6 की दो पंक्तियों में रखा जाता था, पर इसमें विराम चिह्न, संख्या, गणितीय चिह्न आदि नहीं होते थे। 'ब्रेल' को वहीं से यह विचार आया। लुई ने इसी लिपि पर आधारित किन्तु 12 के स्थान पर 6 बिन्दुओं के उपयोग से 64 अक्षर और चिह्न वाली लिपि बनाई। उसमें न केवल विराम चिह्न बल्कि गणितीय चिह्न और संगीत के नोटेशन भी लिखे जा सकते थे। यही लिपि आज सर्वमान्य है। लुई ने जब यह लिपि बनाई तब वे मात्र 14 वर्ष के थे। सन् 1824 में पूर्ण हुई यह लिपि दुनिया के लगभग सभी देशों में उपयोग में लायी जाती है। इसमें प्रत्येक आयताकार सेल में 6 बिन्दु यानि डॉट्स होते हैं, जो थोड़े-थोड़े उभरे होते हैं। यह दो पंक्तियों में बनी होती है। इस आकार में अलग-अलग 64 अक्षरों को बनाया जा सकता है। सेल की बायीं पंक्ति में ऊपर से नीचे 1,2,3 बने होते हैं, इसी तरह दाईं ओर 4,5,6 बने होते हैं। एक डॉट की औसतन ऊंचाई 0.02 इंच होती है। इसको पढ़ने की विशेष तकनीक होती है। ब्रेल लिपि को पढ़ने के लिए अंधे बच्चों में उतना ज्ञान होना आवश्यक है कि वे अपनी उंगली को विभिन्न दिशाओं में सेल पर घुमा सकें।

वैसे विश्व भर में इसको पढ़ने का कोई मानक तरीका निश्चित नहीं। ब्रेल लिपि को स्लेट पर भी प्रयोग में लाया जा सकता है। इसके अलावा इसे ब्रेल टाइपराइटर पर भी प्रस्तुत किया जा सकता है। आधुनिक ब्रेल रिफ्रैक्ट को 8 डॉट्स के सेल में विकसित कर दिया गया है, ताकि अंधे लोगों को अधिक से अधिक शब्दों को पढ़ने की सुविधा उपलब्ध हो सके। 8 डॉट्स वाले ब्रेल लिपि सेल में अब 64 के बजाय 256 अक्षर, संख्या और विराम चिह्न के पढ़ सकने की सुविधा उपलब्ध है। ब्रेल पद्धति को

वर्णमाला के वर्णों को कूटरूप में निरूपित करने वाली सबसे प्रथम प्रचलित प्रणाली कह सकते हैं, किन्तु ब्रेल लिपि नेत्रहीनों के पढ़ने और लिख सकने के उपाय का प्रथम प्रयास अध्याय नहीं है। इससे पहले भी 17वीं शताब्दी में इटली के जेसूट फ्रांसिस्को 'लाना' ने नेत्रहीनों के लिखने पढ़ने को लेकर काफी कोशिश की थी।

Significance of Studying Economics

Shivanshi Uniyal, B.A. II

For over a century Economics as a subject has great significance. Economics is derived from the Greek words "Oikos" and "Nomos" which means "a house" and "to manage" respectively. The Greek applied this term to the city state which they called "Polis". Aristotle described economics as "household management". It gives us knowledge about how industries, businesses and government work for the interest of public and how fluctuations in prices of goods and income of the consumer affect the market forces.

Besides this, the subject tells us that to become a rational man in society, it is necessary to make arrangements for food, shelter and clothes and to make choices under conditions of scarcity of resources. For this it is essential to generate income and to meet expenses. Our activities to generate income are termed as economic activities, wherein lies the origin and development of Economics as a subject matter.

Adam Smith, father of Modern Economics defined Economics as "Science of Wealth". Economics has a great dependency on mathematics and statistics in its pursuit of finding answers of social problems so as to increase welfare of the people. For example, the development of Human Development Index which is a tool for mapping social and economic problems and educational development of the country.

Another eminent personality who tried to define economics is Alfred Marshall who said "economics is the study of mankind in the ordinary business of life and to examine that part of individual and social action which is mostly closely connected with the attainment and with the use of material requisites of well-being." Thus economics also tells that how human satisfies his unlimited wants with limited resources which have alternative uses and out of these alternative uses of scarce resources the society has to make choices. This problem of scarcity and choices forms the core of Economics.

Whereas, according to professor Robbins Economics is "a science which studies human behavior as relationship between ends and scarce means which have alternative uses." Therefore, studying economics is useful to

understand the corporate world, markets, social problems, environmental activities, legal and political activities, decision making and allocation of resources.

Why Examinations Fail Our Students ?

Priyanshu Singh Sajwan, B.A. II

Our education system is turning us into mental slaves and the proof is our EXAMS! From students to teachers we all are frustrated with exams (FRUSTRATED!), but why?, what is that one fault in our education system that needs to be taken care of as soon as possible? If we want our students to become better learners what do we need to do? (Let us understand why exams fail our youth). We're going to implement a New Education Policy soon. Our ideas need to reach the decision makers.

(PROBLEM NO.1-NO CONCEPTUAL LEARNING)

What's wrong with exams? This is because exams do not focus on conceptual learning. There is a line in the film - 3 Idiots (chabuk ke dar sea sher bhe kursi par baithna sikh he jata hai lekin hum us sher ko well trained kahate hai 'well educated' nahi).When we all heard this line we clapped loudly for sure. But 13 years have passed since the release of the movie. Did we change the structure of our exams? No....Not at all. People often argue, what other option do we have? Are there any better options to evaluate our children? The answer is this.... it is called Bloom's Taxonomy which divides our learning process into 6 different stages. We begin by reading and understanding things, the focus is on understanding and on application of learning. Then application of knowledge is analyzed. The result is evaluated and the learning process is concluded with creativity. For example: Newton's laws of motion. Instead of learning this in a closed classroom we can learn this concept in a ground. We are taught this repeatedly that whatever our textbooks say is the absolute truth but if what is written in the textbook is the truth then why are our textbooks becoming outdated. Why don't we update the method of learning?

(PROBLEM NO.2-EXAM FIRST MINDSET)

What's wrong with exams? Because after we write the exams we forget everything that we have learned. We give so much importance to marks scored in exams that some students end up cheating. 64% of the students globally have candidly admitted that they have cheated some times in exam. The remaining 36% are LYING!!! Think about it!! The marks that you can achieve by cheating....are those marks really that genuine? You can cheat in exam! But you can't cheat life! The students who use dishonest methods to pass in exams end up failing somewhere in life because their focus is on certificate. (REMEMBER YOU CAN LIE ON

YOUR CV BUT YOU CANNOT LIE AT WORK) The marks you scored in your exams can only take you to the interview stage but whether you will be given a job or not and whether you will progress in your job.... depends on your skills and you can learn many useful skills from online learning portals like UNACADEMY. UNACADEMY is one of the most trusted app for learning and for expanding your knowledge. Unacademy is an online platform that makes both learning and teaching easy with its educational videos and lecture. It was founded in the year 2010 with videos uploaded on YouTube, but it officially got launched in the year 2015. You can give your creativity a chance to breathe freely here and can learn at your own pace. There is a lot of information available online but this information is not organized properly. I get value in small chunks on Unacademy and that is why i love Unacademy.

(PROBLEM NO. 3-WE ALL ARE DIFFERENT)

Rahul Dravid is one of my favorite cricketer. In an interview, he said "exams are not the only way to judge boy and girls". Why did he say that? All student are not same, some students learn by experiencing things, some learn by observing others, some students study while listening to music.. just think about it. Does our education system give an equal opportunity to all these different type of students? Or does it give a preference to students who are good at memorizing things. The fact is, all of us come from different backgrounds but only one type of learner gets an advantage in exams.

(PROBLEM No.4-THE RAT RACE)

What's wrong with exams? Though exams prepare us for competition, it isn't a healthy one. I am talking about comparison based competition. When my father was a student, getting 90% was a big deal because 90% was a tough job and very few students got 90% marks and above. But now, getting 90% seems like no big deal. WHY? Because we never see the number of people behind us... we only see how many people are ahead of us. This attitude keeps us unhappy life-long because we can't tolerate other getting better marks than us. Rather than crying about my marks, my family was more concerned about my best friend's marks. This never improved my marks but it ended up spoiling my friendship for sure.

Indian Economy: A Story of Growth

Arti, MA 1st Sem

India is a middle income developing market economy. It is the world's fifth largest economy by nominal GDP and the third largest by purchasing power parity (PPP). Since independence in 1947 until 1991, successive governments promoted protectionist policies, with extensive state

intervention and economic regulation. This *dirigisme* is characterized in the form of **License Raj**. The end of the Cold War and the acute balance of payments crisis in 1991 led to the adoption of a policy of broad economic liberalization of India.

At the beginning of the 21st Century annual average GDP growth rate was 6% to 7% and during the 2008 global financial crisis, the economy faced a mild slowdown. India undertook stimulus measures (both fiscal and monetary) to boost growth and generate demand. In subsequent years, economic growth revived. According to the World Bank, to achieve sustainable economic development, India must focus on public sector reform, infrastructure, agricultural and rural development, removal of land and labor regulations, financial inclusion, spur private investment on public health, spur private investment on exports, education and public health.

Starting in 2012, India entered a period of declined growth, which slowed to 5.6%. Other economic problems also became apparent: a plunging Indian rupee, a persistent high current account deficit and slow industrial growth.

Indian economic recovery started in 2013-14 when the GDP growth rate accelerated to 6.4% from the previous year's 5.5%. The acceleration continued through 2014-15 and 2015-16 with growth rates of 7.5% and 8% respectively. For the first time since 1990, India grew faster than China which registered 6.9% growth in 2015. However the growth rate subsequently decelerated to 7.1% and 6.6% in 2016-17 and 2017-18 respectively. This was partly because of the disruptive effects of government policies of 2016 and in particular of banknote demonetisation and the implementation of Goods and Services Tax.

COVID-19 affected Indian economy, from April to June 2020, India's GDP dropped by a massive 24.4%. According to the latest National Income Estimates, in the second quarter of the 2020-21 financial year, the economy contracted by a further 7.4%. The recovery in the third and fourth quarters was still weak, with GDP rising by 0.5% and 1.6% respectively. This means that the overall rate of contraction in India was (in real terms) 7.3% for the whole 2020-21 year.

Word of the Month

जी.डी.पी. (सकल घरेलू उत्पाद) – किसी देश की भौगोलिक सीमा के अन्तर्गत एक वर्ष में उत्पादित अन्तिम वस्तुओं एवं सेवाओं के मौद्रिक मूल्य को 'सकल घरेलू उत्पाद' कहते हैं।

यह न्यूज लेटर पूरी तरह अव्यवसायिक है तथा इसका प्रकाशन मानविकी एवं समाज विज्ञान परिषद के सदस्यों द्वारा छात्र हित में किया गया है।

संचेतना

विवेक युक्त आस्था, आस्था सहित विवेक

मानविकी एवं समाज विज्ञान परिषद

HUMANITIES AND SOCIAL SCIENCE COUNCIL

राजकीय स्नातकोत्तर महाविद्यालय नई दिल्ली, दिल्ली गढ़वाल

मासिक ई न्यूजलैटर

अंक VII, जून 2022

संपादकीय

प्रिय पाठकों! संचेतना का सातवां अंक आपके हाथों में है। पिछले अंक से हमने संचेतना को शहर के गणमान्य व्यक्तियों और बुद्धिजीवियों तक पहुंचाने का निर्णय लिया और उन तक संचेतना का अंक पहुंचाया भी। उन सब ने छात्र-छात्राओं की रचनात्मक प्रतिभा को मंच देने के लिए इस लघु प्रयास की सराहना की। यह हमारे लिए संतोष की बात है। इसी क्रम में इस अंक में महाविद्यालय की छात्रा मनिका ने प्रख्यात पर्यावरणविद श्री विजय जड़धारी जी का साक्षात्कार लिया है। छात्र-छात्राएं विभिन्न विषयों में शोध प्रविधि के बारे में पढ़ते हैं लेकिन संचेतना में वे साक्षात्कार कैसे लिया जाता है उसकी तकनीक क्या है आदि के बारे में व्यवहारिक धरातल पर सीखते हैं। उत्तराखंड में पलायन एक बड़ी समस्या के रूप में चिन्हित किया गया है। इस समस्या पर युवा क्या सोचते हैं इसको सौरव पंवार ने अपने आलेख में रेखांकित किया है। 5 जून पर्यावरण दिवस के अवसर पर देश भर में पर्यावरण जागरूकता के कार्यक्रम आयोजित किए गए। हमारी परंपरा और दर्शन में मनुष्य इस विशाल ब्रह्मांड का एक हिस्सा भर है जबकि पाश्चात्य आधुनिक विज्ञान और दर्शन में मनुष्य इस प्रकृति का मालिक है। इसी पर एम. ए. संस्कृत की छात्रा शिवानी ने 'वेदों में पर्यावरण विषय पर लेख लिखा है। अवार भाषा के प्रसिद्ध रूसी कवि रसूल हमजातोव ने अपनी प्रसिद्ध पुस्तक 'मेरा दगिस्तान' में लिखा है - "पहाड़ी आदमी को दो चीजों की रक्षा करनी चाहिए- अपनी टोपी और अपने नाम की। टोपी की रक्षा वही कर सकेगा जिसके पास टोपी के नीचे सिर है। नाम की रक्षा वही कर सकेगा जिसके दिल में आग है।" संचेतना टोपी के नीचे सिर और दिल में आग को बचाए रखने का एक छोटा प्रयास है। उम्मीद है कि इस प्रयास को आप सभी का प्यार और सहयोग मिलेगा।

आपका ही संजीव नेगी।

श्रीलंका में आर्थिक संकट का एक विश्लेषण डॉ० हर्ष सिंह असिस्टेंट प्रोफेसर, अर्थशास्त्र

एक दे"ी का शक्ति"ाली होने का आधार उसकी प्रति व्यक्ति आय एवं जी०डी०पी० वृद्धिदर होती है। वि"व के दे"ों को प्रति व्यक्ति आय या आर्थिक सम्पन्न के आधार पर विकसित, विकास"ील एवं अल्प विकसित श्रेणी में बांटा जाता है। विकसित दे"ों जैसे फ्रांस, अमेरीका, जापान आदि की प्रति व्यक्ति आय बहुत अधिक है, जबकि विकास"ील दे"ों जैसे भारत, चीन, बांग्लादे"ी, ब्राजील आदि प्रति व्यक्ति आय विकसित दे"ों की अपेक्षा कम है। वि"व में आर्थिक रूप से पिछड़े दे"ी उच्च आर्थिक विकास दर को प्राप्त करने के लिए संघर्षरत है, ताकि विभिन्न आर्थिक समस्याओं जैसे भुखमरी, बेरोजगारी, आर्थिक असमानता आदि से निजात मिल सके। इन दे"ों के सामने सबसे बड़ी चुनौती पर्यावरण संरक्षण के साथ उच्च आर्थिक विकास दर प्राप्त हासिल करना है। इतिहास इस बात का साक्षी है कि पिछले 100 वर्षों में अनेक आर्थिक संकट पैदा हुए। 1929 की वि"वव्यापी मंदी हो, 2008 का वित्तीय संकट अथवा 2019 में कोविड-19 के कारण उत्पन्न आर्थिक संकट इन सभी आर्थिक एवं गैर आर्थिक घटनाओं ने वि"व अर्थव्यवस्था को बुरी तरह प्रभावित किया। कोविड-19 ये प्रभावित विभिन्न दे"ों की अर्थव्यवस्थायें जहां एक ओर इस आर्थिक संकट से उभरने की ओर अग्रसर है, वहीं दूसरी ओर हमारा पड़ोसी दे"ी एक बड़े राजीतिक एवं आर्थिक संकट के दलदल में फसा हुआ है। श्रीलंका की आबादी 2.19 करोड़ एवं प्रति व्यक्ति आय 3682.04 अमेरिकी डॉलर है। 2020-21 में श्रीलंका की अर्थ व्यवस्था में सेवा क्षेत्र का 58.2 प्रति"त, औद्योगिक क्षेत्र का 27.4 प्रति"त एवं कृषि क्षेत्र का 7.4 प्रति"त योगदान था। कोविड-19 के बाद बन्द पड़ी आर्थिक गतिविधियों एवं गलत आर्थिक नीतियों जैसे कर की दरों में कटौती परिणामस्वरूप राजस्व में भारी कमी एवं राजकोषीय घाटे में वृद्धि, आयतों में वृद्धि के परिणामस्वरूप विदे"ी विनियमन की कमी, और्गनिक

कला और मानविकी परिषद की माह अप्रैल की गतिविधियां

खेती को बढ़ावा देने के फलस्वरूप खाद्यानों की भारी कमी तथा मांग एवं आपूर्ति में असन्तुलन के कारण उत्पन्न मुद्रास्फीति ने वहां की अर्थ व्यवस्था को आर्थिक संकट के जाल में धकेल दिया। इस आर्थिक संकट से उभरने के लिए श्रीलंका को एक बड़े आर्थिक पैकेज की आवश्यकता है, लेकिन इस आर्थिक संकट से उभरने के लिए श्रीलंका को सर्वप्रथम राजनैतिक स्थिरता को बहाल करना होगा।

NATIONAL EDUCATION POLICY, 2020

Dr. Nishant Bhatt
Assistant Professor, English

The main features of new education policy can be understood by four things.

First, is to ensure universal access at levels of school education. Second, is to give early education with new curricular and pedagogical structure. Third, is to attain foundational literacy and numeracy. Fourth, is to make reforms in school curricula and pedagogy. Fifth, is multilingualism and the power of language.

The first point strongly emphasizes to be at all levels from pre school to secondary. Open learning for 3rd, 5th and 8th grade respectively will be conducted through NIOS and state open schools, secondary education programs equivalent to grades 10th and 12th, vocational courses and other programs are proposed for achieving this target.

The second point lays emphasis on early education, 10+12 structure of school curriculum is to be replaced by 5+3+3+4 curricular structure corresponding to ages 3-8, 8-11, 11-14 and 14-18.

The third point warrants attainment of universal foundational literacy and numeracy in all primary schools for all learners grade by 3 by 2025.

The fourth point aims for holistic development of learners by equipping them with the key 21st century skills, reduction in curricular content to enhance essential learning and critical thinking, and greater focus on experimental learning.

The fifth point emphasizes on local language/regional language/mother tongue as the medium of instruction at least till grade 5, but preferably till grade 8 and beyond. Sanskrit is to be offered at all levels of school and higher education as

an option for students, including the three language formula. Other classical languages and literatures of India are also to be available as options.

YouTube Creators: From Gig Economy To Employment.

Vaibhav Singh Rawat
Assistant Professor, Economics

Circa 2005,

“Alright, so here we are in front of the, uh, elephants, and the cool thing about these guys is that, is that they have really, really, really long, um, trunks, and that’s, that’s cool, and that’s pretty much all there is to say”.

Aforementioned is the transcript of the first video uploaded on the YouTube titled, “*Me at the zoo*”, by its co-founder Jawad Karim. A website made for video sharing has become such a financial behemoth since its acquisition by Google in 2006. Though no one can question its contribution in the lexicon of cultural zeitgeist but what’s surprising is the strides it has made in being a legitimate player for employment generation in the world economy.

This can be particularly deduced from the recent Oxford Economics study titled, “*A Platform for Indian Opportunity: Assessing the Economic, Societal and Cultural Impact of YouTube in India*”. The study utilized 3 anonymized surveys with respondents comprising of 4032 of India based users, 1203 creators and 1020 business. The data collected then captured the impact of YouTube ecosystem in particular its contribution to employment and GDP of India.

Alongside it gives a new nomenclature of “*creative entrepreneurs*” to the creators that meet at least one of the following criteria, i) Earn income directly from YouTube and/or wider income helped by their YouTube presence, ii) Permanently hire paid employees to work on their channel, iii) Have more than 10,000 subscribers to their largest channel.

The study showed that the YouTube creative ecosystem contributed INR 6,800 Cr to the Indian economy in 2020 and supported 6,83,900 fulltime equivalent jobs.

The YouTube creative ecosystem’s total economic impact can further be subdivided into **direct**, **indirect**, **induced**, and **catalytic impacts**.

Wherein **direct economic impact** of the YouTube’s ecosystem in India refers to the profits and earnings of

the creators which nothing but the revenue the platform redistributes to its creators, which can include ad sales, payouts from eight alternative monetization features such as channel memberships and Super Chat, and royalty payments paid to music and media companies.

The **indirect economic** impact of the YouTube's ecosystem in India entails the money spent on goods and services by the creators for producing new content for YouTube which creates a supply chain of its own.

When creators and other employees of YouTube's creative ecosystem, or its supply chain (including video editors, graphic designers, producers etc.), go on to spend their earnings. This activity creates a further **induced economic impact** in the economy.

In addition, the revenues that YouTube creators earn from other sources that are stimulated by their YouTube presence. This includes increased product sales, brand partnerships, or live performance engagements. Like Ganesh Gopal Pie whose YouTube channel Don't Memorise has more than 23 lakhs subscribers, the visibility he got from YouTube helped him license his content to various EdTech companies (Vedantu, Oxford University Press etc.) in India, while ad revenue and the YouTube Learning Fund helped him create even more content for his students, his presence on YouTube also helped him sell affordable micro-courses through DontMemorise.com. These "off-platform" revenues create a **catalytic impact** on the economy, stimulating additional indirect and induced impacts through supply chain activity and wage expenditure.

Thus the growing YouTube community is generating a huge amount of economic value in India, not just for creators but also for businesses, employees, and consumers across the country.

पर्यावरण प्रभाव आकलन
विकास बहुगुणा
एम0ए0 II सेमेस्टर

देश में विकास करने के लिए भारत सरकार ने पिछले कुछ वर्षों में कई नई योजनाओं की शुरुआत की, जिसके कारण पर्यावरण अधिक मात्रा में प्रदूषित होने लगा। पर्यावरण की होने वाली हानियों को देखते हुए सरकार तथा आम जनता विकास की परियोजनाओं के प्रभाव को लेकर चिंता जताने लगी। विकास परियोजनाओं के कारण पर्यावरण की होने वाली हानियों

का आंकलन करने के लिए पर्यावरण प्रभाव आकलन (EIA) का गठन किया गया।

संयुक्त राष्ट्र पर्यावरण (UNEP) के अनुसार 'पर्यावरण प्रभाव आकलन' को निर्णय लेने से पूर्व किसी परियोजना के पर्यावरणीय सामाजिक और आर्थिक प्रभावों की पहचान करने हेतु उपयोग किए जाने वाले उपकरण के रूप में परिभाषित किया जाता है।

पर्यावरण प्रभाव आकलन को प्रमुख रूप से एक महत्वपूर्ण विनिमय कहा जाता है, जिसके माध्यम से पर्यावरण पर विभिन्न परियोजनाओं, भूमि उपयोग, वन संरक्षण और जल प्रदूषण आदि के प्रभावों का पूर्ण रूप से अध्ययन किया जाता है। जो कि विकास परियोजनाओं पर निर्णय लेने में एक विकल्प के तौर पर कार्य करता है। वहीं पर्यावरण प्रभाव आकलन अब 30 वर्गों में परियोजनाओं के लिए आवश्यक कर दिया गया है।

इन्हें पर्यावरणीय मंजूरी तभी प्रदान की जाती है जब वे EIA के शर्तों को पूरा करते हैं। इन्हें यह मंजूरी पर्यावरण मंत्रालय भारत सरकार द्वारा प्रदान की जाती है। भारत सरकार द्वारा मंजूरी प्राप्त करने वाली प्रमुख परियोजनाओं में उद्योग, खनन, थर्मल पावर प्लांट, नदी घाटी परियोजना (हाइड्रो पावर प्लांट) न्यूक्लियर पावर परियोजनाएं आदि आती हैं।

पर्यावरण प्रभाव आकलन का लक्ष्य परियोजना नियोजन और डिजाइन के प्रारंभिक चरण में पर्यावरणीय प्रभावों की भविष्यवाणी करना, प्रतिकूल प्रभावों को कम करने के तरीके और साधन खोजना, परियोजनाओं को स्थानीय पर्यावरण के अनुरूप आकार देना और निर्णय निर्माताओं के लिए विकल्प प्रस्तुत करना है।

भारत में पर्यावरण प्रभाव आकलन की आवश्यकता सर्वप्रथम 1976-77 में तब महसूस की गई, जब योजना आयोग (वर्तमान नीती आयोग) ने विज्ञान एवं प्रौद्योगिकी विभाग की नदी घाटी परियोजनाओं की पर्यावरणीय दृष्टि से जांच करने को कहा। पहली पर्यावरणीय प्रभाव आकलन अधिसूचना वर्ष 1994 में तत्कालीन पर्यावरण एवं वन मंत्रालय (वर्तमान पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय) द्वारा स्थापित की गई थी। इस अधिसूचना के माध्यम से किसी भी निर्माण गतिविधि के विस्तार या आधुनिकीकरण या अधिसूचना की अनुसूची 1 में सूचीबद्ध की नई परियोजना की स्थापना के लिए पर्यावरण मंजूरी को अनिवार्य बना दिया गया।

वर्ष 2006 में इन कानूनों में कुछ सुधार किए गए, जिसके पश्चात पर्यावरण प्रभाव आकलन के बाद ही किसी परियोजना के निर्माण को हरी झंडी देने की व्यवस्था की गई, जो आज तक लागू है। वर्तमान प्रक्रिया के अनुसार नया प्रोजेक्ट लगाने या किसी परियोजना के विस्तार हेतु पहले पर्यावरण स्वीकृति लेनी आवश्यक है। परन्तु वर्ष 2020 में लाए गए पर्यावरण प्रभाव आकलन मसौदा (2020) की कमियों की ओर इंगित करते हुए पर्यावरण के क्षेत्र में कार्य करने वाले कुछ गैर सरकारी संगठनों और पर्यावरणविदों ने यह आरोप लगाया है कि सरकार के द्वारा लाया गया यह मसौदा पर्यावरण प्रभाव आकलन के मूल प्रावधानों को कमजोर करता है, जो पर्यावरण को नकारात्मक रूप से प्रभावित कर सकता है। क्योंकि EIA अधिसूचना 2020 ऐसी परियोजनाओं के प्रवेश को भी सक्षम बनाती है जिनको कभी क्लीयरेंस मिला ही नहीं और उनके द्वारा लापरवाह तरीके से निर्माण कार्य भी किए गए हैं। इसके अतिरिक्त उल्लंघनों के लिए जुर्माना बहुत ही मामूली कर दिया गया है।

फ्राईडे फॉर फ्यूचर इंडिया (FFF) भारत में पर्यावरण संरक्षण हेतु एक जन आंदोलन (अथवा संस्था) है। इस संस्था ने हाल ही में भारत सरकार द्वारा जारी नए EIA 2020 मसौदे को लेकर अपनी चिंताएं जाहिर की हैं, इसके लिए इस संस्था ने कई पर्यावरण आंदोलन भी किए हैं। कोविड-19 महामारी के दौरान भारत सरकार ने पर्यावरण प्रभाव आकलन 2020 के मसौदे को सार्वजनिक किया है ताकि जनता की राय इस पर जानी जा सके और उनके सुझावों को पर्यावरणविदों के द्वारा रेखांकित की गई चिंताओं पर गम्भीरता से विचार करना चाहिए।

Tally: A Gateway To The Accounting Principles **Shivanshi, BA IInd year**

Every business organization in order to determine its annual financial report, needs certain accounting principles to ascertain net and gross profits during the year. Without these principles no organization can run its functions effectively. Accounting principles are the language of business. It records business transactions with a view to prepare final statements, hence helping owners and creditors in making economic decisions.

The main functions of accounting are, keeping systematic records of financial transactions, protecting properties of the business communicating results of the statements to the interested parties like, proprietors, investors, creditors, employees,

government officials etc. The process of accounting is followed by first recording financial transactions into the journal, then from the journal entries a particular and individual accounts are opened in the ledger books, then trial balances are made and finally trading and, profit and loss accounts are made with the balance sheet of the year. This whole accounting process is known as accounting cycle, which is repeated in each subsequent year. The principles of accounting are classified into two categories, accounting concepts and accounting conventions.

Accounting concepts are related to business entity money measurement cost and time, whereas accounting conventions are related to financial statements disclosure and conservation of financial statements. To have a basic knowledge of general accounting "Tally" is helpful. Tally is the most powerful integrated accounting. It is the practical way of performing and making various accounting books of a business entity. Tally is usually done either on Windows or DOS prompt, after its installation the tally screen has three areas, the actual work area (consisting menus, masters and reports), the direct command area (to give commands) and, the keys (to perform functions).

For the gateway of tally to work, first a company is selected and then various functions are performed such as, creating accounts, entering vouchers, viewing and printing reports under primary choices such as, accounts information, inventory, voucher entry, balance sheet, stock statement and display. Under accounts information various accounts groups are made then ledgers are made, the cost categories are determined. Under inventory information, entry is done with viewing reports.

Nowadays, many organizations have adopted simple Tally software to deal with their accounts. It is simple and easy to use, operates with speed, non time-consuming and cost-effective, and it is widely used for monetary control, invoicing, reporting and sales management.

Word of the Month

यह न्यूज लेटर पूरी तरह अव्यवसायिक है तथा इसका प्रकाशन मानविकी एवं समाज विज्ञान परिषद के सदस्यों द्वारा छात्र हित में किया गया है।

संचेतना

विवेक युक्त आस्था, आस्था सहित विवेक

मानविकी एवं समाज विज्ञान परिषद

HUMANITIES AND SOCIAL SCIENCE COUNCIL

राजकीय स्नातकोत्तर महाविद्यालय नई टिहरी, टिहरी गढ़वाल

मासिक ई न्यूजलैटर

अंक VI, मई 2022

संपादकीय

प्रिय पाठकों, छात्रों !

संचेतना का छठा अंक आपके सामने है। आज की बाजारवादी अर्थव्यवस्था के इंस्टैंट युग में विचार, कल्पना, अभिव्यक्ति और हमारे बोध का स्वरूप भी बहुत कुछ रेडीमेड हो गया है यहां तक कि अपने नितांत निजी संबंधों में भी हम उधार की छिछली और सतही अभिव्यक्तियों से काम चलाते हैं। ऐसे में संचेतना का मुख्य उद्देश्य अपने छात्र छात्राओं में अभिव्यक्ति कौशल का विकास करने के साथ ही उन्हें अपने आसपास के मुद्दों पर स्वतंत्र चिंतन के लिए प्रेरित करना है। इस संदर्भ में संचेतना का कार्य भले ही छोटा हो लेकिन महत्वपूर्ण है। इसी अंक में बीए द्वितीय वर्ष के छात्र प्रियांशु सजवान का आलेख शिक्षा व्यवस्था में परीक्षाओं की भूमिका पर नए सिरे से विचार की आवश्यकता को रेखांकित करता है। शिवांशु उनियाल ने अर्थशास्त्र विषय की प्रासंगिकता और महत्व को अपने आलेख में बताया है। डॉ. श्रद्धा सिंह ने अपने लेख में आज के जीवन में पैदा बोर्डम, उब, बेचैनी और निरर्थकताबोध से मुक्ति के उपाय सुझाती हैं। इस अंक से हम एक नया कॉलम 'इस महीने का शब्द' शुरू कर रहे हैं जिसमें ज्ञान के अलग-अलग अनुशासनों से प्रत्येक माह एक नया पारिभाषिक शब्द देंगे जिससे पाठक लाभान्वित होंगे। आशा है आप अपनी प्रतिक्रियाओं और सुझावों से हमें अवगत कराएंगे ताकि हम संचेतना को और बेहतर बना सकें।

मैं हवाओं का रुख तो नहीं बदल सकता,
पर मैं अपनी रहगुजर तो बदल सकता हूँ।
शुभकामनाओं सहित संजीब नेगी।



Sixth Monthly Lecture by Dr Nishant Bhatt on Topic- English: Today and Tomorrow

कला और मानविकी परिषद की माह अप्रैल की गतिविधियां

डॉ० निशांत भट्ट विभागाध्यक्ष, अंग्रेजी विभाग द्वारा 'आधुनिक अंग्रेजी: वर्तमान एवं भविष्य' विषय पर व्याख्यान दिया गया। उन्होंने अंग्रेजी भाषा के इतिहास पर प्रकाश डालते हुए बताया कि अंग्रेजी भाषा 1700 शताब्दी की भाषा है तथा यह भाषा औद्योगिक क्रांति से उत्पन्न हुई भाषा है और तकनीकी विकास से अंग्रेजी के शब्दों की समाज में आवश्यकता पड़ी।

उन्होंने अंग्रेजी भाषा की विशेषताओं पर चर्चा करते हुए बताया कि अंग्रेजी भाषा एक सरल, लचीली एवं स्पष्ट भाषा है। साथ ही उन्होंने अंग्रेजी भाषा की विशेषताओं पर चर्चा करने के साथ-साथ बताया कि अंग्रेजी भाषा 360 मिलियन लोगों में पूरे विश्व में बोली जाती है और 118 देशों में पढाई जाती है एवं यह भाषा विचारों का आदान-प्रदान करने के लिए पूरे विश्व में बोली जाती है।

अंग्रेजी भाषा के दायरों को बताते हुए उन्होंने भाषा को विज्ञान, गणित, तकनीकी एवं पर्यटन की भाषा बताते हुए अंग्रेजी भाषा के महत्व पर चर्चा की और बताया कि अंग्रेजी एक वैश्विक एवं इंटरनेट की भाषा है।

जीवन के प्रति बच्चों जैसा उत्साह बनाए रखना जरूरी है

डॉ० श्रद्धा सिंह, समाजशास्त्र विभाग

अक्सर देखा जाता है कि बच्चों में हर चीज के प्रति अत्यधिक उत्साह होता है। सुबह उठने से लेकर रात को सोने तक वे हमेशा ऊर्जा से भरे रहते हैं। उनमें एक-दूसरे से प्रतिस्पर्धा का भाव भले हो, किंतु वे अपने दिल के भीतर नफरत सींचकर नहीं रखते। वे कुछ भी नया जानने के लिए आतुर रहते हैं। उन्हें न तो अनदेखे भविष्य की चिंता होती है और न ही वे अपनी आत्मा पर बीते हुए कल का बोझ ढोना पसंद करते हैं। पर, हमारे जीवन का दूसरा पहलू यह है कि जैसे-जैसे हम बड़े और परिपक्व होते हैं। वैसे-वैसे इस उत्साह, मस्ती और जिंदादिली से वंचित होते जाते हैं। स्कूल-कॉलेज की शिक्षा पूरी करने के बाद जब जीवन के वास्तविक संघर्षों से दो-चार होना पड़ता है तो जीवन के प्रति उत्साह में अचानक कमी महसूस होने लगती है।

कई समाजशास्त्रियों, दार्शनिकों और सामाजिक मनोवैज्ञानिकों ने अपने-अपने तरीके से इस उत्साहहीनता की व्याख्या की है और इससे मुक्त होने के उपाय भी बताए हैं। वस्तुतः उन विद्वानों ने इस समस्या को 'अलगाव' (अर्थात् लगाव न होना) का नाम दिया है जो अंग्रेजी शब्द (alienation) का हिंदी समतुल्य है। कार्ल मार्क्स जैसे समाजशास्त्री ने इसकी व्याख्या अर्थव्यवस्था के आधार पर की है तो ऐरिक फ्रॉम जैसे मनोवैज्ञानिकों ने व्यक्ति के 'मन के स्तर' पर। मैक्स वेबर ने इसकी व्याख्या समाजशास्त्रीय

तथा प्रशासनिक दृष्टिकोण से की है, तो हीगेल,कीर्केगार्द और सार्त्र जैसे विचारक इस समस्या को दर्शन की सूक्ष्मताओं के स्तर पर विश्लेषण करते हैं। मैं कोशिश करूँगी कि इन सभी बातों को समाहित करते हुए सरल भाषा में जीवन को बेहतर बनाने के लिए उपयोगी सूत्र एकत्रित करूँ।

पहला सूत्र यह है कि जीवन में रचनात्मकता या 'क्रियेटिविटी' की कुछ न कुछ संभावना बनी रहनी चाहिए। इस बिंदु पर विशेष रूप से कार्ल मार्क्स और मैक्स वेबर ने बल दिया है। मार्क्स ने कहा है कि मनुष्य तभी तक मनुष्य रहता है जब तक वह अपनी छठी इंद्रिय (sixth sense) का प्रयोग करता रहता है। मार्क्स के दर्शन में छठी इंद्रिय शब्द का प्रयोग रचनात्मक क्षमता के अर्थ में किया गया है। उन्होंने बताया है कि जब तक कोई व्यक्ति किसी भी तरह के रचनात्मक कार्य से जुड़ा रहता है, उसमें सार्थकता का अहसास बना रहता है। इस सार्थकता को बनाए रखने का एक ही तरीका है कि हमे अपने जीवन का समय रचनात्मक कार्यों में गुजारना चाहिए।

दूसरा सूत्र यह है कि जीवन में कोई न कोई उद्देश्य विद्यमान होना चाहिए। यह जरूरी नहीं है कि उद्देश्य बहुत बड़ा हो। जरूरी सिर्फ इतना है कि जीवन में उद्देश्य विद्यमान होना चाहिए किसी विद्यार्थी के लिए परीक्षा में सफल होना उद्देश्य हो सकता है तो किसी नेता के लिए चुनाव जीतना। किसी का उद्देश्य धार्मिक क्रियाकलाप हो सकता है तो किसी कर्मचारी के लिए आय-वृद्धि तथा पदोन्नति हासिल करना उद्देश्य हो सकता है।

तीसरा सूत्र यह है कि व्यक्ति को किसी-न-किसी सामाजिक कार्य से जुड़े रहना चाहिए। इस सूत्र की प्रभावशाली व्याख्या प्रसिद्ध मनोवैज्ञानिक ऐरिक फ्रॉम ने कार्ल मार्क्स के वैचारिक सूत्रों के आधार पर की है। मार्क्स ने कहा था कि व्यक्ति को गहरा संतोष तभी मिलता है जब उसे महसूस होता है कि उसने अपने समाज के लिए कोई योगदान दिया है। फ्रॉम ने अमीर लोगों को सलाह दी है कि अगर वे वास्तविक संतोष हासिल करना चाहते हैं तो अपने समय और धन का कुछ हिस्सा उन लोगों पर खर्च करें जो आर्थिक प्रतिस्पर्धा में पीछे छूट गए हैं और गंभीर रूप से वंचित हैं। ऐसा करने से उन वंचित व्यक्तियों की तो जो मदद होगी, सो होगी, उससे अधिक मदद उन अमीरों की होगी जो अत्यधिक धन कमाने के बावजूद अपनी सार्थकता की अनुभूति के लिए कोई वजह तलाश पाते हैं।

एक शिक्षक विद्यारूपी धन ही अपने छात्रों को देता है चाहे प्राचीन गुरुकुल की व्यवस्था हो या आज की आधुनिक प्रणाली विद्यारूपी धन को देने पर एक शिक्षक, आचार्य को परम संतोष एवं उत्साह की अनुभूति होती है। इसलिए वेदशास्त्रों में भी कहा गया है विद्या को संचय नहीं बाँटना चाहिए:-

न भ्रातृभाज्यं न च भारकारी।

व्यये कृते वर्धते एवं नित्यं, विद्याधनं सर्वधन प्रधानम्।।

अपूर्वः कोऽपि कोशोऽयं बिद्यते तव भारति।

व्ययतो वृद्धि मायाति क्षयमयाति स!।।

वास्तव में ये खजाना सचमुच अदभुत है, जो खर्च करने से बढ़ता है, और जमा करने से कम होता है। जीवन में उत्साह बनाए रखने के कुछ और भी सूत्र हैं। पहला यह है कि उम्र चाहे

जितनी भी हो जाए, व्यक्ति को अपने भीतर के बच्चे को मरने नहीं देना चाहिए। अपने भीतर के बच्चे को जिंदा रखने का अर्थ सिर्फ इतना है कि संकोच और झिझक को खुद पर हावी नहीं होने देना चाहिए। इसी में दूसरा सूत्र यह है कि अपनी व्यस्त से व्यस्त दिनचर्या में भी कुछ समय अच्छे दोस्तों और रुचियों के लिए जरूर निकालिये।

वास्तव में उत्साह से भरा जीवन एक ऐसा वरदान है जिसका महत्व उन्हें ही समझ आता है जो इस वरदान से वंचित हो गए हैं।

ब्रेल लिपि अथवा ब्रेल पद्धति

डॉ मीरा कुमारी, हिन्दी विभाग

ब्रेल पद्धति एक तरह की लिपि है, जिसको विश्व भर में नेत्रहीनों को पढ़ने और लिखने के लिए व्यवहार में लाया जाता है। इस पद्धति का आविष्कार 1821 में एक नेत्रहीन फ्रांसीसी लेखक लुई ब्रेल ने किया था। यह अलग-अलग अक्षरों, संख्याओं और विराम चिह्नों को दर्शाते हैं। ब्रेल के नेत्रहीन होने पर उनके पिता ने उन्हें पेरिस के रॉयल नेशनल इंस्टीट्यूट फॉर ब्लाइंड चिल्ड्रेन में भर्ती करवा दिया। उस स्कूल में 'वेलन्टीन होउ' द्वारा बनाई गई लिपि से पढ़ाई होती थी, पर यह लिपि अधूरी थी। इस विद्यालय में एक बार फ्रांस की सेना के एक अधिकारी कैप्टन चार्ल्स बार्बियर एक प्रशिक्षण के लिए आये और उन्होंने सैनिकों द्वारा अंधेरे में पढ़ी जाने वाली 'नाइट राइटिंग' या 'सोनोग्राफी' लिपि के बारे में व्याख्यान दिया। यह लिपि कागज पर अक्षरों को उभारकर बनायी जाती थी और उसमें 12 बिन्दुओं को 6-6 की दो पंक्तियों में रखा जाता था, पर इसमें विराम चिह्न, संख्या, गणितीय चिह्न आदि नहीं होते थे। 'ब्रेल' को वहीं से यह विचार आया। लुई ने इसी लिपि पर आधारित किन्तु 12 के स्थान पर 6 बिन्दुओं के उपयोग से 64 अक्षर और चिह्न वाली लिपि बनाई। उसमें न केवल विराम चिह्न बल्कि गणितीय चिह्न और संगीत के नोटेशन भी लिखे जा सकते थे। यही लिपि आज सर्वमान्य है। लुई ने जब यह लिपि बनाई तब वे मात्र 14 वर्ष के थे। सन् 1824 में पूर्ण हुई यह लिपि दुनिया के लगभग सभी देशों में उपयोग में लायी जाती है। इसमें प्रत्येक आयताकार सेल में 6 बिन्दु यानि डॉट्स होते हैं, जो थोड़े-थोड़े उभरे होते हैं। यह दो पंक्तियों में बनी होती है। इस आकार में अलग-अलग 64 अक्षरों को बनाया जा सकता है। सेल की बायीं पंक्ति में ऊपर से नीचे 1,2,3 बने होते हैं, इसी तरह दाईं ओर 4,5,6 बने होते हैं। एक डॉट की औसतन ऊंचाई 0.02 इंच होती है। इसको पढ़ने की विशेष तकनीक होती है। ब्रेल लिपि को पढ़ने के लिए अंधे बच्चों में उतना ज्ञान होना आवश्यक है कि वे अपनी उंगली को विभिन्न दिशाओं में सेल पर घुमा सकें।

वैसे विश्व भर में इसको पढ़ने का कोई मानक तरीका निश्चित नहीं। ब्रेल लिपि को स्लेट पर भी प्रयोग में लाया जा सकता है। इसके अलावा इसे ब्रेल टाइपराइटर पर भी प्रस्तुत किया जा सकता है। आधुनिक ब्रेल स्क्रिप्ट को 8 डॉट्स के सेल में विकसित कर दिया गया है, ताकि अंधे लोगों को अधिक से अधिक शब्दों को पढ़ने की सुविधा उपलब्ध हो सके। 8 डॉट्स वाले ब्रेल लिपि सेल में अब 64 के बजाय 256 अक्षर, संख्या और विराम चिह्न के पढ़ सकने की सुविधा उपलब्ध हैं। ब्रेल पद्धति को

वर्णमाला के वर्णों को कूटरूप में निरूपित करने वाली सबसे प्रथम प्रचलित प्रणाली कह सकते हैं, किन्तु ब्रेल लिपि नेत्रहीनों के पढ़ने और लिख सकने के उपाय का प्रथम प्रयास अध्याय नहीं है। इससे पहले भी 17वीं शताब्दी में इटली के जेसूट फ्रांसिस्को 'लाना' ने नेत्रहीनों के लिखने पढ़ने को लेकर काफी कोशिश की थी।

Significance of Studying Economics

Shivanshi Uniyal, B.A. II

For over a century Economics as a subject has great significance. Economics is derived from the Greek words "Oikos" and "Nomos" which means "a house" and "to manage" respectively. The Greek applied this term to the city state which they called "Polis". Aristotle described economics as "household management". It gives us knowledge about how industries, businesses and government work for the interest of public and how fluctuations in prices of goods and income of the consumer affect the market forces.

Besides this, the subject tells us that to become a rational man in society, it is necessary to make arrangements for food, shelter and clothes and to make choices under conditions of scarcity of resources. For this it is essential to generate income and to meet expenses. Our activities to generate income are termed as economic activities, wherein lies the origin and development of Economics as a subject matter.

Adam Smith, father of Modern Economics defined Economics as "Science of Wealth". Economics has a great dependency on mathematics and statistics in its pursuit of finding answers of social problems so as to increase welfare of the people. For example, the development of Human Development Index which is a tool for mapping social and economic problems and educational development of the country.

Another eminent personality who tried to define economics is Alfred Marshall who said "economics is the study of mankind in the ordinary business of life and to examine that part of individual and social action which is mostly closely connected with the attainment and with the use of material requisites of well-being." Thus economics also tells that how human satisfies his unlimited wants with limited resources which have alternative uses and out of these alternative uses of scarce resources the society has to make choices. This problem of scarcity and choices forms the core of Economics.

Whereas, according to professor Robbins Economics is "a science which studies human behavior as relationship between ends and scarce means which have alternative uses." Therefore, studying economics is useful to

understand the corporate world, markets, social problems, environmental activities, legal and political activities, decision making and allocation of resources.

Why Examinations Fail Our Students ?

Priyanshu Singh Sajwan, B.A. II

Our education system is turning us into mental slaves and the proof is our EXAMS! From students to teachers we all are frustrated with exams (FRUSTRATED!), but why?, what is that one fault in our education system that needs to be taken care of as soon as possible? If we want our students to become better learners what do we need to do? (Let us understand why exams fail our youth). We're going to implement a New Education Policy soon. Our ideas need to reach the decision makers.

(PROBLEM NO.1-NO CONCEPTUAL LEARNING)

What's wrong with exams? This is because exams do not focus on conceptual learning. There is a line in the film - 3 Idiots (chabuk ke dar sea sher bhe kursi par baithna sikh he jata hai lekin hum us sher ko well trained kahate hai 'well educated' nahi).When we all heard this line we clapped loudly for sure. But 13 years have passed since the release of the movie. Did we change the structure of our exams? No....Not at all. People often argue, what other option do we have? Are there any better options to evaluate our children? The answer is this.... it is called Bloom's Taxonomy which divides our learning process into 6 different stages. We begin by reading and understanding things, the focus is on understanding and on application of learning. Then application of knowledge is analyzed. The result is evaluated and the learning process is concluded with creativity. For example: Newton's laws of motion. Instead of learning this in a closed classroom we can learn this concept in a ground. We are taught this repeatedly that whatever our textbooks say is the absolute truth but if what is written in the textbook is the truth then why are our textbooks becoming outdated. Why don't we update the method of learning?

(PROBLEM NO.2-EXAM FIRST MINDSET)

What's wrong with exams? Because after we write the exams we forget everything that we have learned. We give so much importance to marks scored in exams that some students end up cheating. 64% of the students globally have candidly admitted that they have cheated some times in exam. The remaining 36% are LYING!!! Think about it!! The marks that you can achieve by cheating....are those marks really that genuine? You can cheat in exam! But you can't cheat life! The students who use dishonest methods to pass in exams end up failing somewhere in life because their focus is on certificate. (REMEMBER YOU CAN LIE ON

YOUR CV BUT YOU CANNOT LIE AT WORK) The marks you scored in your exams can only take you to the interview stage but whether you will be given a job or not and whether you will progress in your job.... depends on your skills and you can learn many useful skills from online learning portals like UNACADEMY. UNACADEMY is one of the most trusted app for learning and for expanding your knowledge. Unacademy is an online platform that makes both learning and teaching easy with its educational videos and lecture. It was founded in the year 2010 with videos uploaded on YouTube, but it officially got launched in the year 2015. You can give your creativity a chance to breathe freely here and can learn at your own pace. There is a lot of information available online but this information is not organized properly. I get value in small chunks on Unacademy and that is why i love Unacademy.

(PROBLEM NO. 3-WE ALL ARE DIFFERENT)

Rahul Dravid is one of my favorite cricketer. In an interview, he said "exams are not the only way to judge boy and girls". Why did he say that? All student are not same, some students learn by experiencing things, some learn by observing others, some students study while listening to music.. just think about it. Does our education system give an equal opportunity to all these different type of students? Or does it give a preference to students who are good at memorizing things. The fact is, all of us come from different backgrounds but only one type of learner gets an advantage in exams.

(PROBLEM No.4-THE RAT RACE)

What's wrong with exams? Though exams prepare us for competition, it isn't a healthy one. I am talking about comparison based competition. When my father was a student, getting 90% was a big deal because 90% was a tough job and very few students got 90% marks and above. But now, getting 90% seems like no big deal. WHY? Because we never see the number of people behind us... we only see how many people are ahead of us. This attitude keeps us unhappy life-long because we can't tolerate other getting better marks than us. Rather than crying about my marks, my family was more concerned about my best friend's marks. This never improved my marks but it ended up spoiling my friendship for sure.

Indian Economy: A Story of Growth

Arti, MA 1st Sem

India is a middle income developing market economy. It is the world's fifth largest economy by nominal GDP and the third largest by purchasing power parity (PPP). Since independence in 1947 until 1991, successive governments promoted protectionist policies, with extensive state

intervention and economic regulation. This *dirigisme* is characterized in the form of **License Raj**. The end of the Cold War and the acute balance of payments crisis in 1991 led to the adoption of a policy of broad economic liberalization of India.

At the beginning of the 21st Century annual average GDP growth rate was 6% to 7% and during the 2008 global financial crisis, the economy faced a mild slowdown. India undertook stimulus measures (both fiscal and monetary) to boost growth and generate demand. In subsequent years, economic growth revived. According to the World Bank, to achieve sustainable economic development, India must focus on public sector reform, infrastructure, agricultural and rural development, removal of land and labor regulations, financial inclusion, spur private investment on public health, spur private investment on exports, education and public health.

Starting in 2012, India entered a period of declined growth, which slowed to 5.6%. Other economic problems also became apparent: a plunging Indian rupee, a persistent high current account deficit and slow industrial growth.

Indian economic recovery started in 2013-14 when the GDP growth rate accelerated to 6.4% from the previous year's 5.5%. The acceleration continued through 2014-15 and 2015-16 with growth rates of 7.5% and 8% respectively. For the first time since 1990, India grew faster than China which registered 6.9% growth in 2015. However the growth rate subsequently decelerated to 7.1% and 6.6% in 2016-17 and 2017-18 respectively. This was partly because of the disruptive effects of government policies of 2016 and in particular of banknote demonetisation and the implementation of Goods and Services Tax.

COVID-19 affected Indian economy, from April to June 2020, India's GDP dropped by a massive 24.4%. According to the latest National Income Estimates, in the second quarter of the 2020-21 financial year, the economy contracted by a further 7.4%. The recovery in the third and fourth quarters was still weak, with GDP rising by 0.5% and 1.6% respectively. This means that the overall rate of contraction in India was (in real terms) 7.3% for the whole 2020-21 year.

Word of the Month

जी.डी.पी. (सकल घरेलू उत्पाद) – किसी देश की भौगोलिक सीमा के अन्तर्गत एक वर्ष में उत्पादित अन्तिम वस्तुओं एवं सेवाओं के मौद्रिक मूल्य को 'सकल घरेलू उत्पाद' कहते हैं।

यह न्यूज लेटर पूरी तरह अव्यवसायिक है तथा इसका प्रकाशन मानविकी एवं समाज विज्ञान परिषद के सदस्यों द्वारा छात्र हित में किया गया है।

संचेतना

विवेक युक्त आस्था, आस्था सहित विवेक

मानविकी एवं समाज विज्ञान परिषद

HUMANITIES AND SOCIAL SCIENCE COUNCIL

राजकीय स्नातकोत्तर महाविद्यालय नई दिल्ली, दिल्ली गढ़वाल

मासिक ई न्यूजलैटर

अंक VII, जून 2022

संपादकीय

प्रिय पाठकों ! संचेतना का सातवां अंक आपके हाथों में है। पिछले अंक से हमने संचेतना को शहर के गणमान्य व्यक्तियों और बुद्धिजीवियों तक पहुंचाने का निर्णय लिया और उन तक संचेतना का अंक पहुंचाया भी। उन सब ने छात्र-छात्राओं की रचनात्मक प्रतिभा को मंच देने के लिए इस लघु प्रयास की सराहना की। यह हमारे लिए संतोष की बात है। इसी क्रम में इस अंक में महाविद्यालय की छात्रा मनिका ने प्रख्यात पर्यावरणविद श्री विजय जड़धारी जी का साक्षात्कार लिया है। छात्र-छात्राएं विभिन्न विषयों में शोध प्रविधि के बारे में पढ़ते हैं लेकिन संचेतना में वे साक्षात्कार कैसे लिया जाता है उसकी तकनीक क्या है आदि के बारे में व्यावहारिक धरातल पर सीखते हैं। उत्तराखंड में पलायन एक बड़ी समस्या के रूप में चिन्हित किया गया है। इस समस्या पर युवा क्या सोचते हैं इसको सौरव पंवार ने अपने आलेख में रेखांकित किया है। 5 जून पर्यावरण दिवस के अवसर पर देश भर में पर्यावरण जागरूकता के कार्यक्रम आयोजित किए गए। हमारी परंपरा और दर्शन में मनुष्य इस विशाल ब्रह्मांड का एक हिस्सा भर है जबकि पाश्चात्य आधुनिक विज्ञान और दर्शन में मनुष्य इस प्रकृति का मालिक है। इसी पर एम. ए. संस्कृत की छात्रा शिवानी ने 'वेदों में पर्यावरण' विषय पर लेख लिखा है। अवार भाषा के प्रसिद्ध रूसी कवि रसूल हमजातोव ने अपनी प्रसिद्ध पुस्तक 'मेरा दगिस्तान' में लिखा है - "पहाड़ी आदमी को दो चीजों की रक्षा करनी चाहिए- अपनी टोपी और अपने नाम की। टोपी की रक्षा वही कर सकेगा जिसके पास टोपी के नीचे सिर है। नाम की रक्षा वही कर सकेगा जिसके दिल में आग है।" संचेतना टोपी के नीचे सिर और दिल में आग को बचाए रखने का एक छोटा प्रयास है। उम्मीद है कि इस प्रयास को आप सभी का प्यार और सहयोग मिलेगा।

आपका ही संजीव नेगी।



Seventh Monthly Lecture by Dr Ankita Bora on Topic- हाशिए में पड़ा समाज : थर्ड जेंडर।

कला और मानविकी परिषद की माह अप्रैल की गतिविधियां

डॉ अंकिता बोरा, असिस्टेंट प्रोफेसर हिन्दी द्वारा "हाशिए में पड़ा समाज : थर्ड जेंडर, चित्रा मुद्गल के उपन्यास के विशेष संदर्भ में" विषय पर अपना व्याख्यान दिया। उन्होंने बताया कि थर्ड जेंडर समाज से कटे हुए लोग हैं जो अपने अस्तित्व की लड़ाई लड़ रहे हैं। डॉ बोरा ने बताया कि कैसे विपरीत परिस्थितियों में रहते हुए कुछ किन्नरों ने अपने व अपने समाज के लिए उत्कृष्ट कार्य किए। पद्म श्री पुरस्कार प्राप्त मंजुमा जोगती, प्रथम किन्नर आइ ए एस ऐश्वर्या ऋतुपर्णा प्रधान समाज के लिए मिसाल हैं कि कैसे अभावों में भी अवसर खोजे जा सकते हैं। किन्नरों को प्राप्त संवैधानिक अधिकारों के विषय में बताते हुए उन्होंने कहा कि थर्ड जेंडर को मान्यता संविधान ने तो दे दी, किन्तु उन्हें अभी तक परिवार और समाज की स्वीकार्यता नहीं मिल पाई है। किन्नर समस्या को उजागर करता हुआ उपन्यास 'पोस्ट बॉक्स न० 203 : नालासोपारा' के माध्यम से किन्नरों की सरदार और गुरु परंपरा की व्यवस्था को भी बताया।

महाविद्यालय की बी.ए. द्वितीय वर्ष की छात्रा मनिका ने प्रख्यात पर्यावरणविद और बीज बचाओ आंदोलन के प्रणेता श्री विजय जड़धारी जी से 5 जून पर्यावरण दिवस पर एक साक्षात्कार लिया। जो संचेतना के इस अंक में पाठकों के लिए प्रस्तुत है। श्री जड़धारी जी को इंदिरा गांधी पर्यावरण पुरस्कार 2009, गांधी शांति प्रतिष्ठान द्वारा 2007 में प्रणवानंद पुरस्कार से भी सम्मानित किया जा चुका है। वर्तमान में वे उत्तराखंड जैव विविधता बोर्ड में विषय विशेषज्ञ के रूप में हैं साथ ही औद्योगिकी और वानिकी विश्वविद्यालय की कार्यकारी परिषद और रिसर्च काउंसिल के भी सदस्य हैं साथ ही भारतीय वन अनुसंधान देहरादून की रिसर्च एडवाइजरी ग्रुप के भी सदस्य के रूप में उनके कार्यों को पहचान मिली है। अपने कार्यों को लेकर उन्होंने बांग्लादेश, नेपाल, मलेशिया, बेल्जियम, जर्मनी, दक्षिण अफ्रीका आदि कई देशों में व्याख्यान दिए हैं। उनकी पहाड़ से सम्बन्धित खेती और पारंपरिक बीज और खेती पर लगभग 8 पुस्तकें प्रकाशित हुई हैं और सैकड़ों शोध पत्र विभिन्न विश्वविद्यालयों, संस्थानों और किसानों के बीच प्रस्तुत किए गए हैं।



मनिका - जड़धारी जी आप का कार्यक्रम में स्वागत है, आप हमें और हमारे पाठकों के लिए बताएं कि बीज बचाओ आंदोलन क्या है और आप चिपको आंदोलन से भी जुड़े रहे तो इस पृष्ठभूमि पर प्रकाश डालें।

श्री विजय जड़धारी - मैं अपनी युवावस्था में चिपको आंदोलन का कार्यकर्ता रहा हूँ चिपको आंदोलन के बारे में लोग जानते हैं लेकिन जो जानते हैं वह रैणी या चमोली का चैप्टर ही जानते हैं. कम लोग जानते हैं कि टिहरी में भी चिपको आंदोलन चला और हैवल नदी जो सुरकंडा से निकली है और शिवपुरी में गंगा में विलीन हो जाती है उसके क्षेत्र में अदवाणी, खुरेत, लासी यहां 1971 से 80 तक यह आंदोलन चला और जिससे चिपको आंदोलन को एक नई दिशा मिली। पहले जंगल की देन लीसा, लकड़ी का व्यापार और एक तरह से रोजगार था इसलिए जंगल काटे जाते थे। शुरुआत में चिपको आंदोलन व्यापार केंद्रित था कि क्यों ना हम भी जंगल काटें और इसी का उद्योग लगाएं ,उसी दौरान बहुत सारी समितियां एवं वन निगम की बना। वन निगम बना तो श्रमिक वर्गों के साथ इन्होंने भी जंगल का दोहन किया और जिसके साथ श्रमिक समूह को रोजगार देने की बात कही जाती थी। लेकिन जब पिथौरागढ़ के तवाघाट में लैंडस्लाइड आया जिसमें लगभग 40-50 लोग आईटीबीपी के जवानों संग मारे गए. तब अध्ययन के उपरांत सामने आया कि उस क्षेत्र में जब जंगल काटा गया तो पेड़ कम होने के कारण बरसात में भूस्खलन हुआ.तब हैवल घाटी से चिपको आंदोलन को एक नई दिशा मिली कि अब लोगों को कुदरती संसाधन जैसे जंगलों को बचाना चाहिए और यहां से पर्यावरण चेतना का एक नया मंत्र निकला- 'क्या है जंगल के उपकार, मिट्टी पानी और बयार. मिट्टी पानी और बयार, जिंदा रहने के आधार।' इस नारे से लीसा लकड़ी और व्यापार पीछे छूट गया और जो जंगल की देन है मिट्टी, पानी और हवा यानी पर्यावरण इस पर महत्व दिया जाने लगा।

मनिका - बीज बचाओ आंदोलन में आपकी क्या प्रेरणा थी और सबसे बड़ी समस्या रही होगी अशिक्षित लोगों को हाइब्रिड बीजों के बजाय पारंपरिक खेती और बीजों के प्रति जागरूक करना।

श्री विजय जड़धारी - असल में समस्या अनपढ़ लोगों और किसानों की तरफ से कम आई सबसे बड़ी समस्या कृषि वैज्ञानिक, कृषि विभाग रानी चौरी में जी बी पंत विश्वविद्यालय आदि से आई। इन लोगों ने शुरुआत में जो हाइब्रिड बीज थे उनके साथ रासायनिक खाद भी फ्री देते थे। बीज भी देते थे, खाद भी देते थे और फसल में कुछ खराबी आ जाए तो कीटनाशक भी देते थे। शुरुआत में उपज दोगुना तक होने लगी लेकिन कीटनाशक, खरपतवारनाशक इनके प्रयोग से खेतों की मिट्टी नशे की आदी हो गई और मिट्टी खराब होने लगी। आदमी के लिए शराब और मिट्टी के लिए रासायनिक खाद एक तरह का नशा है। बुजुर्गों से बात करके पता चला कि पहले बीजों की बहुत सारी किस्में आसानी से उपलब्ध होती थी जब हमने बुजुर्गों से बातचीत की तो उन्होंने कहा कि जब से नए बीज आए तब से हमने पुराने बीज बोने छोड़ दिए. फिर हमने पुराने बीजों को खोजने के लिए दूर-दूर के स्थानों की यात्रा की। 80 के दशक में जब हमारे पारंपरिक बीज समाप्त हो गए थे तब भी दूरदराज के क्षेत्रों में लोगों ने अपने पारंपरिक बीज बचा कर रखे थे। हमने पूरे पहाड़ की यात्रा में लोगों से थोड़ा-थोड़ा करके एक एक मुट्ठी पारंपरिक बीज इकट्ठा कीजिए और फिर किसानों को बोने के लिए दिए।

मनिका - जो हमारे परंपरागत बीज हैं ,यह खाद्य सुरक्षा और पोषण से किस तरह जुड़े हैं इस पर थोड़ा प्रकाश डालिए।

श्री विजय जड़धारी - परंपरागत बीज खाद्य सुरक्षा और पोषण की दृष्टि से बहुत महत्वपूर्ण हैं. ये ऐसे होते हैं जो एकल, मोनोकल्चर नहीं है यानी इनके साथ और चीजें भी उगाई जाती हैं। जैसे कोदा के साथ हम 12 तरह की चीजें उगा सकते हैं जिसे पहाड़ में बारहनाजा कहते हैं। बारहनाजा हमारी खाद्य सुरक्षा से जुड़ा हुआ है। इसमें हर प्रकार का खाना मिल जाता है जैसे पोषण की दृष्टि से मंडवा खाने से हड्डियां मजबूत होंगी.राजमा , भट्ट,गहथ, नौरंगी, सुन्टा, रगड़वांस आदि में भरपूर मात्रा में अलग-अलग पोषक तत्व होते हैं। दालों से मांस के बराबर प्रोटीन मिल जाता है तो चौलाई से कैल्शियम और प्रोटीन की पूर्ति होती है। पहाड़ में खेती और पशुपालन एक दूसरे से जुड़े हैं.पशुपालन से गोबर प्राप्त होता है जिससे धरती भी पोषित होती है। चौलाई आदि के साथ लैग्युम वाली दालें जैसे उड़द, नौरंगी भी इसके साथ लिपट जाती हैं परिणामस्वरूप यह nitrogen-fixing का काम करती हैं.इस प्रकार खाद्य सुरक्षा और पोषण भरपूर मात्रा में मिलता है.80 के दशक में जब वैज्ञानिकों ने कहा कि मंडवा, बाजरा आदि मोटे अनाजों को छोड़कर सिर्फ सोयाबीन लगाओ और जब लोगों में फ्री में बीज, खाद आदि बांटे तो लोगों ने पहले सोयाबीन लगाया। पहले साल उत्पादकता भी बढ़ी और लोगों को उसका भाव भी मिला लेकिन अगले साल जब बहुत सारे लोगों ने सोयाबीन लगाया तो उसे बेचने की भी दिक्कत आई और अगले साल बिना कीटनाशक और खादें उसका उत्पादन भी घट गया। सोयाबीन में चारा भूसा तो होता नहीं है जो पशुओं के काम आता और ना ही उसे पूरे साल भर खाया जा सकता था तो पहाड़ की महिलाओं ने हमारी आंखें खोली, उन्होंने बताया कि जो हमारा मंडवा झंगोरा होता था उसका दाना हम खा लेते थे और उसका शेष हमारे जानवर खा लेते थे. तो अगर हम सोयाबीन की खेती करते हैं तो सबसे पहले तो उसमें खरीदारों की कमी होती है और अगर बिक भी जाए तो हमारे पशुओं के लिए चारा नहीं बचता। एक पहाड़ी कहावत है कि - 'अपणा आलू बाजार बेचा अर बिराणा आलू न थोबड़ा थेचा'.यानी पहले अपने आलू बाजार में बेच दो और फिर सड़ा गला बाजार से खरीद कर अपना मुंह खराब करो। इससे हमारी आंखें खुली कि अगर खेती करनी है तो उसमें विविधता होनी चाहिए और पहाड़ की खेती में विविधता भी है और खाद्य सुरक्षा भी।

मनिका -1980 के दशक में जब आपने यह कार्य प्रारंभ किया तो लोगों द्वारा आपका मजाक और विरोध भी किया गया होगा तब आप कैसे अपने दृढ़ निश्चय से अपने कार्य के प्रति अग्रसर रहे।

श्री विजय जड़धारी - हमारा पक्का विश्वास था कि खेती के पारंपरिक बीज, अच्छी मिट्टी, बुजुर्गों का अनुभव और महिलाएं हमारे ज्ञान का भंडार हैं, यह बीज का संचय करती है और उसका उपयोग भी। पहाड़ के लोग बीज रखने में बहुत माहिर माने जाते हैं एटकिंसन के गजट में भी लिखा है कि पहाड़ का आदमी मर जाएगा लेकिन अपना बीज नहीं खाएगा। 1852 के अकाल और गोरखा आक्रमण के समय भी यह देखा गया कि लोग जहां तहां मरे हुए पाए गए लेकिन उन्होंने अपनी तोमणियों में रखे हुए बीजों को खाने के लिए प्रयोग नहीं किया। तो पहाड़ के लोग बीजों के प्रति बड़े संवेदनशील रहे हैं।

मनिका - 1980 के दशक में आपने यह अभियान शुरू किया और अब यह विचार अंतरराष्ट्रीय स्तर पर भी स्वीकृति पा रहा है। जैसे कि संयुक्त राष्ट्र संघ ने 2023 को इंटरनेशनल मिलेट डेयर के रूप में मनाने का प्रस्ताव रखा है और आज प्रधानमंत्री मोदी भी देश से मिट्टी बचाओ की अपील कर रहे हैं ऐसे में आपको कैसा महसूस होता है।

श्री विजय जड़धारी - अच्छा भी लगता है और आश्चर्य भी होता है जब 30 साल पहले हम यह बात कहते थे तब लोग हमारा मजाक उड़ाते थे और बाहरी समाज यानि शहरी सभ्यता में भी लोग अगर मंडवा झंगोरा आदि खाते तो छुपा कर खाते थे। पहले सरकार भी पारंपरिक अनाज का तिरस्कार कर उसे बेकार कहती थी। इन अनाजों को मोटा अनाज और गंवार लोगों का खाना कहकर तिरस्कृत किया जाता था लेकिन अब वही वैज्ञानिक कह रहे हैं कि यही अनाज उत्तम और पौष्टिक आहार हैं। भारत सरकार ने 10 मई 2018 को गजट नोटिफिकेशन निकाला जिसमें उन्होंने माना कि यह झंगोरा, मंडवा, बाजरा आदि पौष्टिक आहार है अंग्रेजी में न्यूट्रीसेरियल इन्हें कहा जा रहा है। प्रधानमंत्री मोदी जी ने गुजरात में प्राकृतिक खेती को लेकर अभी एक बड़ा कार्यक्रम किया। नीति आयोग भी प्राकृतिक खेती को आगे बढ़ाने पर जोर दे रहा है। सरकार को राज्य और राष्ट्रीय स्तर पर एक नीति बनाने की आवश्यकता है कि किस प्रकार इन अनाजों को बचा सके और इस तरह की खेती करने वाले लोगों को सम्मान दें, आज जो क्लाइमेट चेंज हो रहा है उसमें सूखे में अतिवृष्टि में और कुछ हद तक ओले में भी जो फसलें टिकी रह सकती हैं वह पारंपरिक फसल और बीज ही हैं। यह वह फसलें हैं जिनके लिए बहुत कम पानी की जरूरत है। इस तरह जो सतत विकास का मॉडल है उसमें भी पारंपरिक बीजों और फसलों का अपना महत्व है। अभी जापान में एक किसान मासुनोआ फोकोबे ने प्राकृतिक खेती की अवधारणा दी है। जैसे जंगल को ना हम पानी देते हैं न खाद देते हैं बल्कि प्रकृति अपना पोषण और संरक्षण स्वयं करती है। पारंपरिक बीजों की ताकत भी यही प्राकृतिक शक्ति है और पुराने लोगों को कोई बीमारी नहीं होती थी क्योंकि उनका भोजन शक्तिशाली था तो खाद्य सुरक्षा और पोषण की दृष्टि से और जलवायु परिवर्तन में यही पारंपरिक बीज और फसलें आगे काम आने वाली हैं।

मनिका - आज युवाओं को आप क्या संदेश देंगे कि वह अपने परंपरागत खेती और बीजों से जुड़े रहें।

श्री विजय जड़धारी - सबसे पहले अपने बुजुर्गों से बात करके जानें कि पहले का खानपान कैसा था। आज हर युवा खेती नहीं कर सकता लेकिन हर किसी के घर में गमले हैं, किचन गार्डन है तो उसी में थोड़ा बहुत कुछ उगा कर देखें। आप किसान नहीं हो सकते लेकिन आप लोगों को जागरूक कर सकते हैं कि किस प्रकार रसायन और हाइब्रिड बीज जमीन को, खेती को आपके स्वास्थ्य को और आपके पशु पक्षियों को भी नुकसान पहुंचा रहे हैं और ज्यादा से ज्यादा प्रकृति के करीब रहकर प्राकृतिक चीजों का उपयोग करें।

मनिका- जड़धारी जी आपने बीज बचाओ आंदोलन के बारे में हमारे युवा साथियों को जानकारी दी आपका बहुत-बहुत धन्यवाद।

पलायन एक अभिशाप

सौरभ पँवार, बी ए प्रथम वर्ष

कहा जाता है कि "पहाड़ का पानी और पहाड़ की जवानी कभी पहाड़ के काम नहीं आती।" पलायन आयोग की रिपोर्ट ने यह बात साबित भी कर दी है। पलायन आयोग की रिपोर्ट में कहा गया है कि अलग राज्य बनने के बाद उत्तराखंड से करीब 60% आबादी यानी 32 लाख लोग अपना घर छोड़ चुके हैं। पलायन आयोग की रिपोर्ट कहती है कि 2018 में उत्तराखंड के 1700 गाँव भूतहा (घोस्ट विलेज) हो चुके हैं। जबकि करीब 1000 गाँव ऐसे हैं जहाँ 100 से कम लोग बचे हैं। कुल मिलाकर 3900 गाँवों से पलायन हुआ है और पलायन ग्रामीण के लिए एक अभिशाप बन चुका है।

पौड़ी व अल्मोड़ा जनपद से सबसे अधिक पलायन हुआ है। पौड़ी में 2001 की जनगणना के अनुसार लगभग 27205 घरों पर ताले लटके हुए थे। वहीं 2011 में ये 38764 हो चुके हैं तथा उत्तराखंड के 13 जिलों में से सबसे अधिक पलायन पौड़ी से हुआ है।

उत्तराखंड से पलायन कर रहे ग्रामीण युवकों का कहना है कि **खुद से अपना घर कोई नहीं छोड़ता। रोजगार के अवसरों की कमी के चलते युवा शहरी क्षेत्रों में बेहतर सुविधाओं के लिए पलायन कर रहे हैं।**

आज के समय में पलायन करना एक बहुत बड़ी समस्या बन चुकी है। इसके बहुत से नुकसान भी हैं और कुछ फायदे भी हैं। यदि ग्रामीण क्षेत्रों के लोग पलायन करते हैं तो जाहिर सी बात है अधिकतर लोग शहरों में शिक्षा या नौकरी करने के बारे में ही सोचते हैं तथा एक बार शहरों में जाने के बाद युवा दोबारा घर वापस आने के बारे में नहीं सोचता है। जिसके कारण ग्रामीण क्षेत्रों की जनसंख्या दिन प्रतिदिन कम होती आ रही है।

उत्तराखंड में पलायन करने के कुछ मुख्य कारण निम्न प्रकार से हैं -

शिक्षा - आज उत्तराखंड में प्राथमिक एवं माध्यमिक और डिग्री कॉलेज की संख्या करीब 19152 होने के बावजूद शिक्षा संस्थानों पर बुनियादी सुविधाओं की कमी है, जिस कारण पहाड़ युवा मैदानी क्षेत्रों जैसे - देहरादून, दिल्ली की ओर पलायन कर रहा है, क्योंकि वहाँ शिक्षा की सुविधा अच्छी है। यदि हम उत्तराखंड में शिक्षा के क्षेत्र को ही लें जहाँ सरकार की नीति के अनुसार हर 1 किलोमीटर की दूरी पर प्राथमिक विद्यालय और हर 3 किलोमीटर की दूरी पर एक माध्यमिक विद्यालय बनाए गए हैं, परंतु इन स्कूलों में पढ़ने के लिए बच्चे ही नहीं हैं। कहीं बच्चे हैं भी तो उनकी संख्या बहुत कम है। स्कूल में पढ़ा रहे अध्यापकों ने भी अपने परिवारों को देहरादून जैसे मैदानी इलाकों में रखा है जिससे वे 21वीं सदी के बदलते जीवन व सुविधाओं का लाभ ले सकें।

ऐसा भी नहीं है कि सभी स्कूल के हालात एक जैसे हैं, बल्कि उत्तराखंड के बहुत से पहाड़ी स्कूल ऐसे भी हैं जहाँ सैकड़ों की संख्या में छात्र हैं तथा यह विद्यालय अध्यापकों की कमी से जूझ रहे हैं। सरकार को इन विद्यालयों में ध्यान देने की आवश्यकता है जिससे वह पलायन को रोकने में सक्षम हो सके।

स्वास्थ्य सुविधा - उत्तराखंड के सरकारी अस्पताल के हालात बहुत अच्छे नहीं हैं। लोगों को अस्पताल तक पहुंचाने के लिए कई किलोमीटर पैदल चलना पड़ता है। उत्तराखंड में कई गाँव ऐसे भी हैं जहाँ 108 एंबुलेंस सेवा को पहुंचने में 4 से 5 घंटे तक लग जाते हैं जिस कारण लोगों को अस्पताल तक पहुंचने में बहुत तकलीफ होती है। उत्तराखंड के ग्रामीण क्षेत्रों के अस्पतालों में डॉक्टरों एवं मशीनों की भी कमी है जिस कारण उत्तराखंड का युवा शहरों में पलायन करता है।

रोजगार - पलायन आयोग रिपोर्ट के अनुसार 50% लोग रोजगार के लिए पलायन करते हैं। उत्तराखंड में रोजगार के अधिक संसाधन उपलब्ध नहीं हैं। रोजगार के लिए यहां के अधिकतर लोग खेती पर निर्भर करते हैं लेकिन जंगली जीव जंतु उनकी खेती को नष्ट कर देते हैं। उत्तराखंड में लोग छोटे-छोटे व्यापार करते हैं जिससे उन्हें अधिक लाभ नहीं मिलता तथा उत्तराखंड की सरकार को रोजगार पर ध्यान देने की आवश्यकता है।

पलायन के सकारात्मक पहलुओं को देखें तो पलायन करने से लोगों को अच्छी स्वास्थ्य सुविधा, अच्छी शिक्षा, रोजगार के अनेक अवसर प्राप्त होते हैं। उत्तराखंड की जीडीपी बहुत अच्छी है जिसका कारण हमारे लोग उत्तराखंड से पलायन कर दूसरे राज्य व देश - विदेश में जाते हैं और अपने परिवार के भरण पोषण के लिए पैसे भेजते हैं और स्वयं भी आते जाते रहते हैं जिससे हमारी जीडीपी को बढ़ावा मिलता है।

सरकार भी इस गंभीर समस्या को कम करने का प्रयास कर रही है और इस मुद्दे पर अध्ययन के लिए सरकार ने अगस्त 2017 में **ग्राम**

विकास एवं पलायन आयोग की स्थापना की। जिसका मुख्यालय पौड़ी में बनाया गया था। लेकिन सोचने वाली बात यह है कि पलायन आयोग ने कुछ सालों में खुद ही पलायन कर दिया और अपना मुख्यालय पौड़ी से देहरादून में शिफ्ट कर दिया।

जहां शहरों के उथल-पुथल जीवन से बाहर आने के लिए लाखों पर्यटक उत्तराखंड आते हैं। वहीं आज उत्तराखंड वासी हर साल अपने पैतृक भूमि को छोड़ शहरों की ओर चले जाते हैं। पलायन आयोग के अनुसार 70% पलायन मैदानी भागों में ही हुआ है, वहीं 29% लोगों ने अन्य राज्य में पलायन किया है जबकि 1% लोगों ने विदेश में पलायन किया है और एक मुख्य बाद पलायन आयोग की रिपोर्ट में कहा भी गया है कि पहाड़ों में नेपाल व बिहार के लोगों की संख्या बढ़ती जा रही है।

पलायन को रोकने के लिए राज्य सरकार को स्थानीय समस्याओं को ध्यान में रखकर पीने के पानी, स्वास्थ्य सुविधाओं जैसी मूल भूत आवश्यकता पर ध्यान देना चाहिए। पर्यटन को बढ़ावा देने की जरूरत है, धार्मिक स्थल के यातायात साधनों पर ध्यान देना चाहिए और नई फसलों के उत्पादन के लिए किसानों को जागरूक करना चाहिए।

इसके साथ ही हम सबको उन प्राचीन कारीगरों को फिर से पुनर्जीवित करना चाहिए और कारीगरों को उचित पारिश्रमिक देना भी सुनिश्चित करना चाहिए। उनकी वस्तुओं का उपयोग अधिक से अधिक करने के लिए जागरूकता अभियान चलाना चाहिए जिससे कि कारीगरों की कला को दुनिया के समक्ष उजागर किया जा सके। ऐसा करने से गांव का पलायन रोकने में सहायता मिल सकती है और इसी के साथ उत्तराखंड की अर्थव्यवस्था भी सुधरेगी।

कवि महेश चंद्र पुनेठा अपनी कविता के माध्यम से पलायन की पीड़ा को बताते हुए लिखते हैं -

**"सड़क तुम अब आई हो गांव,
जब सारा गांव शहर जा चुका है।"**

वेदों में पर्यावरण

शिवानी, एम ए प्रथम वर्ष

वेदों में जल, पृथ्वी, वायु, अग्नि, वनस्पति, अंतरिक्ष, आकाश आदि के प्रति असीम श्रद्धा प्रकट करने पर अत्यधिक बल दिया गया है। तत्त्वदर्शी ऋषियों के निर्देशों के अनुसार जीवन व्यतीत करने पर पर्यावरण असंतुलन की समस्या उत्पन्न नहीं हो सकती। इनमें हुए अवांछनीय परिवर्तनों के कारण आज जल - प्रदूषण, वायु - प्रदूषण, मृदा - प्रदूषण की समस्याएं चारों ओर व्याप्त है। जल जीवन का प्रमुख तत्व है, इसलिए वेदों में अनेक संदर्भ में उसके महत्व पर पर्याप्त प्रकाश डाला गया है। प्रत्येक वेदों में अलग-अलग प्राकृतिक संसाधनों का वर्णन अलग-अलग वेदों में किया गया है।

ऋग्वेद में पर्यावरण का वैशिष्ट्य बताते हुए लिखा है "अप्सु अन्तः अमृतं, अप्सु भेषजम्" अर्थात् जल में अमृत है, जल में औषधि गुण विद्यमान रहते हैं। अस्तु, आवश्यकता है जल की शुद्धता - स्वच्छता को बनाए रखने की। निस्संदेह, जल संतुलन से ही भूमि में अपेक्षित सरसता रहती है, पृथ्वी पर हरीतिमा छाई रहती है, वातावरण में स्वाभाविक उत्साह दिखाई पड़ता है एवं समस्त प्राणियों का जीवन सुखमय तथा आनंदमय बना रहता है। इस प्रकार जल का कार्य पर्यावरण संतुलित करने में अत्यधिक महत्वपूर्ण होता है।

यजुर्वेद में कहा गया है, "मित्रस्याहम् भक्षुसा सर्वाणि भूतानि समीक्षे" अर्थात् सभी प्राणियों के प्रति सहृदयता का परिचय देना ही जीवन का सही लक्षण है। आज जिसे पारिस्थितिकी तंत्र कहते हैं उसमें भी तो रचना तथा

कार्य की दृष्टि से विभिन्न जीवों और वातावरण की मिली-जुली इकाई का ही स्वरूप विश्लेषण किया जाता है।

अतः इस प्रकार इन दोनों वेदों में प्रकृति के विषय में पर्यावरण के संतुलित होने के संबंध में दोनों वेदों ने अपने - अपने विचार प्रस्तुत किए।

पर्यावरण को स्वच्छ सुंदर रखने का आग्रह है सिर्फ भावनात्मक स्तर पर किया गया हो, ऐसी बात नहीं है। वैज्ञानिक अनुसंधान के संदर्भ में भी सांविक्ता की भावना से अनुप्राणित होकर गहरे मानवीय संबंध की स्थापना पर पर्याप्त बल दिया गया है। उदाहरणार्थ, ऋग्वेद में वैज्ञानिक अनुसंधान की प्रक्रिया में भी सूर्य को पिता, पृथ्वी को माता और किरण समूह को बंधु के समान आदर देने का स्पष्ट निर्देश है। आज तो गलत प्रतिस्पर्धा के कारण विश्व पर्यावरण विषाक्त बनता जा रहा है।

वेद का स्पष्ट निर्देश है कि लोग प्रकृति के प्रति श्रद्धा पूर्ण श्रद्धा रखें और पर्यावरण को शुद्ध बनाने बनाए रखने में अपना योगदान अवश्य देते रहें। आनंदमय जीवन व्यतीत करने के निमित्त उससे पर्यावरण की अनुकूलता प्राप्त करते रहें। इस विषय में ऋग्वेद के ऋषि ने अपना अशीर्वादात्मक उद्गार दिया है। वे कहते हैं -

"पृथ्वी: पू: च भव।"

अर्थात् समग्र पृथ्वी, संपूर्ण परिवेश परिशुद्ध रहे, नदी, पर्वत, वन, उपवन ये सब स्वस्थ रहें। गांव, नगर सबको विस्तृत और उत्तम परिचय प्राप्त हो, तभी जीवन का सम्यक विकास हो सकेगा।

वेदों में पर्यावरण - संतुलन का महत्व अनेक प्रसंगों में व्यंजित है। महावेदश महर्षि यास्क ने अग्नि को पृथ्वी - स्थानीय, वायु को अंतरिक्ष स्थानीय एवं सूर्य को द्युस्थानीय देवता के रूप में महत्वा देकर संपूर्ण पर्यावरण को स्वच्छ विस्तृत तथा संतुलित रखने का भाव व्यक्त किया है।

शुक्ल - यजुर्वेद का शाश्वत संदेश है, मधुयुक्त सरस - शुद्ध पवन गतिशील रहे, सागर मधुपूर्ण वर्षण करें, रात के साथ - साथ दिन भी मधुर रहे, पृथ्वी की धूल से लेकर अंतरिक्ष तक मधु संयुक्त हो। सूर्य मधुमय रहे, गाय मधुर देने वाली हो। निखिल ब्रह्मांड मधुमय रहे। (शुक्ल यजुर्वेद 13.2729)

हमारे वैदिक ऋषि मनीषी पर्यावरण रक्षण के प्रति बहुत जागरूक एवं सावधान रहे हैं। पर्यावरण रक्षण का अभिप्राय ही स्वयं की रक्षा करना है। अतः स्वकीय रक्षा हेतु यह पर्यावरण रक्षणीय है, इसी दृष्टि से उन्होंने प्रकृति की देवताभाव से उपासना की। अतः इस प्रकार वेद - निरूपित पर्यावरण - संरक्षण, स्वस्थ एवं विकसित जीवन का अन्यतम निर्देशन है।

Word of the Month

अस्तित्ववाद (Existentialism) यह एक मनुष्य केंद्रित दर्शन है। जो व्यक्ति के अस्तित्व, आजादी और चुनाव को महत्व देता है। इस दार्शनिक विचारधारा के अनुसार मनुष्य का महत्व उसकी आत्मनिष्ठता में है। विज्ञान, तकनीक और बुद्धि वादी दार्शनिकों ने मनुष्य को एक वस्तु बना दिया है जबकि मनुष्य स्वतंत्र प्राणी है और स्वतंत्रता का अर्थ है बिना किसी बाहरी दबाव के चयन की स्वतंत्रता। सोरेन कीर्कगार्ड, यास्पर्स, मार्टिन हाइडेगर, सार्त्र, कामू, काफ़का आदि अस्तित्ववादी दार्शनिक और चिंतक हैं। सार्त्र का कथन है -Existence comes before essence. यानी अस्तित्व सार से पहले है।

यह न्यूज लेटर पूरी तरह अव्यवसायिक है तथा इसका प्रकाशन मानविकी एवं समाज विज्ञान परिषद के सदस्यों द्वारा छात्र हित में किया गया है।

संचेतना

विवेक युक्त आस्था, आस्था सहित विवेक

मानविकी एवं समाज विज्ञान परिषद

HUMANITIES AND SOCIAL SCIENCE COUNCIL

राजकीय स्नातकोत्तर महाविद्यालय नई दिल्ली, दिल्ली गढ़वाल

मासिक ई न्यूजलैटर

अंक VIII, अगस्त 2022

संपादकीय

प्रिय पाठकों !

संचेतना का अगस्त माह का आठवां अंक आपके हाथों में है। इस अंक के लिए एम. ए. द्वितीय सेम.के छात्र विकास बहुगुणा ने पर्यावरण प्रभाव आकलन पर एक समीक्षात्मक लेख लिखा है और शिवांशी उनियाल का लेख एकाउंटिंग के सिद्धांतों के बारे में बताता है। शेष दो आलेख प्राध्यापकों के हैं। संचेतना के पीछे अवधारणा यह थी कि यह छात्रों के लिए रचनात्मक लेखन का एक ऐसा मंच बन सके जिसमें प्राध्यापकों की भूमिका कम से कम हो और छात्रों की अधिक। अगले अंक से प्रयास करेंगे कि इसमें छात्र अधिक से अधिक लिखें और प्रत्येक अंक में केवल एक आलेख किसी भी एक प्राध्यापक का हो। छात्रों की रचनात्मक और लेखन प्रतिभा को संवारने का मंच संचेतना बन सके, ऐसी हमारी कोशिश रहेगी। छात्र-छात्राओं के बीच संचेतना का क्या प्रभाव पड़ रहा है और छात्र इसमें लिखने के लिए कितने उत्साहित हैं इस संबंध में एक फीडबैक प्राप्त करने की योजना बनाया जाना भी आवश्यक है। 28 अगस्त को मशहूर शायर फिराक गोरखपुरी की जयंती है तब तक के लिए उन्हीं के शब्दों में -

इसी खंडहर में कहीं कुछ दिए हैं टूटे हुए,
इन्हीं से काम चलाओ बड़ी उदास रात है।

सभी पाठकों को स्वतंत्रता दिवस की 75 वीं वर्षगांठ पर शुभकामनाओं एवं नए शैक्षणिक सत्र के लिए नए एवं पुराने छात्र-छात्राओं का मानविकी एवं समाज विज्ञान परिषद द्वारा स्वागत के साथ.... शेष अगले अंक में।

संजीव सिंह नेगी।



Eight Monthly Lecture by Dr Hemlata Bisht on Topic- बौद्धिक सम्पदा अधिकार



9th Monthly Lecture by Dr Indira Jugran on Topic- संस्कृत दिवस: इतिहास एवं महत्व



रीडिंग रूम के उद्घाटन में सम्मिलित शिक्षक एवं छात्र-छात्रायें।

कला और मानविकी परिषद की माह जुलाई-अगस्त की गतिविधियां

दिनांक 26.07.2022 को बौद्धिक सम्पदा अधिकार विषय में डॉ हेमलता बिष्ट, असि0प्रो0 वनस्पति विज्ञान ने अपना व्याख्यान दिया। उन्होंने बताया कि विश्व बौद्धिक सम्पदा संगठन ने सर्वप्रथम बौद्धिक सम्पदा अधिकार के प्रयास किए। भारत सहित इसमें 193 देश सदस्य हैं। इस अधिकार के माध्यम से सृजनकर्ता को पहचान प्राप्त होती है, साथ ही उसे इस माध्यम से अर्थ की प्राप्ति भी संभव हो पाई है। डॉ हेमलता ने बौद्धिक सम्पदा अधिकार के अन्तर्गत पेलारिज्म और रॉयल्टी की अवधारणा की भी चर्चा की। साथ ही बताया कि कॉपीराइट और पेटेंट में अंतर होता है। प्राचीनकाल से उपयोग में लाए जाने वाले हल्दी, नीम तथा तुलसी जैसी औषधीय गुणों वाली वनस्पति के पेटेंट सम्बन्धी विवाद के लिए भारत अन्तरराष्ट्रीय स्तर पर संघर्षरत है।

04.08.2022 को रीडिंग रूम का उद्घाटन प्राचार्य प्रो0 रेनु नेगी द्वारा किया गया।

12.08.2022 संस्कृत दिवस में डॉ इन्दिरा जुगरान, एसो0प्रो0 ने विषय 'संस्कृत दिवस : इतिहास एवं महत्व' पर अपना व्याख्यान दिया। उन्होंने कहा कि भारत की तो प्रतिष्ठा है -संस्कृत और संस्कृति। संस्कृत दिवस हर वर्ष श्रावणी को मनाया जाता है। सन् 1969 को पहली बार इस दिन को व्यवहार में लाया गया।

श्रीलंका में आर्थिक संकट का एक विश्लेषण डॉ0 हर्ष सिंह असिस्टेंट प्रोफेसर, अर्थशास्त्र

एक देश का शक्तिशाली होने का आधार उसकी प्रति व्यक्ति आय एवं जी0डी0पी0 वृद्धिदर होती है। विश्व के देशों को प्रति व्यक्ति आय या आर्थिक सम्पन्न के आधार पर विकसित, विकासशील एवं अल्प विकसित श्रेणी में बांटा जाता है। विकसित देशों जैसे फ्रांस, अमेरीका,

जापान आदि की प्रति व्यक्ति आय बहुत अधिक है, जबकि विकासशील देशों जैसे भारत, चीन, बांग्लादेश, ब्राजील आदि प्रति व्यक्ति आय विकसित देशों की अपेक्षा कम है। विश्व में आर्थिक रूप से पिछड़े देश उच्च आर्थिक विकास दर को प्राप्त करने के लिए संघर्षरत हैं, ताकि विभिन्न आर्थिक समस्याओं जैसे भुखमरी, बेरोजगारी, आर्थिक असमानता आदि से निजात मिल सके। इन देशों के सामने सबसे बड़ी चुनौती पर्यावरण संरक्षण के साथ उच्च आर्थिक विकास दर प्राप्त हासिल करना है। इतिहास इस बात का साक्ष्य है कि पिछले 100 वर्षों में अनेक आर्थिक संकट पैदा हुए। 1929 की विश्वव्यापी मंदी हो, 2008 का वित्तीय संकट अथवा 2019 में कोविड-19 के कारण उत्पन्न आर्थिक संकट इन सभी आर्थिक एवं गैर आर्थिक घटनाओं ने विश्व अर्थव्यवस्था को बुरी तरह प्रभावित किया। कोविड-19 ये प्रभावित विभिन्न देशों की अर्थव्यवस्थायें जहां एक ओर इस आर्थिक संकट से उभरने की ओर अग्रसर हैं, वहीं दूसरी ओर हमारा पड़ोसी देश एक बड़े राजीतिक एवं आर्थिक संकट के दलदल में फसा हुआ है। श्रीलंका की आबादी 2.19 करोड़ एवं प्रति व्यक्ति आय 3682.04 अमेरिकी डॉलर है। 2020-21 में श्रीलंका की अर्थ व्यवस्था में सेवा क्षेत्र का 58.2 प्रतिशत, औद्योगिक क्षेत्र का 27.4 प्रतिशत एवं कृषि क्षेत्र का 7.4 प्रतिशत योगदान था। कोविड-19 के बाद बन्द पड़ी आर्थिक गतिविधियों एवं गलत आर्थिक नीतियों जैसे कर की दरों में कटौती परिणामस्वरूप राजस्व में भारी कमी एवं राजकोषीय घाटे में वृद्धि, आयतों में वृद्धि के परिणामस्वरूप विदेशी विनियमन की कमी, और्गनिक खेती को बढ़ावा देने के फलस्वरूप खाद्यानों की भारी कमी तथा मांग एवं आपूर्ति में असन्तुलन के कारण उत्पन्न मुद्रास्फीति ने वहां की अर्थ व्यवस्था को आर्थिक संकट के जाल में धकेल दिया। इस आर्थिक संकट से उभरने के लिए श्रीलंका को एक बड़े आर्थिक पैकेज की आवश्यकता है, लेकिन इस आर्थिक संकट से उभरने के लिए श्रीलंका को सर्वप्रथम राजनैतिक स्थिरता को बहाल करना होगा।

YouTube Creators: From Gig Economy To Employment.

Vaibhav Singh Rawat
Assistant Professor, Economics

Circa 2005,

“Alright, so here we are in front of the, uh, elephants, and the cool thing about these guys is that, is that they have really, really, really long, um, trunks, and that’s, that’s cool, and that’s pretty much all there is to say”.

Aforementioned is the transcript of the first video uploaded on the YouTube titled, *“Me at the zoo”*, by its co-founder Jawad Karim. A website made for video sharing has become such a financial behemoth since its acquisition by Google in 2006. Though no one can question its contribution in the lexicon of cultural zeitgeist but what’s surprising is the strides it has made in being a legitimate player for employment generation in the world economy.

This can be particularly deduced from the recent Oxford Economics study titled, *“A Platform for Indian Opportunity: Assessing the Economic, Societal and Cultural Impact of YouTube in India”*. The study utilized 3 anonymized surveys with respondents comprising of 4032 of India based users, 1203 creators and 1020 business. The data collected then captured the impact of YouTube ecosystem in particular its contribution to employment and GDP of India.

Alongside it gives a new nomenclature of *“creative entrepreneurs”* to the creators that meet at least one of the following criteria, i) Earn income directly from YouTube and/or wider income helped by their YouTube presence, ii) Permanently hire paid employees to work on their channel, iii) Have more than 10,000 subscribers to their largest channel.

The study showed that the YouTube creative ecosystem contributed INR 6,800 Cr to the Indian economy in 2020 and supported 6,83,900 fulltime equivalent jobs.

The YouTube creative ecosystem’s total economic impact can further be subdivided into **direct**, **indirect**, **induced**, and **catalytic impacts**.

Wherein **direct economic impact** of the YouTube’s ecosystem in India refers to the profits and earnings of the creators which nothing but the revenue the platform redistributes to its creators, which can include ad sales, payouts from eight alternative monetization features such as channel memberships and Super Chat, and royalty payments paid to music and media companies.

The **indirect economic impact** of the YouTube’s ecosystem in India entails the money spent on goods and services by the creators for producing new content for YouTube which creates a supply chain of its own.

When creators and other employees of YouTube's creative ecosystem, or its supply chain (including video editors, graphic designers, producers etc.), go on to spend their earnings. This activity creates a further **induced economic impact** in the economy.

In addition, the revenues that YouTube creators earn from other sources that are stimulated by their YouTube presence. This includes increased product sales, brand partnerships, or live performance engagements. Like Ganesh Gopal Pie whose YouTube channel Don't Memorise has more than 23 lakhs subscribers, the visibility he got from YouTube helped him license his content to various EdTech companies (Vedantu, Oxford University Press etc.) in India, while ad revenue and the YouTube Learning Fund helped him create even more content for his students, his presence on YouTube also helped him sell affordable micro-courses through DontMemorise.com. These "off-platform" revenues create a **catalytic impact** on the economy, stimulating additional indirect and induced impacts through supply chain activity and wage expenditure.

Thus the growing YouTube community is generating a huge amount of economic value in India, not just for creators but also for businesses, employees, and consumers across the country.

पर्यावरण प्रभाव आंकलन

विकास बहुगुणा

एम0ए0 II सेमैस्टर

देश में विकास करने के लिए भारत सरकार ने पिछले कुछ वर्षों में कई नई योजनाओं की शुरुआत की, जिसके कारण पर्यावरण अधिक मात्रा में प्रदूषित होने लगा। पर्यावरण की होने वाली हानियों को देखते हुए सरकार तथा आम जनता विकास की परियोजनाओं के प्रभाव को लेकर चिंता जताने लगी। विकास परियोजनाओं के कारण पर्यावरण की होने वाली हानियों का आंकलन करने के लिए पर्यावरण प्रभाव आंकलन (EIA) का गठन किया गया।

संयुक्त राष्ट्र पर्यावरण (UNEP) के अनुसार 'पर्यावरण प्रभाव आंकलन' को निर्णय लेने से पूर्व किसी परियोजना के पर्यावरणीय सामाजिक और आर्थिक प्रभावों की पहचान करने हेतु उपयोग किए जाने वाले उपकरण के रूप में परिभाषित किया जाता है।

पर्यावरण प्रभाव आंकलन को प्रमुख रूप से एक महत्वपूर्ण विनिमय कहा जाता है, जिसके माध्यम से

पर्यावरण पर विभिन्न परियोजनाओं, भूमि उपयोग, वन संरक्षण और जल प्रदूषण आदि के प्रभावों का पूर्ण रूप से अध्ययन किया जाता है। जो कि विकास परियोजनाओं पर निर्णय लेने में एक विकल्प के तौर पर कार्य करता है। वहीं पर्यावरण प्रभाव आंकलन अब 30 वर्षों में परियोजनाओं के लिए आवश्यक कर दिया गया है।

इन्हें पर्यावरणीय मंजूरी तभी प्रदान की जाती है जब वे EIA के शर्तों को पूरा करते हैं। इन्हें यह मंजूरी पर्यावरण मंत्रालय भारत सरकार द्वारा प्रदान की जाती है। भारत सरकार द्वारा मंजूरी प्राप्त करने वाली प्रमुख परियोजनाओं में उद्योग, खनन, थर्मल पावर प्लांट, नदी घाटी परियोजना (हाइड्रो पावर प्लांट) न्यूक्लियर पावर परियोजनाएं आदि आती हैं।

पर्यावरण प्रभाव आंकलन का लक्ष्य परियोजना नियोजन और डिजाइन के प्रारंभिक चरण में पर्यावरणीय प्रभावों की भविष्यवाणी करना, प्रतिकूल प्रभावों को कम करने के तरीके और साधन खोजना, परियोजनाओं को स्थानीय पर्यावरण के अनुरूप आकार देना और निर्णय निर्माताओं के लिए विकल्प प्रस्तुत करना है।

भारत में पर्यावरण प्रभाव आंकलन की आवश्यकता सर्वप्रथम 1976-77 में तब महसूस की गई, जब योजना आयोग (वर्तमान नीती आयोग) ने विज्ञान एवं प्रौद्योगिकी विभाग की नदी घाटी परियोजनाओं की पर्यावरणीय दृष्टि से जांच करने को कहा। पहली पर्यावरणीय प्रभाव आंकलन अधिसूचना वर्ष 1994 में तत्कालीन पर्यावरण एवं वन मंत्रालय (वर्तमान पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय) द्वारा स्थापित की गई थी। इस अधिसूचना के माध्यम से किसी भी निर्माण गतिविधि के विस्तार या आधुनिकीकरण या अधिसूचना की अनुसूची 1 में सूचीबद्ध की नई परियोजना की स्थापना के लिए पर्यावरण मंजूरी को अनिवार्य बना दिया गया।

वर्ष 2006 में इन कानूनों में कुछ सुधार किए गए, जिसके पश्चात पर्यावरण प्रभाव आंकलन के बाद ही किसी परियोजना के निर्माण को हरी झंडी देने की व्यवस्था की गई, जो आज तक लागू है। वर्तमान प्रक्रिया के अनुसार नया प्रोजेक्ट लगाने या किसी परियोजना के विस्तार हेतु पहले पर्यावरण स्वीकृति लेनी आवश्यक है। परन्तु वर्ष 2020 में लाए गए पर्यावरण प्रभाव आंकलन मसौदा (2020) की कमियों की ओर इंगित करते हुए पर्यावरण के क्षेत्र में कार्य करने वाले कुछ गैर सरकारी संगठनों और पर्यावरणविदों ने यह आरोप लगाया है कि सरकार के द्वारा लाया गया

यह मसौदा पर्यावरण प्रभाव आंकलन के मूल प्रावधानों को कमजोर करता है, जो पर्यावरण को नकारात्मक रूप से प्रभावित कर सकता है। क्योंकि EIA अधिसूचना 2020 ऐसी परियोजनाओं के प्रवेश को भी सक्षम बनाती है जिनको कभी क्लीयरेंस मिला ही नहीं और उनके द्वारा लापरवाह तरीके से निर्माण कार्य भी किए गए हैं। इसके अतिरिक्त उल्लंघनों के लिए जुर्माना बहुत ही मामूली कर दिया गया है।

फ्राईडे फॉर फ्यूचर इंडिया (FFF) भारत में पर्यावरण संरक्षण हेतु एक जन आंदोलन (अथवा संस्था) है। इस संस्था ने हाल ही में भारत सरकार द्वारा जारी नए EIA 2020 मसौदे को लेकर अपनी चिंताएं जाहिर की हैं, इसके लिए इस संस्था ने कई पर्यावरण आंदोलन भी किए हैं। कोविड-19 महामारी के दौरान भारत सरकार ने पर्यावरण प्रभाव आंकलन 2020 के मसौदे को सार्वजनिक किया है ताकि जनता की राय इस पर जानी जा सके और उनके सुझावों को पर्यावरणविदों के द्वारा रेखांकित की गई चिंताओं पर गम्भीरता से विचार करना चाहिए।

Tally: A Gateway To The Accounting Principles.

Shivanshi Uniyal, B.A. IInd Year

Every business organization in order to determine its annual financial report, needs certain accounting principles to ascertain net and gross profits during the year. Without these principles no organization can run its functions effectively. Accounting principles are the language of business. It records business transactions with a view to prepare final statements, hence helping owners and creditors in making economic decisions.

The main functions of accounting are, keeping systematic records of financial transactions, protecting properties of the business communicating results of the statements to the interested parties like, proprietors, investors, creditors, employees, government officials etc. The process of accounting is followed by first recording financial transactions into the journal, then from the journal entries a particular and individual accounts are opened in the ledger books, then trial balances are made and finally trading and, profit and loss accounts are made with the balance sheet of the year. This whole accounting process is known as accounting cycle, which is repeated in each subsequent year. The principles of accounting are classified into two categories, accounting concepts and accounting conventions.

Accounting concepts are related to business entity money measurement cost and time, whereas accounting conventions are related to financial statements disclosure and conservation of financial statements. To have a basic knowledge of general accounting “Tally” is helpful. Tally is the most powerful integrated accounting. It is the practical way of performing and making various accounting books of a business entity. Tally is usually done either on Windows or DOS prompt, after its installation the tally screen has three areas, the actual work area (consisting menus, masters and reports), the direct command area (to give commands) and, the keys (to perform functions).

For the gateway of tally to work, first a company is selected and then various functions are performed such as, creating accounts, entering vouchers, viewing and printing reports under primary choices such as, accounts information, inventory, voucher entry, balance sheet, stock statement and display. Under accounts information various accounts groups are made then ledgers are made, the cost categories are determined. Under inventory information, entry is done with viewing reports.

Nowadays, many organizations have adopted simple Tally software to deal with their accounts. It is simple and easy to use, operates with speed, non time-consuming and cost-effective, and it is widely used for monetary control, invoicing, reporting and sales management.

Word of the Month

laissez-faire, (French: “allow to do”) policy of minimum governmental interference in the economic affairs of individuals and society. The origin of the term is uncertain, but folklore suggests that it is derived from the answer Jean-Baptiste Colbert, comptroller general of finance under King Louis XIV of France, received when he asked industrialists what the government could do to help business: “Leave us alone.” The doctrine of laissez-faire is usually associated with the economists known as Physiocrats, who flourished in France from about 1756 to 1778. The policy of laissez-faire received strong support in classical economics as it developed in Great Britain under the influence of the philosopher and economist Adam Smith

यह न्यूज लेटर पूरी तरह अव्यवसायिक है तथा इसका प्रकाशन मानविकी एवं समाज विज्ञान परिषद के सदस्यों द्वारा छात्र हित में किया गया है।