गुरू जम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय, हिसार

बी.ए. प्रथम सेमेस्टर

HINC 101: हिन्दी अनिवार्य

समय 3 घण्टे

कुल अंक 100
लिखित परीक्षा 80 अंक
आन्तरिक मूल्यांकन 20 अंक

- ❖ मध्यकालीन काव्य कुंज
- ❖ हिन्दी साहित्य का आदिकाल
- ❖ काव्य शास्त्र पर आधारित विषय
- ❖ वस्तुनिष्ठ :–

- • पाठ्यक्रम में निर्धारित कवि :– कबीरदास, सूरदास, तुलसीदास, मीरॉबाई, बिहारीलाल, घनानन्द, रसखान।
- • पाठ्यक्रम में निर्धारित कवियों की सप्रसंग व्याख्या एवं साहित्यिक परिचय पर परीक्षार्थियों से प्रश्न पूछे जाएंगे।
- • आलोचनात्मक प्रश्न :– पाठ्यक्रम में निर्धारित कवियों के अनुभूतिगत वैशिष्टय तथा अभिव्यक्तिगत सौष्ठव पर ही परीक्षा में प्रश्न पूछे जाएंगे।
- • हिन्दी साहित्य का आदिकाल :–

1. हिन्दी साहित्य इतिहास लेखन परम्परा।
2. हिन्दी साहित्य के इतिहास का काल विभाजन।
3. आदिकाल का नामकरण।
4. आदिकाल की परिस्थितियॉं।
5. रासों काव्य परम्परा और प्रवृतियॉं।
6. सिद्ध साहित्य परम्परा और प्रवृतियॉं।
7. नाथ साहित्य परम्परा और प्रवृतियॉं।
8. जैन साहित्य परम्परा और प्रवृतियॉं।

- • काव्य शास्त्र पर आधारित विषय :–

1. काव्य के तत्व।
2. रस का स्वरूप, अवयव।
3. रस के भेद।
4. रस निष्पति।
5. काव्यगुण :– प्रसाद, माधुर्य, ओज।
6. शब्द शक्तियॉं :– अभिधा, लक्षणा, व्यंजना।

7. अलंकार :– अनुप्रास, श्लेष, यमक, उपमा, रूपक, अतिश्योक्ति, मानवीकरण, अन्योक्ति, समासोक्ति।
8. छन्द :– दोहा, चौपाई, सोरठा, बरवै, कुण्डलियां, छप्पय, कवित्त, घनाक्षरी।

पाठ्यक्रम निर्देश और अंक विभाजन

1. सम्पूर्ण पाठ्यक्रम से 10 वस्तुनिष्ठ प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न के लिए 2 अंक होगें। पूरा प्रश्न 20 अंक का होगा। इस प्रश्न में कोई विकल्प नहीं दिया जाएगा। परीक्षार्थियों को 10 से 15 शब्दों में इसका उत्तर लिखना होगा।

2.(क) पाठ्यक्रम में निर्धारित पुस्तक मध्यकालीन काव्य कुंज से व्याख्या के लिए चार प्रद्यांश दिये जाएंगे। परीक्षार्थियों को 2 प्रद्यांशों की सप्रसंग व्याख्या करनी होगी। प्रत्येक व्याख्या 5 अंक की होगी। पूरा प्रश्न 10 अंक का होगा।

(ख) पाठ्यक्रम में निधारित कवियों में से 2 का परिचय दिया जाएगा। परीक्षार्थियों को एक प्रश्न का उत्तर लिखना होगा। यह प्रश्न 5 अंक का होगा।

3.(क) निर्धारित पाठ्य पुस्तक से 2 आलोचनात्मक प्रश्न दिए जाएंगे। परीक्षार्थी को एक प्रश्न का उत्तर देना होगा। इसके लिए निर्धारित अंक 7 होगें।

(ख) परीक्षार्थियों को 4 लघुतरी प्रश्नों में से 2 के उत्तर देने होंगे। प्रत्यके प्रश्न के लिए 4 अंक और पूरा प्रश्न 8 अंक का होगा।

4.(क) आदिकाल पर आधारित 2 प्रश्नों में से परीक्षार्थियों को 1 प्रश्न का उत्तर देना होगा। जिसके लिए 7 अंक निर्धारित होंगे।

(ख) आदिकाल पर आधारित 4 लघुतरी प्रश्न पूछे जाएगे। परीक्षार्थियों को 2 प्रश्नों के उत्तर लिखने होंगे। प्रत्येक प्रश्न के लिए 4 अंक होंगे। पूरा प्रश्न 8 अंक का होगा।

5.(क) काव्यशास्त्र पर आधारित 2 प्रश्न दिए जाएंगे। परीक्षार्थियों का 1 का उत्तर लिखना होगा इसके लिए 7 अक निर्धारित होंगे।

(ख) इस प्रश्न में काव्यशास्त्र पर आधारित 4 लघुतरी प्रश्न पूछे जाएंगे। परीक्षार्थियों को 2 प्रश्नों के उत्तर लिखने होंगे। प्रत्येक प्रश्न के लिए 4 अंक और पूरा प्रश्न 8 अंक का होगा।

गुरू जम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय, हिसार

बी.ए. द्वितीय सेमेस्टर

HINC 102: हिन्दी अनिवार्य

समय 3 घण्टे

कुल अंक 100
लिखित परीक्षा 80 अंक
आन्तरिक मूल्यांकन 20 अंक

निर्धारित पाठ्यक्रम एवं अंक विभाजन :–

- ध्रुवस्वामिनी (नाटक) : जय शंकर प्रसाद।
- हिन्दी साहित्य का भक्तिकाल।
- व्यावहारिक हिन्दी।
- वस्तुनिष्ठ प्रश्न।

○ ध्रुवस्वामिनी (नाटक) से आलोचनात्मक प्रश्न :–

1. ध्रुवस्वामिनी नाटक का प्रतिपाद्य।
2. ध्रुवस्वामिनी नाटक की पात्र योजना।
3. ध्रुवस्वामिनी नाटक की अभिनेयता।
4. ध्रुवस्वामिनी नाटक की संवाद योजना।
5. ध्रुवस्वामिनी नाटक की भाषा शैली।
6. ध्रुवस्वामिनी नाटक का उद्देश्य।

○ हिन्दी साहित्य का भक्तिकाल

1. भक्तिकाल की परिस्थितियाँ।
2. संत काव्य की प्रवृतियाँ।
3. सूफी काव्य की प्रवतियां।
4. राम काव्य की प्रवृतियाँ।
5. कृष्ण काव्य की प्रवृतियाँ।
6. भक्तिकाल : स्वर्णयुग।

○ व्यवहारिक हिन्दी:–

1. भाषा की परिभाषा।
2. भाषा के विविध रूप : बोली, मानक भाषा, राष्ट्र भाषा, माध्यम भाषा, मातृ भाषा।
3. मानक भाषा की प्रमुख प्रवृतियाँ।
4. हिन्दी वर्णमाला : स्वर एवं व्यंजन।
5. हिन्दी वर्तनी समस्या और समाधान।
6. मुहावरे एवं लोकोक्तियाँ।

पाठ्यक्रम निर्देश एवं अंक विभाजन

1. सम्पूर्ण निर्धारित पाठयक्रम से 10 वस्तुनिष्ठ प्रश्न पूछे जाएगे। पत्येक प्रश्न के लिए दो अंक होंगे। पूरा प्रश्न 20 अंक का होगा। इस प्रश्न में कोई विकल्प नहीं दिया जायेगा। प्रश्न का उत्तर 10 से 15 शब्दों में देना होगा।

2.(क) निर्धारित पाठ्य पुस्तक से 4 अवतरण व्याख्या के लिए दिये जाएंगे इनमें से किन्ही दो की व्याख्या परीक्षार्थियों को करनी होगी। प्रत्येक व्याख्या के लिए 5 अंक और पूरे प्रश्न के लिए 10 अंक होगे।

(ख) ध्रुवस्वामिनी के नाटककार का परिचय, विशेषताएं, नाटय कला और योगदान पर 2 प्रश्न पूछे जाएंगे। परीक्षार्थियों को 1 प्रश्न का उत्तर देना होगा। इस प्रश्न के लिए निर्धारित अंक 5 होगे।

3.(क) निर्धारित पाठ्य पुस्तक एवं आलोचनात्क प्रश्नों में से 2 प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थियों को 1 प्रश्न का उत्तर लिखना होगा। यह प्रश्न 7 अंक का होगा।

(ख) निर्धारित पाठय पुस्तक एवं आलोचनात्मक प्रश्नों मं से 4 लघुतरी प्रश्न पूछे जाएंगे। इनमें से किन्हीं 2 के उत्तर परीक्षार्थियों को लिखने होगे। प्रत्येक प्रश्न 4 अंक का होगा और पूरा प्रश्न 8 अंक का होगा।

4.(क) भक्ति काल पर आधारित 2 प्रश्न पूछे जाएंगे। परीक्षार्थियों को 1 प्रश्न का उत्तर लिखना होगा। इसके लिए 7 अंक होगे।

(ख) भक्तिकाल पर आधारित 4 लघुतरी प्रश्न पूछे जाएंगे। इसमे से परीक्षार्थियों को किन्हीं दो प्रश्नों के उत्तर लिखने होगे। प्रत्येक प्रश्न 4 अंक का और पूरा प्रश्न 8 अंक का होगा।

5.(क) व्यावहारिक हिन्दी पर आधारित पाठ्यक्रम से 2 प्रश्न पूछे जाएंगे। परीक्षार्थियों को 1 का उत्तर लिखना होगा। इसके लिए 7 अंक निर्धारित होंगे।

(ख) व्यावहारिक हिन्दी पर आधारित 4 लघुतरी प्रश्न पूछे जाएंगे। परीक्षार्थियों को इनमे से किन्ही दो के उत्तर देने होंगे। प्रत्येक प्रश्न 4 अंक का और पूरा प्रश्न 8 अंक का होगा।

गुरूजम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय, हिसार

पाठ्यक्रम (हिन्दी अनिवार्य)

बी.ए. द्वितिय वर्ष तृतीय सेमेस्टर

पेपरः ए **HINC 201 : हिन्दी अनिवार्य**

(शैक्षणिक सत्र 2019–20 से लागू)

कुल अंक : 100
लिखित परीक्षा अंक : 80
आन्तरिक मूल्यांकन अंक : 20
समय : 3 घण्टे

- आधुनिक हिन्दी कविता
- हिन्दी साहित्य का रीतिकाल
- प्रयोजनमूलक हिन्दी : हिन्दी कम्प्यूटिंग और अनुवाद
- पाठ्यक्रम में निर्धारित कविः
- पाठ्क्रम में निर्धारित कवियों की सप्रसंग व्याख्या एवं उनके साहित्यिक परिचय पर परीक्षा में प्रश्न पूछे जाएंगे।

1 आलोचनात्मक प्रश्न पाठ्यक्रम में निर्धारित कवियों के अनुभूतिगत वैशेष्टिय तथा अभिव्यक्तिगत सौष्ठव पर ही परीक्षा में प्रश्न पूछें जाएंगें।

2 हिन्दी साहित्य का रीतिकाल

- रीतिकालीन हिन्दी कविता की पृष्ठभूमि/रीतिकाल की परिस्थितियाँ
- रीतिकाल का नामकरण
- रीतिबद्ध काव्य की विशेषताएँ
- रीति मुक्त काव्य की विशेषताएँ
- रीतिकालीन काव्य की उपलब्धियाँ

3 प्रयोजन मूलक हिन्दी : हिन्दी कम्यूटिंग और अनुवाद

- पाठ्क्रम में निर्धारित विषय
- कम्प्यूटर : स्वरूप और महत्व
- ई–मेल : प्रेषण–ग्रहण
- इंटरनेट : स्वरूप और उपयोगिता
- अनुवाद : परिभाषा और स्वरूप, भूमिका, महत्व/प्रकार
- मशीनी अनुवाद

4 वस्तुनिष्ठ प्रश्न–आधुनिक हिन्दी कविता, रीतिकाल, प्रयोजनमूलक हिन्दी : हिन्दी कम्प्यूटिंग एवं अनुवाद।

पाठ्यक्रम निर्देश और अंक विभाजन

1 सम्पूर्ण पाठ्यक्रम से दस वास्तुनिष्ठ प्रश्न परीक्षा में पूछे जाएंगे। प्रत्येक प्रश्न के लिए 2 अंक होंगे। पूरा प्रश्न 20 अंक का होगा इस प्रश्न में कोई विकल्प नहीं दिया जाएगा। परीक्षार्थी को दस–पंद्रह शब्दों में उत्तर लिखना होगा।

2 (क) पाठ्यक्रम में निर्धारित पुस्तक 'आधुनिक हिन्दी कविता' से व्याख्या के लिए चार पद्यांश दिए जांएगे परीक्षार्थियों को दो पद्यांशों की सप्रसंग व्याख्या करनी होगी प्रत्येक व्याख्या 5 अंक की होगी। पूरा प्रश्न 10 अंक का होगा।

(ख) पाठ्यक्रम में निर्धारित कवियों में से दो कवियों का साहित्यिक–परिचय दिया जाएगा। परीक्षार्थियों को एक कवि का साहित्यिक परिचय लिखना होगा यह प्रश्न 5 अंक का होगा।

3. (क) निर्धारित पाठ्य पुस्तक से दो आलोचनात्मक प्रश्न दिए जाएंगे, परीक्षार्थियों को एक प्रश्न का उत्तर लिखना होगा इसके लिए निर्धारित अंक 7 होंगे।

(ख) परीक्षा में चार लघुत्तरी प्रश्न दिए जाएंगे परीक्षार्थियों को इनमें से दो के उत्तर लिखने होंगे। प्रत्येक प्रश्न के 4 अंक होगें और पूरे प्रश्न के लिए 8 अंक होगें।

4. (क) रीतिकाल पर आधारित दो प्रश्न दिए जाएंगे, परीक्षार्थियों को इनमें से एक का उत्तर लिखना होगा जिसके लिए 7 अंक निर्धारित हैं।

(ख) रीतिकाल पर चार लघुत्तरी प्रश्न पूछे जाएंगे, परीक्षार्थियों को दो के उत्तर लिखने होंगे प्रत्येक प्रश्न के लिए 4 अंक और पूरा प्रश्न 8 अंक का होगा।

5. (क) प्रयोजनमूलक हिन्दी कम्प्यूटिंग और अनुवाद खण्ड से दो प्रश्न दिए जाएंगे। परीक्षार्थी को इनमें से एक लिखना होगा। जिसके लिए 7 अंक निर्धारित होंगे।

(ख) प्रयोजनमूलक हिन्दी कम्प्यूटिंग और अनुवाद के अन्तर्गत उपविषयों पर चार लघुत्तरी प्रश्न दिए जाएंगे, परीक्षार्थियों को दो प्रश्नों के उत्तर लिखने होंगे प्रत्येक प्रश्न 4 अंक का होगा पूरा प्रश्न 8 अंक का होगा।

गुरूजम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय, हिसार

पाठ्यक्रम (हिन्दी अनिवार्य)

बी.ए. द्वितिय वर्ष चतुर्थ सेमेस्टर

पेपरः ए **HINC 202 : हिन्दी अनिवार्य**

(शैक्षणिक सत्र 2019–20 से लागू)

कुल अंक : 100
लिखित परीक्षा अंक : 80
आन्तरिक मूल्यांकन अंक : 20
समय : 3 घण्टे

– कथाक्रम : संपादक डॉ. रोहिणी अग्रवाल
– हिन्दी साहित्य का आधुनिक काल : गद्य
– पारिभाषिक शब्दावली
– वस्तुनिष्ठ प्रश्न

(क) पाठ्यक्रम में 'कथाक्रम' से निर्धारित रचनाएं (कहानियाँ)

1. ईदगाह : प्रेमचन्द
2. पुरस्कार : जयशंकर प्रसाद
3. गैंग्रीन : सच्चिदाननद हीरानन्द वात्स्यायन अज्ञेय
4. मलबे का मालिक : मोहन राकेश
5. ठेस : फणीश्वरनाथ रेणु
6. फैसला : मैत्रेयी पुष्पा
7. पच्चीस चौका डेढ सौ : औमप्रकाश वाल्मीकि

(ख) हिन्दी साहित्य का आधुनिक काल :
गद्य पाठ्यक्रम में निर्धारित आलोचनात्मक प्रश्न

- – आधुनिक काल की परिस्थितियाँ
- – हिन्दी उपन्यास उद्भव और विकास
- – हिन्दी कहानी उद्भव और विकास
- – हिन्दी नाटक उद्भव और विकास
- – हिन्दी निबंध उद्भव और विकास

(ग) पारिभाषिक शब्दावली के निर्धारित विषय

- पारिभाषिक शब्दावली का स्वरुप और महत्व
- पारिभाषिक शब्दावली के गुण
- पारिभाषिक शब्दावली के निर्माण में सक्रिय – विविध सम्प्रदाय : राष्ट्रीयतावादी, अन्तर्राष्ट्रीयतावादी, समन्वयवादी।

(घ) वस्तुनिष्ठ प्रश्न : कथाक्रम, हिन्दी साहित्य का आधुनिक काल :
गद्य, पारिभाषिक शब्दावली सम्पूर्ण पाठ्यक्रम में से दिए जाएंगे।

पाठ्यक्रम निर्देश और अंक विभाजन

1. सम्पूर्ण निर्धारित पाठ्यक्रम से दस वस्तुनिष्ठ प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न के लिए दो अंक निर्धारित होंगे, पूरा प्रश्न 20 अंक का होगा। इस प्रश्न में कोई विकल्प नहीं होगा। परीक्षार्थियों को उत्तर 10–15 शब्दों में लिखना होगा।

2. (क) निर्धारित पाठ्यक्रम से चार गद्यांश दिए जाएंगे। परीक्षार्थियों को दो गद्यांशों की सप्रसंग व्याख्या करनी होगी, प्रत्येक व्याख्या के लिए 5 अंक होगें व पूरा प्रश्न 10 अंक का होगा।

(ख) कथाक्रम में दिए गए कहानीकारों का साहित्यिक परिचय पर दो प्रश्न पूछे जाएंगे। परीक्षार्थियों को एक प्रश्न का उत्तर लिखना होगा। इस प्रश्न के लिए 5 अंक निर्धारित होंगे।

3. (क) निर्धारित पाठ्यपुस्तक के आलोचनात्मक प्रश्नों पर आधारित दो प्रश्न पूछे जाएंगे। परीक्षार्थियों को एक प्रश्न का उत्तर लिखना होगा। इस प्रश्न के लिए 7 अंक निर्धारित होंगे।

(ख) निर्धारित पाठ्य पुस्तक के आलोचनात्मक प्रश्नों में से चार लघुत्तरी प्रश्न पूछे जाएंगे। परीक्षार्थियों को इनमें से दो के उत्तर लिखने होंगे, प्रत्येक प्रश्न के लिए 4 अंक और पूरा प्रश्न 8 अंक का होगा।

4. (क) आधुनिक काल :

गद्य पर आधारित पाठ्यक्रम में से दो प्रश्न पूछे जाएंगे। परीक्षार्थियों को इनमें से एक का उत्तर लिखना होगा, इसके लिए 7 अंक निर्धारित होंगे।

(ख) आधुनिक काल :

गद्य पर आधारित चार प्रश्न पूछे जांएगे। परीक्षार्थियों को दो प्रश्नों का उत्तर लिखना होगा। प्रत्येक प्रश्न 4 अंक का होगा और पूरा प्रश्न 8 अंक का होगा।

5. (क) पारिभाषिक शब्दावली पर आधारित तीन प्रश्न परीक्षा में पूछे जाएंगे। परीक्षार्थियों को इनमें से एक का उत्तर देना होगा, इसके लिए 7 अंक निर्धारित होंगे।

(ख) पारिभाषिक शब्दावली पर आधारित चार लघुत्तरी प्रश्न परीक्षा में पूछे जाएंगे। परीक्षार्थियों को इनमें से दो के उत्तर लिखने होंगे। प्रत्येक प्रश्न के लिए 4 अंक होगें और पूरा प्रश्न 8 अंक का होगा।

गुरु जम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय हिसार

पाठ्यक्रम हिन्दी (अनिवार्य)

बी.ए. तृतीय वर्ष पाचवाँ समेस्टर

पेपर – ए **HINC 301- हिन्दी (अनिवार्य)**

(शैक्षणिक सत्र 2019–20 से लागू)

कुल अंक : 100
लिखित परीक्षा : 80
आन्तरिक मूल्यांकन : 20
समय : 3 घण्टे

ω निर्धारित पाठ्यक्रम

- समकालीन हिन्दी साहित्य पर आधारित पाठ्य पुस्तक
- हिन्दी साहित्य का आधुनिक काल– कविता
- प्रयोजनमूलक हिन्दीः पत्र लेखन, संक्षेपण तथा पल्लवन

(क) पाठ्य पुस्तक में निर्धारित रचनाकार

1. सच्चिदानन्द हीरानन्द वात्स्यायन 'अज्ञेय'
2. धर्मवीर भारती
3. श्री नरेश मेहता
4. नागार्जुन
5. रघुवीर सहाय
6. कुवरनारायण
7. लीलाधर जगूड़ी

ω पाठ्यक्रम में निर्धारित कवियों पर उनके साहित्यिक परिचय, अनुभूतिगत वैशिष्टय तथा अभिव्यक्तिगत सौष्ठव पर ही प्रश्न पूछे जाएँगे। कवियों की विशिष्ट रचनात्मक प्रवृति पर प्रश्न नहीपूछे जाएंगे।

(ख) हिन्दी साहित्य का आधुनिक काल : कविता पाठ्यक्रम में निर्धारित आलोचनात्मक प्रश्न

1. भारतेन्दुयुगीन हिन्दी कविता की प्रवृतियाँ
2. द्विवेदीयुगीन हिन्दी कविता की प्रवृतियाँ
3. छायावाद
4. प्रगतिवाद
5. प्रयोगवाद
6. नयी कविता
7. समकालीन कविता

(ग) प्रयोजनमूलक हिन्दी : पत्र लेखन, संक्षेपण तथा पल्लवन

1. पत्र लेखन स्वरुप और उसके विविध भेद
2. संक्षेपण
3. पल्लवन

(घ) वस्तुनिष्ठ प्रश्न : उर्पयुक्त सम्पूर्ण पाठ्यक्रम में से वस्तुनिष्ठ प्रश्न पूछे जाएँगे।

पाठ्यक्रम निर्देश :

1 खण्ड (क) में निर्धारित पाठ्य पुस्तक में से व्याख्या के लिए चार अवतरण दिए जाएँगे जिनमें से परीक्षार्थियों को किन्ही दो का उत्तर देना होगा। एक व्याख्या के लिए 5 अंक और पूरा प्रश्न 10 अंक का होगा।

2 खण्ड (क) साहित्यकारों पर दो साहित्यिक परिचय दिए जाएँगे परीक्षार्थियों को एक का उत्तर लिखना होगा यह प्रश्न 5 अंक का होगा।

3 खण्ड (क) में से साहित्यिकारों पर दो आलोचनात्मक प्रश्न पूछे जाएँगे परीक्षार्थियों ने एक का उत्तर देना होगा इस प्रश्न के लिए 7 अंक निर्धारित होंगे।

खण्ड (क) पाठ्यक्रम से चार लघुत्तरी पूछे जाएँगे परीक्षार्थियों को दो प्रश्नों के उत्तर देने होंगे। प्रत्येक प्रष्न के लिए 4 अंक और पूरा प्रष्न 8 अंक का होगा।

4 खण्ड (क) हिन्दी साहित्य का आधुनिक काल में दो आलोचनात्मक प्रश्न पूछे जाँएगे परीक्षार्थियों को एक प्रश्न का उत्तर लिखना होगा यह प्रश्न 7 अंक का होगा।

(ख) खण्ड (ख) आधुनिक साहित्य से चार लघुतरी प्रश्न पूछे जाँएगे परीक्षार्थियों को दो प्रश्नों के उत्तर देने होंगे परीक्षार्थियों को दो प्रश्न का उत्तर लिखने होंगे पूरा प्रश्न 8 अंक का होगा।

5 खण्ड (ग) प्रयोजनमूलक हिन्दी में से दो प्रश्न पूछे जाँएगे परीक्षार्थियों को एक प्रश्न का उत्तर लिखना होगा यह प्रश्न 7 अंक का होगा।

(ख) खण्ड (ग) पाठ प्रयोजन मूलक हिन्दी में से चार लघुत्तरी प्रश्न पूछे जाँएगे परीक्षार्थियों को दो के उत्तर देनें होंगे प्रत्येक प्रश्न 4 और पूरा प्रश्न 8अंक का होगा।

6 खण्ड (घ) सम्पूर्ण पाठ्यक्रम में से दस वस्तुनिष्ठ प्रश्न पूछे जाँएगे परीक्षार्थियों ने सभी दस का उत्तर लिखना है। प्रत्येक प्रश्न 2 अंक और पूरा प्रश्न 20 अंक का होगा। प्रश्न का उत्तर लगभग 50 शब्दों में देना होगा।

गुरु जम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय हिसार

पाठ्यक्रम हिन्दी (अनिवार्य)

बी.ए. तृतिय वर्ष छटवाँ समेस्टर

पेपर – ए **HINC 302- हिन्दी (अनिवार्य)**

(शैक्षणिक सत्र 2019–20 से लागू)

कुल अंक : 100
लिखित परीक्षा : 80
आन्तरिक मूल्यांकन : 20
समय : 3 घण्टे

ω निर्धारित पाठ्यक्रम

- नव्यतर विधाओं पर आधारित पाठ्य पुस्तक
- हरियाणवी भाषा औरसाहित्य का इतिहास
- प्रयोजनमूलक हिन्दी: पत्रकारिता

खण्ड(क) पाठ्यक्रम में निर्धारित रचनाकार एव रचना

1. बालमुकुंदगुप्त : आशाकाअंत(निबंध)
2. आचार्य रामचन्द्र शुकल : उत्साह(निबंध)
3. महादेवी वर्मा : गिल्लू(संस्मरण)
4. आचार्य हजारी प्रसाद द्विवेदी : देवदारू (ललित निबंध)
5. विद्यान निवास मिश्र : मेरेरामकामुकुटभीगरहाहै(ललित निबंध)
6. हरिशंकर परसाई : सदाचारकाताबीज(व्यंग्य)
7. राहुल सांकृत्यायन : तिब्बत के पथपर(यात्रावृत)

ω पाठ्यक्रम में निर्धारित रचनाकारों के साहित्यिक परिचय, निबन्धों के विषय तथा कला पक्ष पर ही प्रश्न पूछे जाँएगे

खण्ड(ख) हरियाणवी भाषा और साहित्य का इतिहास पाठ्यक्रम में निर्धारित विषय

1. हरियाणवी भाषाका उद्भव और विकास
2. हरियाणवी भाषा की प्रमुख बोलियाँ
3. हरियाणा की सांगपरम्परा : उद्भव और विकास
4. हरियाणवी भाषा का आधुनिक पद्य और गद्य साहित्य
5. हरियाणवी आधुनिक कविता : परिचय औरप्रवृत्तियाँ
6. हरियाणवी का गद्य साहित्य : उपन्यास, कहानी, नाट्य

खण्ड(ग) प्रयोजनमूलक हिन्दी : पत्रकारिता

1. पत्रकारिता– स्वरूप और प्रकार
2. शीर्षक की संरचना
3. सम्पादक के गुण और दायित्व
4. फीचर लेखन
5. स्वतन्त्र प्रेस की अवधारणा

खण्ड(घ) सम्पूर्ण पाठ्य क्रम से वस्तुनिष्ठ प्रश्न

ⓓ निर्धारित पाठ्यक्रम का वर्गीकरण और अंक विभाजन

1 खण्ड(क) निर्धारितपाठ्य पुस्तक में से व्याख्या के लिए चार अवतरणदिए जाएँगे, परीक्षार्थियों को किन्ही दो अवतरणों की व्याख्या करनी है प्रत्येकव्याख्या 5 अंक और पूरा प्रश्न 10 अंकका होगा।

2 खण्ड(क) निर्धारित आलोचनात्मक प्रश्नों में से दो प्रश्न पूछे जाएँगे जिनमें से परीक्षार्थियों को एक प्रश्न का उत्तर देना होगा यह प्रश्न 5 अंक का होगा।

3 खण्ड(क) निर्धारित पाठ्य पुस्तक से छः लघुतरी प्रश्न पूछे जाएँगे, परीक्षार्थियों को लगभग 150 शब्दों में किन्ही तीन के उत्तर लिखने होंगे प्रत्येक प्रश्न 5 अंक और पूरा प्रश्न 15 अंक का होगा।

4 खण्ड(ख) निर्धारित आलोचनात्मकप्रश्नों में से दो प्रश्न पूछे जाएँगे परीक्षार्थियों को एक प्रश्न का उत्तर देना होगा यह प्रश्न 7 अंक का होगा।

5 खण्ड(ख) में निर्धारित प्रश्नों में से चार लघुतरी प्रश्न पूछे जाएँगे परीक्षार्थियों ने इनमें से दो के उत्तर लिखने होंगे प्रत्येक प्रश्न 4 अंक और पूरा प्रश्न 8 अंक का होगा।

6 खण्ड(ग) में निर्धारित पाठ्यक्रम में से छः लघुतरी प्रश्न दिए जाएँगे जिनमें से परीक्षार्थियों को तीन प्रश्नों के उत्तर 150 शब्दों में लिखने होंगे प्रत्येक प्रश्न के लिए 5 अंक और पूरा प्रश्न 15 अंक का होगा।

7 खण्ड(ग) में पूरे पाठ्यक्रम से दस लघुत्तरी प्रश्न पूछे जाएँगे प्रत्येक प्रश्न 2 अंक का होगा पूरा प्रश्न 20 अंक का होगा प्रत्येक प्रश्न का उत्तर 25–50 शब्दों में लिखना होगा।

गुरू जम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय, हिसार

बी.ए. प्रथम सेमेस्टर

HINE 101: हिन्दी ऐच्छिक

समय 3 घण्टे

कुल अंक 100
लिखित परीक्षा 80 अंक
आन्तरिक मूल्यांकन 20 अंक

- ❖ कुरूक्षेत्र (षष्ठसर्ग) : रामधारी सिंह दिनकर
- ❖ हानूश (नाटक) : भीषम साहनी
- ❖ हिन्दी साहित्य का इतिहास आदिकाल
- ❖ कुरूक्षेत्र, हानूश और आदिकाल पर आधारित वस्तुनिष्ठ प्रश्न।
- ○ कुरूक्षत्र (षष्ठसर्ग) पर आधारित व्याख्या :–
- • कुरूक्षेत्र पर आधारित आलोचनात्मक प्रश्न।
- • कुरूक्षेत्र की मूल संवेदना।
- • कुरूक्षेत्र की पात्र योजना।
- • कुरूक्षेत्र का काव्य रूप।
- • कुरूक्षेत्र के नामकरण की सार्थकता।
- • दिनकर की काव्यकला।
- ○ हानूश नाटक पर आधारित व्याख्या।
- ○ हानूश नाटक पर आधारित आलोचनात्मक प्रश्न :–
- • हानूश नाटक का उद्देश्य।
- • हानूश नाटक की पात्र योजना।
- • हानूश नाटक के नामकरण की सार्थकता।
- • रंगमंच की दृष्टि से हानूश का मूल्यांकन।
- • भीष्म साहनी की नाट्यकला।
- ○ पाठ्य पुस्तक कुरूक्षेत्र और हानूश पर आधारित आलोचनात्मक प्रश्नों में से लघुतरी प्रश्न।
- ○ हिन्दी साहित्य के आदिकाल पर आधारित पर प्रश्न :–
- • हिन्दी साहित्येतिहास लेखन की परम्परा।
- • आदिकाल का नामकरण।
- • आदिकाल की परिस्थितियाँ।
- • आदिकाल की सामान्य प्रवृतियाँ।
- • रासो काव्य परम्परा।

- पृथ्वीराज रासो की प्रामाणिकता।
- विद्यापति व अमीर खुसरों का साहित्यिक परिचय।

पाठ्यक्रम निर्देश एवं अंक विभाजन

1. प्रथम प्रश्न वस्तुनिष्ठ प्रकृति का होगा। पूरे पाठ्यक्रम से 10 प्रश्न पूछे जाएंगे। जो 2–2 अंक के होगे। पूरा प्रश्न 20 अंक का होगा। इस प्रश्न में कोई विकल्प नहीं दिया जाएगा। परीक्षार्थियों को प्रश्न का उत्तर 10 से 15 शब्दों में देना होगा।

2.(क) पाठ्य पुस्तक कुरूक्षेत्र के छटे सर्ग से व्याख्या के लिए 4 अवतरण दिये जाएंगे परीक्षार्थियों को किन्हीं 2 की व्याख्या करनी होगी। प्रत्येक व्याख्या के लिए 4 अंक और पूरे प्रश्न के लिए 8 अंक होंगे।

(ख) निर्धारित पाठ्य पुस्तक कुरूक्षेत्र के आलोचनात्मक प्रश्नों में से 2 प्रश्न पूछे जायेगें। परीक्षार्थियों को एक का उत्तर लिखना होगा। यह प्रश्न 7 अंक का होगा।

3.(क) निर्धारित पाठ्य पुस्तक हानूश से व्याख्या के लिए 4 अवतरण दिए जाएंगे। परीक्षार्थियों को किन्ही 2 की व्याख्या करनी होगी। प्रत्येक व्याख्या के लिए 4 अंक होंगे और पूरा प्रश्न 8 अंक का होगा।

(ख) नाटक हानूश से 2 आलोचनात्मक प्रश्न दिए जाएगे। परीक्षार्थियों को एक प्रश्न का उत्तर लिखना होगा। यह प्रश्न 7 अंक का होगा।

4. पाठ्य पुस्तक कुरूक्षेत्र एवं हानूश मे से 6 लघुत्तरी प्रश्न पूछे जाएंगे। परीक्षार्थियों को 3 प्रश्नों के उत्तर लिखने होंगे। प्रत्येक प्रश्न 5 अंक और पूरा प्रश्न 15 अंक का होगा।

5.(क) आदिकाल से 2 प्रश्न पूछे जाएंगे। परीक्षार्थियों ने एक का उत्तर लिखना होगा। यह प्रश्न 7 अंक का होगा।

(ख) आदिकाल से 4 लघुतरी प्रश्न पूछे जाएंगे। परीक्षार्थियों को 2 प्रश्नों के उत्तर लिखने होंगे। प्रत्येक प्रश्न 4 अंक का और पूरा प्रश्न 8 अंक का होगा।

गुरू जम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय, हिसार

बी.ए. द्वितीय सेमेस्टर

HINE 102: हिन्दी ऐच्छिक

समय 3 घण्टे

कुल अंक 100

लिखित परीक्षा 80 अंक

आन्तरिक मूल्यांकन 20 अंक

- निर्धारित पाठ्यक्रम :–
- ❖ प्राचीन एवं मध्यकालीन हिन्दी काव्य : डॉ० पूरनचन्द टंडन, राजपाल एण्ड सन्स दिल्ली
- ❖ निर्मला (उपन्यास) : प्रेमचन्द।
- ❖ हिन्दी साहित्य का भक्तिकाल।
- ❖ वस्तुनिष्ठ प्रश्न।
- निर्धारित पाठ्य पुस्तक से निर्धारित कवि :–
- कबीरदास :– प्रथम 30 दोहे।
- जायसी :– सभी पद।
- सूरदास :– भ्रमरगीत पद सख्या 1 से 4,6,9,12
  गोकूल लीला पद संख्या 1,3,6,8,10 (कुल पद 12)
- तुलसीदास :– पुस्तक में संकलित विनयपत्रिका एवं दोहावली से ग्रहित अंश।
- मीरॉबाई :– पद संख्या 1 से 5 16,17,20,23,25 (कुल पद 10)
- बिहारी :– शृगारिक दोहे 1 से 25
- घनानन्द :– प्रथम 8 कवित्त
- प्राचीन एवं मध्यकालीन हिन्दी काव्य :– पाठ्यक्रम में निर्धारित आलोचनात्मक प्रश्न :–
- कबीर की प्रासंगिकता।
- जायसी का विरह वर्णन।

- सूरदास का वात्सल्य वर्णन।
- शृंगार वर्णन।
- तुलसीदास का समन्वयवाद।
- मीरॉबाई की प्रेम साधना।
- बिहारी की बहुज्ञता।
- घनानन्द का वियोग वर्णन।
- सभी कवियों का साहित्यिक परिचय।

○ निर्मला (उपन्यास) पाठ्यक्रम में निर्धारित आलोचनात्मक प्रश्न :–

- निर्मला उपन्यास का प्रतिपाद्य।
- निर्मला की पात्र योजना।
- निर्मला नामकरण की सार्थकता।
- प्रेमचन्द युगीन सामाजिक परिवेश।
- उपन्यास प्रेमचन्द का साहित्यिक परिचय।

○ हिन्दी साहित्य का भक्तिकाल निर्धारित पाठ्यक्रम :–

- भक्ति : उद्भव और विकास।
- भक्तिकाल की परिस्थितियाँ।
- सन्तकाव्य की प्रवृतियाँ।
- सूफी काव्य की प्रवृतियाँ।
- राम काव्य की प्रवृतियाँ।
- कृष्ण काव्य की प्रवृतियाँ।
- अष्टछाप और उसका महत्व।
- भक्तिकाल : स्वर्ण युग।

निर्धारित पाठ्यक्रम का अंक विभाजन

1. पहला प्रश्न वस्तुनिष्ठ प्रकृति का होगा। निर्धारित सम्पूर्ण पाठ्यक्रम से 2–2 अंक के 10 प्रश्न पूछे जाएंगे। पूरा प्रश्न 20 अंक का होगा। इस प्रश्न में

कोई विकल्प नहीं दिया जाएगा। परीक्षार्थियों को 10 से 15 शब्दों में उत्तर देना होगा।

2.(क) यह प्रश्न व्याख्या पर आधारित होगा। पाठ्य पुस्तक से 4 अवतरण दिए जाएंगे। जिनमें से परीक्षार्थियों को किन्हीं दो की सप्रसंग व्याख्या करनी होगी। प्रत्येक व्याख्या के लिए 4 अंक और पूरा प्रश्न 8 अंक का होगा।

(ख) पाठ्य पुस्तक एवं आलोचनात्मक प्रश्नों में से 2 प्रश्न दिए जाएगे। परीक्षार्थियों को एक प्रश्न का उत्तर देना होगा। यह 7 अंक का होगा।

3.(क) उपन्यास निर्मला से व्याख्या के लिए चार अवतरण दिये जाएंगे। जिनमें से परीक्षार्थियों की सप्रसंग व्याख्या करनी होगी। प्रत्येक व्याख्या के लिए 4 अंक और पूरा प्रश्न 8 अंक का होगा।

(ख) उपन्यास निर्मला के आलोचनात्मक प्रश्नों में से 2 प्रश्न दिए जाएंगे। जिनमें से परीक्षार्थियों को किसी एक प्रश्न का उत्तर देना होगा। यह प्रश्न 7 अंक का होगा।

4. पाठ्य पुस्तक प्राचीन एवं मध्यकालीन काव्य और उपन्यास निर्मला से 6 लघुतरी प्रश्न पूछे जाएंगे। परीक्षार्थियों को उनमें से 3 प्रश्नों के उत्तर लिखने होंगे। प्रत्येक प्रश्न के लिए 5 अंक होंगे और पूरा प्रश्न 15 अंक का होगा।

5.(क) भक्तिकाल पर आधारित 2 प्रश्न दिए जाएंगे। परीक्षार्थियों को 1 प्रश्न का उत्तर लिखना होगा। यह प्रश्न 7 अंक का होगा।

(ख) भक्तिकाल पर आधारित 4 लघुतरी प्रश्न पूछे जाएंगे। परीक्षार्थियों को किन्ही 2 के उत्तर लिखन होंगे। प्रत्येक प्रश्न 4 अंक का होगा। पूरा प्रश्न 8 अंक का होगा।

गुरूजम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय, हिसार

पाठ्यक्रम (हिन्दी ऐच्छिक)

बी.ए. द्वितिय वर्ष तृतीय सेमेस्टर

पेपरः ए **HINE 201 : हिन्दी ऐच्छिक**

(शैक्षणिक सत्र 2019–20 से लागू)

कुल अंक : 100
लिखित परीक्षा अंक : 80
आन्तरिक मूल्यांकन अंक : 20
समय : 3 घण्टे

- आधुनिक काव्य – मंजूषा
- कहानी एकादशी : स. दशरथ ओझा
- हिन्दी साहित्य का इतिहास रीतिकाल

पाठ्यक्रम आधुनिक काव्य – मंजूषा के रचनाकार

(1) मैथिलीशरण गुप्त (2) जयशंकर प्रसाद,
(3) सुमित्रानन्दन पंत (4) महादेवी वर्मा
(5) सूर्यकान्त त्रिपाठी, निराला (6) बालकृष्ण शर्मा नवीन
(7) रामधारी सिंह दिनकर

– निर्धारित कवियों के साहित्यिक परिचय उनके काव्य की संवेदनागत तथा शिल्पगत विशेषताओं से संबंधित प्रश्न पूछे जाएंगे। कहानी एकादशी निर्धारित पाठ्यपुस्तक से निम्नलिखित कहानियाँ पाठ्यक्रम में शामिल की गयी हैं।

- ईद का त्यौहार (ईदगाह)– प्रेमचन्द
- छोटा जादूगर – जय शंकर प्रसाद
- पढ़ाई – जैनेन्द्र कुमार
- आदमी का बच्चा – यशपाल
- दरोगा अमीचन्द – अज्ञेय
- दिल्ली में एक मौत – कमलेश्वर
- नई नौकरी – मनू भण्डारी

– पाठ्यक्रम में निर्धारित कहानीकारों के साहित्यक परिचय, निर्धारित कहानियों के प्रतिपाद्य तथा कहानी–कला पर ही प्रश्न पूछे जाएंगे।

– हिन्दी साहित्य का रीतिकालः निर्धारित आलोचनात्मक प्रश्न।

- रीतिकाल की परिस्थितियाँ
- रीतिकालीन हिन्दी कविता के प्ररेणा स्रोत
- रीतिकाल का नामकरण
- रीतिबद्ध काव्य की प्रवृत्तियाँ
- रीतिमुक्त काव्य की प्रवृत्तियाँ
- रीतिकवियों का आचार्यत्व
- रीतिकालीन हिन्दी की उपलब्धियाँ

पाठ्यक्रम निर्देश और अंक विभाजन

1. सम्पूर्ण पाठ्यक्रम से दस वस्तुनिष्ठ पूछे जाएंगे। प्रत्येक प्रश्न 2 अंक का होगा। पूरा प्रश्न 20 अंक का होगा। इस प्रश्न में कोई विकल्प नहीं होगा। परीक्षार्थियों को उत्तर 10–15 शब्दों में लिखना होगा।
2. (क) निर्धारित पाठ्यपुस्तक काव्य मंजूषा से चार पद्यांश व्याख्या के लिए दिए जाएंगे। परीक्षार्थियों को इनमें से दो पद्यांशों की सप्रसंग व्याख्या करनी है, प्रत्येक सप्रसंग व्याख्या 5 अंक की है और पूरा प्रश्न 10 अंक का होगा।

   (ख) निर्धारित कवियों में से दो कवियों का साहित्यिक परिचय पूछा जाएगा। परीक्षार्थियों को एक का उत्तर लिखना होगा, जिसके लिए 5 अंक निर्धारित होंगे।
3. (क) कहानी पर आधारित पाठ्य पुस्तक कहानी 'एकादशी' से सप्रंसग व्याख्या के लिए चार गद्यांश दिए जाएंगे। परीक्षार्थियों को दो गद्यांशों की सप्रसंग व्याख्या करनी होगी, प्रत्येक व्याख्या के लिए 5 अंक होगें और पूरा प्रश्न 10 अंक का होगा।

   (ख) निर्धारित पाठ्यक्रम में से कहानीकारों का साहित्यिक परिचय दिया जाएगा। जिनमें से परीक्षार्थियों को एक का उत्तर लिखना होगा। इसके लिए 5 अंक निर्धारित होंगे।
4. (क) पाठ्यपुस्तक काव्य–मंजूषा और कहानी एकादशी की रचनाओं से छः प्रश्न पूछे जाएंगे। परीक्षार्थियों को तीन प्रश्नों के उत्तर लिखने होंगे। प्रत्येक प्रश्न के लिए 5 अंक और पूरा प्रश्न 15 अंक का होगा।
5. (क) हिन्दी साहित्य के रीतिकाल पर आधारित दो प्रश्न पूछे जाएंगे। परीक्षार्थियों को इनमें से एक का उत्तर लिखना होगा। इसके लिए 7 अंक निर्धारित होंगे।

   (ख) हिन्दी साहित्य के रीतिकाल से सम्बन्धित चार लघुत्तरी प्रश्न पूछे जाएंगे। परीक्षार्थियों को दो प्रश्नों के उत्तर लिखने होंगे, प्रत्येक प्रश्न के लिए 4 अंक और पूरा प्रश्न 8 अंक का होगा।

गुरूजम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय, हिसार

पाठ्यक्रम (हिन्दी ऐच्छिक)

बी.ए. द्वितिय वर्ष चतुर्थ सेमेस्टर

पेपरः ए **HINE 202 : हिन्दी ऐच्छिक**

(शैक्षणिक सत्र 2019–20 से लागू)

कुल अंक : 100
लिखित परीक्षा अंक : 80
आन्तरिक मूल्यांकन अंक : 20
समय : 3 घण्टे

– सुदामा चरित – नरोत्तम दास

– श्रेष्ठ निबन्ध (निबन्ध संग्रह) – सं डॉ. आलोक गुप्त

– हिन्दी साहित्य का आधुनिक काल : कविता

- सुदामाचरित का प्रतिपाद्य
- सुदामाचरित में चरित्र–चित्रण
- सुदामाचरित का युगीन संदर्भ

– ' श्रेष्ठ निबंध ' निबन्ध संग्रह में से निर्धारित निबंध

- दाँत – प्रताप नारायण मिश्र
- साहित्य की महत्ता – महावीर प्रसाद द्विवेदी
- क्रोध – रामचन्द्र शुक्ल
- आचरण की सभ्यता – सरदार पूर्ण सिंह
- गेहूँ बनाम गुलाब – रामवृक्ष बैनीपुरी
- साहित्य और जीवन – नन्ददुलारे वाजपेयी
- देवदारु – हजारी प्रसाद द्विवेदी

– हिन्दी साहित्य का आधुनिक काल : कविता (पद्य भाग)

- आधुनिक हिन्दी कविता का क्रमिक विकास
- आधुनिकालीन हिन्दी साहित्य का परिवेश
- भारतेन्दु युगीन हिन्दी कविता की प्रवृत्तियाँ
- द्विवेदी–युगीन हिन्दी कविता की प्रवृत्तियाँ
- छायावाद
- प्रगतिवाद
- प्रयोगवाद
- नयी कविता
- समकालीन कविता

पाठ्यक्रम निर्देश और अंक विभाजन

1. सम्पूर्ण निर्धारित पाठ्यक्रम से दस वस्तुनिष्ठ पूछे जाएंगे। प्रत्येक प्रश्न दो अंक का होगा। पूरा प्रश्न 20 अंक का होगा। इस प्रश्न में कोई विकल्प नहीं होगा। परीक्षार्थियों को प्रत्येक प्रश्न का उत्तर 10–15 शब्दों में देना होगा।
2. (क) सुदामा चरित से सप्रसंग व्याख्या के लिए चार पद्यांश दिए जाएंगे। परीक्षार्थियों ने दो पद्यांशों की सप्रसंग व्याख्या करनी होगी, प्रत्येक व्याख्या के लिए 5 अंक पूरा प्रश्न 10 अंक का होगा।

   (ख) नरोत्तमदास का साहित्यिक परिचय और सुदामाचरित के काव्य रुप से सम्बन्धित दो प्रश्न पूछे जाएंगे। एक प्रश्न का उत्तर परीक्षार्थियों को लिखना होगा, जिसके लिए 5 अंक होंगे।
3. (क) श्रेष्ठ निबंध–निबंध संग्रह से व्याख्या के लिए चार गद्यांश दिए जाएंगे। परीक्षार्थियों को इनमें से दो की सप्रसंग व्याख्या करनी होगी, प्रत्येक व्याख्या के लिए 5 अंक और पूरा प्रश्न 10 अंक का होगा।

   (ख) श्रेष्ठ निबंध के निबन्धकारों में से दो का साहित्यिक परिचय पूछा जाएगा । परीक्षार्थियों को एक साहित्यिक परिचय लिखना होगा, इसके लिए 5 अंक निर्धारित होंगे।
4. सुदामाचरित और श्रेष्ठ निबन्ध पाठ्य–पुस्तकों से छः लघुत्तरी प्रश्न दिए जाएंगे। परीक्षार्थियों ने तीन प्रश्नों के उत्तर लिखने होंगे, प्रत्येक प्रश्न के पांच अंक होगें और पूरा प्रश्न 15 अंक का होगा।
5. (क) हिन्दी साहित्य का आधुनिक काल कविता (पद्य भाग) पर आधारित दो प्रश्न पूछे जाएंगे। परीक्षार्थियों को एक का उत्तर लिखना होगा, जिसके लिए 7 अंक निर्धारित होंगे।

   (ख) आधुनिक काल कविता (पद्य भाग) पर आधारित चार लघुत्तरी प्रश्न पूछे जाएंगे। परीक्षार्थियों को दो के उत्तर लिखने होंगे। प्रत्येक प्रश्न के 4 अंक होगें और पूरा प्रश्न 8 अंक का होगा।

गुरु जम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय हिसार

पाठ्यक्रम हिन्दी (ऐच्छिक)

बी.ए. तृतिय वर्ष पाचवाँ समेस्टर

पेपर – ए **HINE 301- हिन्दी (ऐच्छिक)**

(शैक्षणिक सत्र 2019–20 से लागू)

कुल अंक : 100
लिखित परीक्षा : 80
आन्तरिक मूल्यांकन : 20
समय : 3 घण्टे

निर्धारित पाठ्यक्रम

1 समकालीन हिन्दी कविता
2 समकालीन हिन्दी कहानी
3 हिन्दी साहित्य का आधुनिक काल : गद्य –15
4 वस्तुनिष्ठ प्रश्न –20

खण्ड(क) समकालीन हिन्दी कविता में निम्नलिखित कवियों की रचनाओं को शामिल किया जाएगा।

1 स. ही. वातस्यायन अज्ञेय
2 धर्मवीर भारती
3 भवानी प्रसाद मिश्र
4 दुष्यंत कुमार
5 रघुवीर सहाय
6 सर्वेश्वरदयाल सक्सेना
7 शमशेर बहादुर सिंह

– निर्धारित आलोचनात्मक प्रश्न

पाठ्यक्रम में निर्धारित कवियों के साहित्यिक परिचय उनकी काव्य संवेदना तथा काव्य शिल्प पर ही प्रश्न पूछे जाएंगे।

खण्ड(ख) समकालीन हिन्दी कहानी में निम्नलिखित कहानीकारों को शामिल किया जाएगा।

1 ज्ञान रंजन
2 काशीनाथ सिंह
3 मृदुला गर्ग
4 पंकज विष्ट
5 स्वंयप्रकाश
6 उदयप्रकाश
7 संजीव

– निर्धारित आलोचनात्मक प्रश्न

पाठ्यक्रम में निर्धारित कहानीकारों के साहित्यिक परिचय, निर्धारित कहानियों का प्रतिपाद्य तथा कहानी कला पर ही प्रश्न पूछे जाएंगे।

खण्ड(ग) हिन्दी साहित्य का आधुनिक गद्य :

निर्धारित प्रश्न–

1 हिन्दी उपनयास : उद्‌भव और विकास
2 हिन्दी नाटक : उद्‌भव और विकास
3 हिन्दी कहानी : उद्‌भव और विकास
4 हिन्दी निबन्ध : उद्‌भव और विकास
5 हिन्दी आलोचनात्मक : उद्‌भव और विकास
6 हिन्दी साहित्य की अन्य विधाएं– आत्मकथा, जीवनी, यात्रावृत का उद्‌भव और विकास

खण्ड(घ) वस्तुनिष्ठ प्रश्न :

निर्देश :

1 खण्ड 'क' में निर्धारित पाठ्यक्रम में से व्याख्या के लिए चार अवतरण दिए जाएंगे, जिनमें से परीक्षार्थियों को किन्ह दो की सप्रसंग व्याख्या करनी होगी प्रत्येक व्याख्या के लिए 4 अंक निर्धारित हैं पूरा प्रश्न 8 अंक का होगा।
2 खण्ड 'क' निर्धारित आलोचनात्मक प्रश्नों में से दो प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थियों को किसी एक का उत्तर देना होगा। यह प्रश्न 7 अंक का होगा।
3 खण्ड 'ख' में निर्धारित पाठ्यक्रम में से व्याख्या के लिए चार अवतरण दिए जाएंगे, जिनमें से परीक्षार्थियों को किन्ह दो की सप्रसंग व्याख्या करनी होगी, प्रत्येक व्याख्या के लिए 4 अंक निर्धारित है पूरा प्रश्न 8 अंक का होगा।
5 खण्ड(क+ख)में निर्धारित पाठ्यक्रम (समकालीन हिन्दी कविता+समकालीन हिन्दी कहानी) में से छः लघुत्तरी प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थियों को लगभग 200–200 शब्दों में किन्ह तीन प्रश्नों का उत्तर देना होगा प्रत्येक प्रश्न के लिए 5 अंक निर्धारित होंगे पूरा प्रश्न 15 अंक का होगा।
6 खण्ड 'ग' में निर्धारित पाठ्यक्रम में से दो आलोचनात्मक प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थियों को किसी एक प्रश्न का उत्तर देना होगा इस प्रश्न के लिए 7 अंक निर्धारित हैं।
7 खण्ड 'ग' में निर्धारित पाठ्यक्रम में से छः लघुत्तरी प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थियों को किन्ह दो प्रश्नों का उत्तर देना होगा प्रत्येक प्रश्न के लिए 4 अंक निर्धारित होंगे पूरा प्रश्न 8 अंक का होगा।
8 अन्तिम प्रश्न वस्तुनिष्ठ प्रकृति का होगा सम्पूर्ण पाठ्यक्रम से दस प्रश्न पूछे जाएंगे पूरा प्रश्न 20 अंक का होगा परीक्षाथियों को इसका उत्तर 50 शब्दों में लिखना होगा।

गुरु जम्भेश्वर विज्ञान एवं प्रोद्यौगिकी विश्वविद्यालय हिसार
पाठ्यक्रम हिन्दी (ऐच्छिक)
बी.ए. तृतिय वर्ष छटवाँ समेस्टर

पेपर – ए **HINE 302- हिन्दी (ऐच्छिक)**

(शैक्षणिक सत्र 2019–20 से लागू)

कुल अंक : 100
लिखित परीक्षा : 80
आन्तरिक मूल्यांकन : 20
समय : 3 घण्टे

निर्धारित पाठ्यक्रम

1 मानस का हंस (विद्यार्थी संस्करण) : अमृतलाल नागर
2 नव्यत्तर गद्य विधाएं
3 साहित्यलोचन
4 वस्तुनिष्ठ प्रश्न

खण्ड (क) निर्धारित आलोचनात्मक प्रश्न

1 अमृतलाल नागर का साहित्यक परिचय
2 मानस का हंस : प्रतिपाद्य
3 मानस का हंस : पुरावृत्त और कल्पना
4 मानस का हंस : चरित्र निर्माण
5 मानस का हंस : देशकाल और वातावरण
6 मानस का हंस : भाषा शैली

खण्ड (ख) नव्यतर गद्यविधाएँ

प्रस्तुत पुस्तक में से प्रतिष्ठित रचनाकारों की निम्नलिखित विधाओं को पाठ्यक्रम में शामिल किया जाएगा। ललित निबंध, संस्मरण, रेखाचित्र, यात्रावृतान्त, व्यंग्य और डायरी पर आधारित विधाएं निम्नलिखित होंगी।

1 अशोक के फूल : हजारी प्रसाद द्विवेदी
2 अस्ति की पुकार हिमालय : विद्यानिवास मिश्र
3 घीसा : महादेवी वर्मा
4 मेरे पिताजी : कन्हैयालाल प्रभाकर मिश्र
5 मोहन राकेश की डायरी – मोहन राकेश
6 भोला राम का जीव : हरिशंकर परसाई
7 चीड़ों पर चाँदनी : निर्मल वर्मा

खण्ड (ग) साहित्यलोचन

निर्धारित विषय

- काव्य : स्वरुप और भेद
  काव्य की परिभाषा, काव्य प्रयोजन, काव्य हेतू
  काव्य के भेद : महाकाव्य, खण्डकाव्य गीतिकाव्य
- काव्य : स्वरुप और भेद
- रस की परिभाषा और उसके भेद
- अलंकार की परिभाषा और प्रमुख अलंकारों का सोदाहरण परिचय–अनुप्रास, श्लेष, यमक, उपमा रुपक, उत्प्रेक्षा, भ्रान्तिमान, सन्देह, मानवीकरण

खण्ड (घ) वस्तुनिष्ठ प्रश्न

निर्देश :

1 खण्ड (क) में निर्धारित पाठ्यक्रम में से व्याख्या के लिए चार अवतरण दिए जाएंगे जिसमें से परिक्षार्थियों को किन्हदो की सप्रसंग व्याख्या करनी होगी, प्रत्येक व्याख्या के लिए 4 अंक निर्धारित हैं पूरा प्रश्न 8 अंक का होगा।

2 खण्ड (क) में निर्धारित आलोचनात्मक प्रश्नों में से दो प्रश्न पूछे जाएंगे जिनमें से परिक्षार्थियों को किसी एक का उत्तर देना होगा यह प्रश्न 7 अंक का होगा।

3 खण्ड (ख) में निर्धारित पाठ्य क्रम में से व्याख्या के लिए चार अवतरण दिए जाएंगे जिनमें से परिक्षार्थियों को किन्हदो की सप्रसंग व्याख्या करनी होगी प्रत्येक व्याख्या के लिए 4 अंक निर्धारित हैं पूरा प्रश्न 8 अंक का होगा।

4 खण्ड 'ख' में निर्धारित आलोचनात्मक प्रश्नों में से दो प्रश्न पूछे जाएंगे जिनमें से परिक्षार्थियों को किसी एक प्रश्न का उत्तर देना होगा यह प्रश्न 7 अंक का होगा।

5 खण्ड (कख) में निर्धारित पाठ्यपुस्तकों एवं आलोचनात्मक प्रश्न में से छः लघुत्तरी प्रश्न पूछे जाएंगे, जिनमें से परीक्षार्थियों को लगभग 200–200 शब्दों में किन्ह□ तीन का उत्तर देना होगा। प्रत्येक प्रश्न के लिए 5 अंक निर्धारित हैं पूरा प्रश्न 15 अंक का होगा।

6 खण्ड (ग) में निर्धारित पाठ्यक्रम में से दो आलोचनात्मक प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थियों को किसी एक का उत्तर देना होगा इस प्रश्न के लिए 7 अंक निर्धारित होंगे।

7 खण्ड (ग) में निर्धारित पाठ्यक्रम में से चार लघुत्तरी प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थियों को दो का उत्तर देना होगा प्रत्येक प्रश्न के लिए 4 अंक निर्धारित है पूरा प्रश्न 8 अंक का होगा।

8 अन्तिम प्रश्न सम्पूर्ण पाठ्यक्रम में से वस्तुनिष्ठ प्रकृति के दस प्रश्न पूछे जाएंगे पूरा प्रश्न 20 अंक का होगा परीक्षार्थियों को इसका उत्तर 50 शब्दों में लिखना होगा।

Guru Jambheshwar University of Science & Technology, Hisar

B.A. (GENERAL) ENGLISH (COMPULSORY) (SEMESTER SYSTEM)
SCHEME OF EXAMINATION
(TO BE INTRODUCED IN PHASED MANNER W.E.F. 2018-2019)
Syllabus and Courses of Reading
ENGC 101: ENGLISH (Compulsory) - Part - I, Semester - I

External Marks: 80
Internal Assessment: 20
Time Allowed: 3 Hours

Note:- There will be five questions in all. First question will consist of ten short answer type questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry 15 marks each.

Text Prescribed — ENGC 101: Literature and Language-I
Edited by: Loveleen Mohan, Randeep Rana and Jaibir Singh Hooda
Publishers : Orient Blackswan

SCHEME OF QUESTION PAPER

Note: The question paper will carry a maximum of 80 marks. The paper will have five questions as per details given below.

Q 1. This question is compulsory and consist ten questions of two marks each. 20 Marks

Q 2. This question will be designed to assess the understanding of the text by the students. The students shall answer any two out of the given four questions in about 150 words each). 15 Marks

Q 3. (a) This question will be based on References to the Context. (one out of two) 5 Marks

(b) This question will be based on vocabulary from the exercises following the chapters. The students shall attempt questions on vocabulary as directed. (e.g. framing sentences of their own or giving various forms of the given words, synonyms, antonyms, one word substitutes). The students shall answer any ten out of the given fifteen words. 10 Marks

Q.4. (a) This question will be based on phonetic transcription given in the chapters in the text book. The students shall transcribe eight words out of the given twelve.
(For blind candidates only):- Word meaning of the words in glossary given at the end of the chapters. Students will be required to give meaning of any eight words out of given twelve words. 8 Marks
(b) The students shall write one paragraph (in about 200 words) on any one of the four topics given. 7 Marks

Q 5. (a) This part will be based on the use of tenses. The students shall attempt seven out of ten sentences. 7 Marks
(b) This part will be based on parts of the speech. The students shall attempt eight out of twelve sentences. 8 Marks

Guru Jambheshwar University of Science & Technology, Hisar

B.A. (GENERAL) ENGLISH (COMPULSORY) (SEMESTER SYSTEM)
SCHEME OF EXAMINATION
(TO BE INTRODUCED IN PHASED MANNER W.E.F. 2018-2019)
Syllabus and Courses of Reading
ENGC 102: ENGLISH (Compulsory) - Part - I, Semester - II

External Marks: 80
Internal Assessment: 20
Time Allowed: 3 Hours

Note:- There will be five questions in all. First question will consist of ten short answer type questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry 15 marks each.

Text Prescribed — ENGC 102: Literature and Language-II
Edited by: Jaibir Singh Hooda, Randeep Rana and Loveleen Mohan.
Publishers : Orient Blackswan

SCHEME OF QUESTION PAPER

Note: The question paper will carry a maximum of 80 marks. The paper will have five questions as per details given below.

Q 1. This question is compulsory and consist ten short answer type questions of two marks each. 20 Marks

Q 2. This question will be designed to assess the understanding of the text by the students. The students shall answer any three out of the given five questions in about 150 words each). 15 Marks

Q 3. (a) Do as directed (Topics based on the following grammar topics covered in Semester-I : Articles, Prepositions, Adverbs, Adjectives & Conjunctions). Students will be required to attempt any Eight out of the given twelve. 8 Marks

(b) Students will be required to give antonyms as well as synonyms of any seven out of the given ten words. 7 Marks

Q 4. (a) Transcription of one/two syllabic words only from the words given in the exercises at the end of the chapters. Students will be required to transcribe any seven out of the given ten words.
(For blind candidates only):- Word meaning of the words in glossary given at the end of the chapters. Students will be required to give meaning of any seven words out of given ten words. 7 Mark

(b) Composition: Students will be required to write a paragraph in about 200 words on any one of the four given topics of general nature. 8 Marks

Q 5. This question will be based on the grammar exercises given in the text book. The sentences will not necessarily be the same as given in exercises. Students will be required to attempt any fifteen out of the given twenty. 15 Marks

Guru Jambheshwar University of Science & Technology, Hisar

ENGLISH (COMPULSORY)

B.A. II[nd] Year 3[rd]Semester

PAPER-A **ENGC 201 : English (Compulsory)**

(w.e.f. the academic session 2019-20)

Maximum Marks : 100
External Marks : 80
Internal Assessment : 20
Time : 3 hours

Note :-

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shallattempt four more questions selecting at least one from each Unit. The paper willcarry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Text Prescribed — ENGC 101: Fragrances: A Textbook of Poetry and Language Skills

Edited b: Dinesh Kumar, Sunita Siroha and Sukhwinder Singh Rehal.

Publishers: Orient Blackswan

SCHEME OF QUESTION PAPER

Note: The question paper will carry a maximum of 80 marks. The paper will have five questions as per details given below.

Q 1. This question is compulsory and consist ten questions of two marks each.

20 Marks

Q 2. This question will be designed to assess the understanding of the text by the students. The students shall answer any three out of the given five questions in about 150 words each).

15 Marks

Q 3. (a) This question will be based on References to the Context (one out of two).

8 Marks

(b) This question will be based on vocabulary from the exercises following the chapters. The students shall attempt questions on vocabulary as directed. (e.g. framing sentences of theirown or giving various forms of the given words, synonyms, antonyms, one word substitutes). The students shall answer any seven out of the given twelve words.

7 Marks

Q.4. (a) This question will be based on phonetic transcription given in the chapters in the textbook. The students shall transcribe eight words out of the given twelve.

(For blind candidates only):- There will be a question based on vocabulary exercises

5 Marks

(b) The students shall write an email on any relevant topic with internal choice.

5 Marks

(c) One question on poetic forms/devices. The student will be required to attempt one out of the given two. The candidates may be asked to identify devices/forms on the basis of extracts from poem.

5 Marks

Q 5. (a) This question will be based on the grammar topics discussed in the textbook. The sentences will not necessarily be the same as given in the exercises. Student will be required to attempt any fifteen out of the given twenty.

15 Marks

Guru Jambheshwar University of Science & Technology, Hisar

ENGLISH (COMPULSORY)

B.A. IInd Year 4th Semester

PAPER-A **ENGC 202 : English (Compulsory)**

(w.e.f. the academic session 2019-20)

Maximum Marks :100
External Marks :80
Internal Assessment :20
Time :3 hours

Note :-

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shallattempt four more questions selecting at least one from each Unit. The paper willcarry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Text Prescribed — ENGC 102: Centre Stage: A Textbook of Plays and Language Skills
Edited by: Sunita Siroha, Sukhwinder Singh Rehal and Dinesh Kumar
Publishers: Orient Blackswan

SCHEME OF QUESTION PAPER

Note: The question paper will carry a maximum of 80 marks. The paper will have five questions as per details given below.

Q 1. This question is compulsory and consist ten short answer type questions of two marks each.

20 Marks

Q 2. This question will be designed to assess the understanding of the text by the students. The students shall answer any three out of the given five questions in about 150 words each).

15

Marks

Q 3. (a) This question will be based on References to the Context (one out of two). 5 Marks

(b) Vocabulary exercise (any five out of the given eight). 5 Marks

(c) This question will be base on transcription with stress. Students will be required attempt any seven out of the given ten words.

(For blind candidates only):- There will be a question based on vocabulary. 5 Mark

Q 4. (a) Translation one short paragraph from Hindi to English.

(b) Translation one short paragraph from English to Hindi. 15 Marks

Q 5. Writing Skills: This question with internal choice will be based on the topics discussed in the textbook under the title "Extended Language Skills" except 'Translation".

15 Marks

Guru Jambheshwar University of Science & Technology, Hisar

ENGLISH (COMPULSORY)

B.A. IIIrd Year 5thSemester

PAPER-A **ENGC 301 : English (Compulsory)**

(w.e.f. the academic session 2020-21)

Maximum Marks:100
External Marks:80
Internal Assessment:20
Time: 3 hours

1. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory.** The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Prescribed Text: *Reading a Novel: Kanthapura & An Exercise in Language Use* edited by Umed Singh, Pankaj Sharma, Deepti Dharmani.

SCHEME OF QUESTION PAPER

Q 1. This question is compulsory and consist ten questions of two marks each. **20 Marks**

Q 2. (a) This question will be based on the text, one long answer type question out of the given two to be answered in about 300 words. The questions will be designed to test the candidate's critical understanding of the text. **10 Marks**

(b) There will be one question with internal choice based on "Novel and Its forms" and "Glossary" given in the text book. **5 Marks**

Q 3. (a) This question will be based on References to the Context (one out of two). **7½ Marks**

(b) One comprehension passage from the text followed by five questions. **7½ Marks**

Q.4. (a) Students will be required to transcribe and mark primary stress on any eight words out of the given ten. **8 Marks**

(b) Students will be required to mark Intonation (falling and rising tones) in any seven sentences out of the given ten. **(for blind candidates only)** There will be 7 idioms/ pairs of words out of which the candidates will be required to attempt any ten. **7 Marks**

Q 5. (a) Students will be required to fill the blanks with appropriate transitional words/ phrases in any five sentences out of the given seven. The sentences should not be the same as given in the text. **5 Marks**

(b) Students will be required to identify and transform the seven sentences (from one type to another, i.e. simple, compound and complex) out of the given ten. **5 Marks**

(c) Students will be required to write a paragraph of about 150 words on any one of the four given topics. **5 Marks**

Guru Jambheshwar University of Science & Technology, Hisar

ENGLISH (COMPULSORY)

B.A. IIIrd Year 6th Semester

PAPER-A **ENGC 302 : English (Compulsory)**

(w.e.f. the academic session 2020-21)

Maximum Marks: 100 Marks
External Marks: 80 Marks
Internal Assessment: 20 Marks
Time :03 hours

Note:-

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper willcarry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Prescribed Text: *Interpreting A Play: The Merchant of Venice and Developing Composition Skills* by Deepti Dharmani, Pankaj Sharma and Umed Singh.

SCHEME OF QUESTION PAPER

Q 1. This question is compulsory and consist ten questions of two marks each. **20 Marks**

Q 2. This question will be designed to assess the understanding of the text by the students. The students shall answer any three out of the given five questions in about 150 words each).

7 ½ × 2 = 15 Marks

Q 3. (a) This question will be based on References to the Context (one out of two). **10 Marks**

(b) This question will be based on the section of the text: "Introduction to Drama and Types of Drama" given in the text. Students will be required to answer any two out of the given four items.

5 Marks

Q 4. (a) Students will be required to write one word substitution of any five expressions out of the given eight. **5 Marks**

(b) Students will be required to write a précis of the given passage of about 300 words.

10 Marks

Q 5. (a) Students will be required to attempt one question on Email/Memo/Circular/RTI out of the given two questions. The question intends to test the understanding of the basic modes of communication. **7 Marks**

(b) Students will be required to write a business/official letter out of the given two.

8 Marks

Guru Jambheshwar University of Science & Technology, Hisar

B.A. (GENERAL) FUNCTIONAL ENGLISH (SEMESTER SYSTEM)
B.A. (General) Functional English - Part - I, Semester - I
SCHEME OF EXAMINATION
(TO BE INTRODUCED IN PHASED MANNER W.E.F. 2018-2019)
Syllabus and Courses of Reading

External Marks: 60
Practical/Viva :20
Internal Assessment: 20
Time Allowed: 3 Hours

Note:- **There will be five questions in all. First question will consist of ten short answer type questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions with internal choice will carry 10 marks each.**

Course-I : ENGE 101: Phonetics and Grammar

Section-A: Phonetics: **(30 marks)**

Course Content: Theory

1. Definition and Scope of Linguistics.
2. Difference between Phonetics and Phonology.
3. The Speech Mechanism.
4. Basic Concepts: Phoneme, Allophone, Vowel, Consonant, Consonant Cluster and Syllable.
5. Description of the British R.P. Speech Sounds: Vowels and Consonants.

Section-B: Grammar: **(30 marks)**

Objectives:

1. To introduce corrective measures to students,.
2. To eradicate grammatical errors in speech.
3. To eradicate grammatical errors in writing.

Course Contents:

1. Articles
2. Parts of Speech
3. Nouns: Singular and Plural
4. Verbs: Linking Verbs, Transitive & Intransitive Verbs.
5. Agreement of Verbs and Subject.
6. Tenses & their Use.
7. Tag questions.
8. Transformation.
9. Confusion of Adjectives and Adverbs.
10. Adverbial use of **No, Not** and **None.**

Practical: Oral Exam/Viva: To be conducted in Language Lab **(20 marks)**

Guru Jambheshwar University of Science & Technology, Hisar

B.A. (GENERAL) FUNCTIONAL ENGLISH (SEMESTER SYSTEM)
B.A. (General) Functional English - Part - I, Semester - II
SCHEME OF EXAMINATION
(TO BE INTRODUCED IN PHASED MANNER W.E.F. 2018-2019)
Syllabus and Courses of Reading

External Marks: 60
Practical/Viva :20
Internal Assessment: 20
Time Allowed: 3 Hours

Note:- **There will be five questions in all. First question will consist of ten short answer type questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions with internal choice will carry 10 marks each.**

Course-II: ENGE 102: Phonetics and Grammar (Extension of the Course-I)

Section-A Phonetics Course (30 Marks)

Course Content: Theory and practice (to be carried out in Language Lab.)

1. Word-Accent
2. Accent and Rhythm in Connected Speech
3. Intonation: Tune I & II (with reference to short and simple sentences only)
4. Phonemic Transcription Simple Words in Common Use in IPA symbols (as used in Oxford Advanced Learner's Dictionary).

Section-B Grammar (30 Marks)

Objectives:

1. To introduce corrective measures to students
2. To eradicate grammatical errors in speech.
3. To eradicate grammatical errors in writing.

Course Contents: Grammar Exercises to be carried out in class room.

1. Difficulties with Comparatives and Superlatives
2. Confusion of Participles Active and Passive Voice
3. The Prop. Word **On**
4. Prepositions.
5. Redundant Pronouns and Preposition.
6. The Use of Correlatives.
7. Use of Who, Whom, Much, Many, Still & Yet, So That, So As, Make and Do.
8. Errors in the use of individual words, the courtesy words: Please & Thank you, Greetings and Salutations. Dates and Time.

Practical: Oral Exam/Viva: To be conducted in Language Lab **(20 marks)**

Guru Jambheshwar University of Science & Technology, Hisar

FUNCTIONAL ENGLISH (OPTIONAL)

B.A. IInd Year 3rdSemester

PAPER-A **ENGE 201 : Communicative and Writing Skills**

(w.e.f. the academic session 2019-20)

External Marks: 60
Practical/Viva: 20
Internal Assessment: 20
Time Allowed: 3 Hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shallattempt *four* more questions selecting at least *one* from each Unit. The paper willcarry 80 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Course Content: Theory **(60 marks)**

Unit-I Spotting the errors pertaining to nouns, pronouns, adjectives and adverbs, subject verb concord.

Unit-II Lexis: Idioms and phrases, words often confused, one -word substitution, foreign words (A selected list), vocabulary development through synonyms, antonyms, formation of words with affixes.

Unit-III (a) Developing Writing Skills: Writing small paragraphs on general and current issues, events and slogan writing.

(b) Developing Editing Skills: Use of capital letters, punctuation, parentheses, square brackets, ellipsis, apostrophe and quotation marks

Unit-IV Technical Writing:

(a) Drafting memo and circular

(b) E-mail writing

(c) Resume writing, Press Report Writing

(d) Writing Notices, Agendas, Minutes

(e) Note taking

Practical: Oral Exam/Viva: To be conducted in Language Lab. **(20 marks)**

Guru Jambheshwar University of Science & Technology, Hisar

FUNCTIONAL ENGLISH (OPTIONAL)

B.A. IInd Year 4th Semester

PAPER-A **ENGE 202 : Communicative and Writing Skills**

(w.e.f. the academic session 2019-20)

External Marks: 60
Practical/Viva: 20
Internal Assessment: 20
Time Allowed: 3 Hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shallattempt *four* more questions selecting at least *one* from each Unit. The paper willcarry 80 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Course-II:ENGE 102: Communicative and Writing Skills: **(60 Marks)**
(Extension of the Course-I)

Course Content:

Unit-I Introducing Communication:
(i) Nature and objectives of communication
(ii) Process of communication
(iii) Principles of effective communication
(iv) Barriers to communication: Wrong choice of medium, physical barriers, semantic barriers, sociophysiological barriers
(v) Introduction to Kinesics

Unit- II Non-verbal Communication:
(i) Body language, appearance, voice, facial expression, posture and gestures
(ii) Functions of non-verbal communication

Unit-III Communication through mass media:
Basic understanding of role of information technology and media:
Newspapers, radio, television, computers, internet and multimedia.

Unit-IV English in Situations: 1. Greetings, 2. Receiving and seeing people off, 3. Making complaints, 4. Making an appointment, 5. Buying at shops, 6. Placing orders, 7. Offering apologies, 8. Consulting a Doctor, 9. Making enquiries, 10.Conversation on telephone, 11. Asking the time: Time expression, 12. In the post-office, 13. At the bank, 14. At the customs, 15. At the airport, 16. At the travel agency, 17. Booking a room in a hotel, 18. Buying guidebook, 19. At the temple, 20. At the police Station, 21. At a dinner party, 22. Hiring a taxi, 23. At the stock exchange, 24. At the chemist, 25. At the Restaurant, 26. Description of events

(Students shall develop dialogue based paragraphs on the above mentioned situations)

Practical: Oral Exam/Viva: To be conducted in Language Lab **(20 marks)**

Guru Jambheshwar University of Science & Technology, Hisar

FUNCTIONAL ENGLISH (OPTIONAL)

B.A. IIIrd Year 5thSemester

PAPER-A **ENGE 301 : Communicative and Writing Skills**

(w.e.f. the academic session 2020-21)

External Marks: 60
Practical/Viva: 20
Internal Assessment: 20
Time Allowed: 3 Hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper willcarry 80 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Course Content: Theory
(60 marks)

Unit-I

The following poems from *Fifteen Poets* are prescribed:
"On His Blindness", "Alexander's Feast", "Epistle to Dr. Arbuthnot",
"Tintern Abbey", "Kubla Khan", "Ode to the West Wind",
"Stanzas Written in Dejection", "Ode on a Grecian Urn",
"Ode to a Nightingale", "Ulysses", "The Lotus Eaters", "Tears Idle Tears",
"My Last Duchess", "Rabbi Ben Ezra", "The Last Ride Together",
"The Scholar Gypsy", "Dover Beach". 10

Unit-II

Business letters and faxes: different types of formats, address, opening and closing, subject, heading, sub-heading, numbering, etc. 10

Unit-III

Scanning letters and faxes for specific information, acquiring familiarity with abbreviations and phrases commonly used in business correspondence. 10

Unit-IV

Writing letters of application with curriculum vitae/Resume; letters of invitation, reply to invitation, Enquiry, reference, arrangements, announcing forthcoming Events, products, visits, making bookings and arrangements for conferences, trade fairs, etc., complaints and replies to complaints, apologies, thanks. 10

Practical: Oral Exam/Viva **(20 marks)**

Guru Jambheshwar University of Science & Technology, Hisar

FUNCTIONAL ENGLISH (OPTIONAL)

B.A. IIIrd Year 6th Semester

PAPER-A **ENGE 302 : Communicative and Writing Skills**

(w.e.f. the academic session 2020-21)

External Marks: 60
Practical/Viva: 20
Internal Assessment: 20
Time Allowed: 3 Hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper willcarry 80 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Course-II:ENGE 102: Communicative and Writing Skills: (60 Marks)
(Extension of the Course-I)

COURSE CONTENT

Unit-I

Independent reading of reports from business and finances Papers, reports on company performance, market surveys project Reports, reports of achievements in the world of business by Well-known business personalities, comparative progress of various Enterprises, etc.
10

Unit-II

Summarization of main ideas of business reports; using the vocabulary from business reports and consulting the Business English Dictionary. **10**

Unit-III

Essay (dealing with current affairs/business world/descriptive). **10**

Unit-IV

Précis Writing **10**

Practical: Oral Exam/Viva **(20 marks)**

Suggested Reading:

Doherty, M., Knapp L. & Swift: *Write for Business skills for Effective Report Writing in English*, Longman, London, 1987.
Rohini Aggarwal: *Executive Communication.*
A. Srinivasan: *Contemporary Essays and Problem.*

Guru Jambheshwar University of Science & Technology, Hisar

Scheme of Examination for B.A. Part-I in the
Subject of Sanskrit (Compulsory) (Semester System)

w.e.f. Session: 2018-19
B.A. Part-1
First Semester
SANC 101: Sanskrit (Compulsory)

कुल अंक : 80
आन्तरिक मूल्यांकन :20
समय : 3 घण्टे

घटक:–I संस्कृत– चयनिका (कुरूक्षेत्र विश्वविद्यालय प्रकाशन):

(क) पद्यभाग : 1–6 पाठ (10 अंक)

(ख) सार (5 अंक) 15 अंक

घटक–II संस्कृत– चयनिका :

(क)गद्यभाग : 1–9 पाठ (10 अंक)

(ख) सार (5 अंक) 15 अंक

घटक–III संस्कृत–व्याकरण : 15 अंक

(क) शब्दरूप : बालक, कवि, साधु, पितृ, मातृ, फल, विद्वस्।

शशिन्। (7 अंक)

(ख) धातुरूप : भू, पठ्, स्था, लभ्, दा (यच्छ्), प्रच्छ्।

(केवल लट्, लोट्, लङ्, विधिलिङ्, लृट् लकारों में) (8 अंक)

घटक– IV: (क) स्वरसन्धि। (7अंक) 15 अंक

(ख) श्रीमद्भगवद्गीता से कण्ठस्थ चार श्लोकों का शुद्ध लेखन।

(प्रश्नपत्र में पूछे गए श्लोकों से भिन्न) (8 अंक)

विशेष निर्देश–

1. प्रश्नपत्र अधिकतम 80 अंकों का होगा। 20 अंक आन्तरिक मूल्यांकन के लिये निर्धारित हैं।
2. प्रश्नपत्र में कुल पाँच प्रश्न दिये जाएँगे। प्रथम प्रश्न पाठ्यक्रम में निर्धारित चारों घटकों पर आधारित तथा अनिवार्य होगा। इसके अन्तर्गत लघु उत्तर वाले विकल्परहित दस(10) प्रश्न पूछे जाएँगे। प्रत्येक लघूत्तरात्मक प्रश्न दो (2) अंकों का होगा। शेष चार प्रश्न पाठ्यक्रम के प्रत्येक घटक से शत–प्रतिशत विकल्प के साथ पूछे जाएँगे। ये चारों प्रश्न 15–15 अंक के होंगे।

प्रश्नपत्र हल करने का समय तीन(3) घण्टे होगा।

Guru Jambheshwar University of Science & Technology, Hisar

SYLLABUS
w.e.f. Session 2018-19
B. A. Part-1, Semester-II
SANC 102: Sanskrit (Compulsory)

कुल अंक: 80
आन्तरिक मूल्यांकन: 20
समय: 3 घण्टे

घटक–I: संस्कृत– चयनिका (कुरुक्षेत्र विश्वविद्यालय प्रकाशन):

(क) पद्यभाग : 7–12 पाठ (10 अंक)

(ख) सार (5 अंक) 15 अंक

घटक–II: संस्कृत– चयनिका :

(क) गद्यभाग : 10–18 पाठ (10 अंक) 15 अंक

(ख) सार (5 अंक)

घटक– III : संस्कृत– व्याकरण : 15 अंक

(क) शब्दरूप : राजन्, लता, नदी, सर्व, अस्मद्, युष्मद्, तद्, (तीनों लिंगों में), इदम्। (7 अंक)

(ख) धातुरूप : गम्, वद्, अस्, कृ, श्रु, चुर् (8 अंक)
केवल लट्, लोट्, लङ्, विधिलिङ्, लृट् लकारों में)

घटक- IV : (क) व्यंजनसन्धि एवं विसर्गसन्धि। (7 अंक)

15 अंक

(ख) कारक तथा उपपदविभक्तियों पर आधारित अनुवाद। (8 अंक)

विशेष निर्देश–

1. प्रश्नपत्र अधिकतम 80 अंकों का होगा। 20 अंक आन्तरिक मूल्यांकन के लिये निर्धारित हैं।
2. प्रश्नपत्र में कुल पाँच प्रश्न दिये जाएँगे। प्रथम प्रश्न पाठ्यक्रम में निर्धारित चारों घटकों पर आधारित तथा अनिवार्य होगा। इसके अन्तर्गत लघु उत्तर वाले विकल्परहित दस (10) प्रश्न पूछे जाएँगे। प्रत्येक लघूत्तरात्मक प्रश्न दो (2) अंकों का होगा। शेष चार प्रश्न पाठ्यक्रम के प्रत्येक घटक से शत-प्रतिशत विकल्प के साथ पूछे जाएँगे। ये चारों प्रश्न 15–15 अंक के होंगे।
3. प्रश्नपत्र हल करने का समय तीन (3) घण्टे होगा।

Guru Jambheshwar University of Science & Technology, Hisar

Sanskrit (Compulsory)

B.A. IInd Year 3rd Semester

PAPER-A (THEORY) **SANC 201 : Sanskrit (Compulsory)**

(w.e.f. the academic session 2019-20)

कुल अंक– 100
लिखित परीक्षा– 80
आंतरिक मूल्यांकन – 20
समय– 3 घण्टे

निर्देश–

1. प्रश्न पत्र में कुल 5 प्रश्न पूछे जांएगें। परीक्षार्थी को सभी प्रश्न हल करने होगें। प्रथम प्रश्न पाठ्यक्रम में निर्धारित चारों घटकों पर आधारित होगा तथा अनिवार्य होगा। द्वितीय, तृतीय, चतुर्थ तथा पंचम प्रश्न का निर्माण पाठ्यक्रम के क्रमशः प्रथम, द्वितीय, तृतीय, तथा चतुर्थ घटक में निर्धारित विषय के आधार पर किया जाएगा। प्रश्नपत्र कुल 100 अकों का होगा, जिस में से 20 अंक आंतरिक मूल्यकान के होगें।
2. अनिवार्य प्रथम प्रश्न में लघु उत्तर वाले 10 प्रश्न पूछे जाएंगें। प्रत्येक लघूत्तरात्मक प्रश्न 2 अंकों का होगा। प्रथम प्रश्न को छोड़कर सभी प्रश्न 15–15 अंक के होगें। जिनमें कम से कम पचास प्रतिशत विकल्प रहेगा। प्रश्न पत्र हल करने का समय तीन घण्टे होगा।

घटक–I भास–चारूदत्तम् – प्रथम तथा द्वितीय अंक (सप्रसंग व्याख्या/अनुवाद)। 15 अंक

घटक– II भास–चारूदत्तम् – प्रथम तथा द्वितीय अंक, सार – (8 अंक)
चरित्र–चित्रण (7 अंक)। 15 अंक

घटक– III कृदन्त–प्रकरण : 15 अंक

शतृ, शानच्, तव्यत्, अनीयर्, यत्, तुमुन्, क्त, क्त्वा, क्तवतु, ण्वुल्।

घटक– IV (क) समास– अव्ययीभाव तथा तत्पुरूष। (8 अंक) 15 अंक

ख) अनुवाद– सरल हिन्दी से संस्कृत में अनुवाद। (7 अंक)

Guru Jambheshwar University of Science & Technology, Hisar

Sanskrit (Compulsory)

B.A. IInd Year 4th Semester

PAPER-A (THEORY) **SANC 202 : Sanskrit (Compulsory)**

(w.e.f. the academic session 2019-20)

कुल अंक– 100
लिखित परीक्षा– 80
आंतरिक मूल्यांकन – 20
समय– 3 घण्टे

निर्देश–

1. प्रश्न पत्र में कुल 5 प्रश्न पूछे जांएगें। परीक्षार्थी को सभी प्रश्न हल करने होगें। प्रथम प्रश्न पाठ्यक्रम में निर्धारित चारों घटकों पर आधारित होगा तथा अनिवार्य होगा। द्वितीय, तृतीय, चतुर्थ तथा पंचम प्रश्न का निर्माण पाठ्यक्रम के क्रमशः प्रथम, द्वितीय, तृतीय, तथा चतुर्थ घटक में निर्धारित विषय के आधार पर किया जाएगा। प्रश्नपत्र कुल 100 अकों का होगा, जिस में से 20 अंक आंतरिक मूल्यकान के होगें।
2. अनिवार्य प्रथम प्रश्न में लघु उत्तर वाले 10 प्रश्न पूछे जाएंगें। प्रत्येक लघूत्तरात्मक प्रश्न 2 अंकों का होगा। प्रथम प्रश्न को छोड़कर सभी प्रश्न 15–15 अंक के होगें। जिनमें कम से कम पचास प्रतिशत विकल्प रहेगा। प्रश्न पत्र हल करने का समय तीन घण्टे होगा।

घटक–I भास–चारूदत्तम– तृतीय तथा चतुर्थ अंक (सप्रसंग व्याख्या/अनुवाद)। 15 अंक

घटक– II भास–चारूदत्तम– तृतीय तथा चतुर्थ अंक (लेखक/पाठ्य–पुस्तक से सम्बद्ध आलोचनात्मक प्रश्न)। 15 अंक

घटक–III णिजन्त तथा सन्नन्त धातु– 15 अंक

भू, पठ्, गम्, पा, लिख्, श्रु, स्था, हन्, दा, कृ (केवल लट् लकार में सिद्ध रूप)।

घटक– IV (क) समास– द्वन्द्व तथा बहुव्रीहि। (8 अंक) 15 अंक

ख) अनुवाद– सरल हिन्दी से संस्कृत में अनुवाद। (7 अंक)

Guru Jambheshwar University of Science & Technology, Hisar

Sanskrit (Compulsory)

B.A. IInd Year 5th Semester

PAPER-A (THEORY) **SANC 301 : Sanskrit (Compulsory)**

(w.e.f. the academic session 2020-21)

कुल अंक– 100
लिखित परीक्षा– 80
आंतरिक मूल्यांकन – 20
समय– 3 घण्टे

निर्देष–

1. प्रश्न पत्र में कुल 5 प्रश्न पूछे जांएगें। परीक्षार्थी को सभी प्रश्न हल करने होगें। प्रथम प्रश्न पाठ्यकम में निर्धारित चारों घटकों पर आधारित होगा तथा अनिवार्य होगा। द्वितीय, तृतीय, चतुर्थ तथा पंचम प्रश्न का निर्माण पाठ्यकम के कमषः प्रथम, द्वितीय, तृतीय, तथा चतुर्थ घटक में निर्धारित विशय के आधार पर किया जाएगा। प्रश्न पत्र कुल 100 अकों का होगा, जिस में से 20 अंक आंतरिक मूल्यकान के होगें।
2. अनिवार्य प्रथम प्रश्न में लघु उत्तर वाले 10 प्रश्न पूछे जाएंगें। प्रत्येक लघूत्तरात्मक प्रश्न 2 अंकों का होगा। प्रथम प्रश्न को छोड़कर सभी प्रश्न 15–15 अंक के होगें। जिनमें कम से कम पचास प्रतिषत विकल्प रहेगा। प्रश्न पत्र हल करने का समय तीन घण्टे होगा।

घटक–I : नीतिशतक : श्लोक–संख्या 1 से 25 तक — **15 अंक**

(क) दो श्लोकों का सरलार्थ। ;2x5=10 अंक)

(ख) एक सूक्ति की व्याख्या/सार। (5 अंक)

घटक–II : नीतिशतक : श्लोक–संख्या 26 से 50 तक — **15 अंक**

(क) दो श्लोकों का सरलार्थ। ;2ग5त्र10 अंक)

(ख) एक सूक्ति की व्याख्या/सार। (5 अंक)

घटक–III : संस्कृत साहित्य का इतिहास : — **15 अंक**

रामायण, अश्वघोष, कालिदास, भवभूति, हितोपदेश

घटक–IV : वरदराज, लघुसिद्धान्तकौमुदी– विमक्त्यर्थप्रकरण। — **15 अंक**

कारकविभक्ति– सामान्य परिचय/अशुद्धि–संशोधन/वाक्य–प्रयोग आदि।

Guru Jambheshwar University of Science & Technology, Hisar

Sanskrit (Compulsory)

B.A. IInd Year 6th Semester

PAPER-A (THEORY) **SANC 302 : Sanskrit (Compulsory)**

(w.e.f. the academic session 2020-21)

कुल अंक– 100
लिखित परीक्षा– 80
आंतरिक मूल्यांकन – 20
समय– 3 घण्टे

निर्देश–

1. प्रश्न पत्र में कुल 5 प्रश्न पूछे जांएगें। परीक्षार्थी को सभी प्रश्न हल करने होगें। प्रथम प्रश्न पाठ्यकम में निर्धारित चारों घटकों पर आधारित होगा तथा अनिवार्य होगा। द्वितीय, तृतीय, चतुर्थ तथा पंचम प्रश्न का निर्माण पाठ्यकम के कमषः प्रथम, द्वितीय, तृतीय, तथा चतुर्थ घटक में निर्धारित विशय के आधार पर किया जाएगा। प्रश्न पत्र कुल 100 अकों का होगा, जिस में से 20 अंक आंतरिक मूल्यकान के होगें।
2. अनिवार्य प्रथम प्रश्न में लघु उत्तर वाले 10 प्रश्न पूछे जाएंगें। प्रत्येक लघूत्तरात्मक प्रश्न 2 अंकों का होगा। प्रथम नप्रश्न को छोड़कर सभी प्रश्न 15–15 अंक के होगें। जिनमें कम से कम पचास प्रतिषत विकल्प रहेगा। प्रश्न पत्र हल करने का समय तीन घण्टे होगा।

घटक–I : अम्बिकादत्त व्यास, शिवराजविजय– प्रथम निःश्वास **15 अंक**

(क) दो गद्यांशों सरलार्थ। (2x5=10 अंक)

(ख) एक विशिष्ट पंक्ति की व्याख्या। (5 अंक)

घटक–II : शिवराजविजय– प्रथम निःश्वास **15 अंक**

लेखक–परिचय/पाठयांश का सार/पाठयांश की भाषा–शैली/चरित्र–चित्रण आदि।

घटक–III : संस्कृत साहित्य का इतिहास : **15 अंक**

महाभारत, बाणभट्ट, जयदेव, भर्तृहरि, पञ्चतन्त्र।

घटक–IV : संस्कृत–व्याकरण : **15 अंक**

उपपदविभक्ति (कपिलदेव द्विवेदी, रचनानुवादकौमुदी, विश्वविद्यालय प्रकाशन, वाराणसी)–

सामान्य परिचय/अशुद्धि–संशोधन/वाक्य–प्रयोग आदि।

Guru Jambheshwar University of Science & Technology, Hisar

Scheme of Examination for B.A. Part-I in the
Subject of Sanskrit (Elective) (Semester System)

w.e.f. Session: 2018-19
B.A. Part-1
First Semester
SANE 101: Sanskrit (Elective)

कुल अंक : 80
आन्तरिक मूल्यांकन :20
समय : 3 घण्टे

घटकः–I **हितोपदेश (चौखम्बा संस्कृत सीरीज ऑफिस, वाराणसी):**

मित्रलाभ (मित्रलाभ–आरम्भ से लेकर कथा 3 अर्थात् गृधमार्जारकथा के 114 वें श्लोक "उत्तमस्याऽपि— सर्वदेवमयोऽतिथिः" तक)। **15 अंक**

(क) दो पाठ्यांशों की व्याख्या। (2x5=10 अंक)

(ख) सार। (5 अंक)

घटक–II **नीतिशतक : श्लोक–संख्या 1से 50 तक।** **15 अंक**

(क) दो श्लोकों का सरलार्थ। (2x5=10 अंक)

(ख) एक सूक्ति की व्याख्या (5 अंक)

घटक–III संस्कृत–व्याकरण : **15 अंक**

(क) शब्दरूप : राम, कवि, भानु, पितृ, लता, अस्मद्, तद् (तीनों लिंगों में)। (7 अंक)

(ख) धातुरूप : भू, हस्,नम्,गम्, अस्, हन्,कृ, नी, याच्।
(केवल लट्, लोट्, लङ् विधिलिङ लृट् लकारों में) (8 अंक)

घटक– IV: (क) सन्धि : अच्सन्धि, हल्सन्धि एवं विसर्गसन्धि। (7 अंक) **15 अंक**

(ख) कण्ठस्थ दो श्लोकों का शुद्ध लेखन। (8 अंक)
(प्रश्नपत्र में पूछे गए श्लोकों से भिन्न)

विशेष निर्देश–

1. **प्रश्नपत्र अधिकतम 80 अंकों का होगा। 20 अंक आन्तरिक मूल्यांकन के लिये निर्धारित हैं।**
2. **प्रश्नपत्र में कुल पाँच प्रश्न दिये जाएँगे। प्रथम प्रश्न पाठ्यक्रम में निर्धारित चारों घटकों पर आधारित तथा अनिवार्य होगा। इसके अन्तर्गत लघु उत्तर वाले विकल्परहित दस(10) प्रश्न पूछे जाएँगे। प्रत्येक लघूत्तरात्मक प्रश्न दो (2) अंकों का होगा। शेष चार प्रश्न पाठ्यक्रम के प्रत्येक घटक से शत–प्रतिशत विकल्प के साथ पूछे जाएंगे। ये चारों प्रश्न 15–15 अंक के होंगे।**
3. ***प्रश्नपत्र हल* करने का समय तीन(3) घण्टे होगा।**

Guru Jambheshwar University of Science & Technology, Hisar

SYLLABUS
w.e.f. Session 2018-19
B. A. Part-1, Semester-II
SANE 102: Sanskrit (Elective)

कुल अंक: 80
आन्तरिक मूल्यांकन: 20
समय: 3 घण्टे

घटक–I: श्रीमद्भगवद्गीता, द्वितीय अध्याय– 15 अंक

(क) दो श्लोकों का सरलार्थ। (2x5=10 अंक)

(ख) एक आलोचनात्मक प्रश्न। (5 अंक)

घटक–II: नीतिशतक : श्लोक– संख्या 51 से अन्त तक। 15 अंक

(क) दो श्लोकों का सरलार्थ। (2x5=10 अंक)

(ख) एक सूक्ति की व्याख्या। (5 अंक)

घटक– III : संस्कृत– व्याकरण : 15 अंक

(क) शब्दरूप : मति, नदी, धेनु, मातृ, फल, युष्मद्, सर्व, एतद्, द्वि, त्रि। ('सर्व' से लेकर 'त्रि' तक तीनों लिंगों में)। (7 अंक)

(ख) धातुरूप : पठ्, नश्, नृत, प्रच्छ्, रूच्, हृ, भज्, पच्।
(केवल लट्, लोट्, लङ्, विधिलिङ् लृट् लकारों में) (8 अंक) 15 अंक

घटक IV : (क) छन्दः– अनुष्टुप्, आर्या, इन्द्रवज्रा, उपेन्द्रवज्रा, वंशस्थ, शिखरिणी, मन्दाक्रान्ता, वसन्ततिलका, शार्दूलविक्रीडित। (8 अंक)

(ख) हिन्दी से संस्कृत में अनुवाद। (7 अंक)

विशेष निर्देश–

1. प्रश्नपत्र अधिकतम 80 अंकों का होगा। 20 अंक आन्तरिक मूल्यांकन के लिये निर्धारित हैं।
2. प्रश्नपत्र में कुल पाँच प्रश्न दिये जाएँगे। प्रथम प्रश्न पाठ्यक्रम में निर्धारित चारों घटकों पर आधारित तथा अनिवार्य होगा। इसके अन्तर्गत लघु उत्तर वाले विकल्परहित दस (10) प्रश्न पूछे जाएँगे। प्रत्येक लघूत्तरात्मक प्रश्न दो (2) अंकों का होगा। शेष चार प्रश्न पाठ्यक्रम के प्रत्येक घटक से शत-प्रतिशत विकल्प के साथ पूछे जाएंगे।
3. प्रश्नपत्र हल करने का समय तीन (3) घण्टे होगा।

Guru Jambheshwar University of Science & Technology, Hisar

Sanskrit (Elective)

B.A. IInd Year 3rdSemester

PAPER-A (THEORY) **SANE 201 : Sanskrit (Elective)**

(w.e.f. the academic session 2019-20)

कुल अंक– 100
लिखित परीक्षा– 80
आंतरिक मूल्यांकन – 20
समय– 3 घण्टे

निर्देश–

1. प्रश्न पत्र में कुल 5 प्रश्न पूछे जांएगें। परीक्षार्थी को सभी प्रश्न हल करने होगें। प्रथम प्रश्न पाठ्यक्रम में निर्धारित चारों घटकों पर आधारित होगा तथा अनिवार्य होगा। द्वितीय, तृतीय, चतुर्थ तथा पंचम प्रश्न का निर्माण पाठ्यक्रम के क्रमशः प्रथम, द्वितीय, तृतीय, तथा चतुर्थ घटक में निर्धारित विषय के आधार पर किया जाएगा। प्रश्नपत्र कुल 100 अकों का होगा, जिस में से 20 अंक आंतरिक मूल्यकान के होगें।
2. अनिवार्य प्रथम प्रश्न में लघु उत्तर वाले 10 प्रश्न पूछे जाएंगें। प्रत्येक लघूत्तरात्मक प्रश्न 2 अंकों का होगा। प्रथम प्रश्न को छोड़कर सभी प्रश्न 15–15 अंक के होगें। जिनमें कम से कम पचास प्रतिशत विकल्प रहेगा। प्रश्न पत्र हल करने का समय तीन घण्टे होगा।

घटक–I भास, पंचरात्रम्। 15 अंक

क) सप्रसंग व्याख्या। (10 अंक)

ख) एक आलोचनात्मक प्रश्न । (05 अंक)

घटक– II (क) नाटक में प्रयुक्त पारिभाषिक शब्द– 15 अंक

सूत्रधार, नान्दीपाठ, विदूषक, प्रस्तावना, विष्कम्भक,

भरतवाक्यम्, जनान्तिकम्, अपवारितम्, स्वगतम्, नेपथ्य। (07 अंक)

(ख) संस्कृत गद्य साहित्य का इतिहास। (08 अंक)

बणभट्ट, दण्डी, सुबन्धु, अम्बिकादत्त व्यास, विष्णुशर्मा।

घटक– III संस्कृत व्याकरण : 15 अंक

(क) समास– अव्ययीभाव तथा तत्पुरूष,द्वंद्व तथा बहुव्रीहि। (08 अंक)

ख) कृत्प्रत्यय– क्त्वा, तुमुन्,ण्यत्,यत्,क्त, क्तवतु, शतृ, शानच्, तव्य, अनीयर्। (07 अंक)

घटक– IV (क) वरदराज–लघुसिद्धान्तकौमुदी–प्रत्याहार सूत्र (माहेश्वरसूत्र) (08 अंक) 15 अंक

ख) संस्कृत– पत्र–लेखनम् (07 अंक)

Guru Jambheshwar University of Science & Technology, Hisar

Sanskrit (Elective)

B.A. IInd Year 4thSemester

PAPER-A (THEORY) **SANE 202 : Sanskrit (Elective)**

(w.e.f. the academic session 2019-20)

कुल अंक– 100
लिखित परीक्षा– 80
आंतरिक मूल्यांकन – 20
समय– 3 घण्टे

निर्देश–

1. प्रश्न पत्र में कुल 5 प्रश्न पूछे जाएंगें। परीक्षार्थी को सभी प्रश्न हल करने होगें। प्रथम प्रश्न पाठ्यक्रम में निर्धारित चारों घटकों पर आधारित होगा तथा अनिवार्य होगा। द्वितीय, तृतीय, चतुर्थ तथा पंचम प्रश्न का निर्माण पाठ्यक्रम के क्रमशः प्रथम, द्वितीय, तृतीय, तथा चतुर्थ घटक में निर्धारित विषय के आधार पर किया जाएगा। प्रश्नपत्र कुल 100 अकों का होगा, जिस में से 20 अंक आंतरिक मूल्याकंन के होगें।
2. अनिवार्य प्रथम प्रश्न में लघु उत्तर वाले 10 प्रश्न पूछे जाएंगें। प्रत्येक लघूत्तरात्मक प्रश्न 2 अंकों का होगा। प्रथम प्रश्न को छोड़कर सभी प्रश्न 15–15 अंक के होगें। जिनमें कम से कम पचास प्रतिशत विकल्प रहेगा। प्रश्न पत्र हल करने का समय तीन घण्टे होगा।

घटक–I कालिदास, रघुवंश– द्वितीय सर्ग। 15 अंक

क) दो श्लोकों की व्याख्या। (10 अंक)

ख) एक आलोचनात्मक प्रश्न अथवा पाठ्यांश का सार। (5 अंक)

घटक– II अम्बिकादत्त व्यास, शिवराजवविजय– प्रथम निःश्वास 15 अंक

(क)गद्यांश व्याख्या । (10)

ख) एक आलोचनात्मक प्रश्न अथवा पाठ्यांश का सार । (5 अंक)

घटक– III संस्कृत व्याकरण : 15 अंक

(क) वाच्य–कर्तृवाच्य, कर्मवाच्य तथा भाववाच्य (5 अंक)

ख) तद्धित प्रत्यय– मतुप्, इनि, ठन् , त्व, तल् तथा छ। (4 अंक)

(ग) णिजन्त तथा सन्नन्त धातु के सिद्ध रूप (केवल लट् लकार में)

भू , पठ्, गम्, पा, लिख्, श्रु , कृ, दा, स्था, हन्। (6 अंक)

घटक– IV (क) वरदराज, लघुसिद्धान्तकौमुदी–संज्ञाप्रकरण (सोदाहरण सूत्रव्याख्या) (8 अंक) 15 अंक

ख) अनुवाद– सरल हिन्दी से संस्कृत में अनुवाद। (7 अंक)

Guru Jambheshwar University of Science & Technology, Hisar

Sanskrit (Elective)

B.A. IInd Year 5thSemester

PAPER-A (THEORY) **SANE 301 : Sanskrit (Elective)**

(w.e.f. the academic session 2020-21)

कुल अंक– 100
लिखित परीक्षा– 80
आंतरिक मूल्यांकन – 20
समय– 3 घण्टे

निर्देष–

1. प्रश्न पत्र में कुल 5 प्रश्न पूछे जांएगें। परीक्षार्थी को सभी प्रश्न हल करने होगें। प्रथम प्रश्न पाठ्यकम में निर्धारित चारों घटकों पर आधारित होगा तथा अनिवार्य होगा। द्वितीय, तृतीय, चतुर्थ तथा पंचम प्रश्न का निर्माण पाठ्यकम के कमषः प्रथम, द्वितीय, तृतीय, तथा चतुर्थ घटक में निर्धारित विशय के आधार पर किया जाएगा। प्रश्न पत्र कुल 100 अकों का होगा, जिस में से 20 अंक आंतरिक मूल्यकान के होगें।
2. अनिवार्य प्रथम प्रश्न में लघु उत्तर वाले 10 प्रश्न पूछे जाएंगें। प्रत्येक लघूत्तरात्मक प्रश्न 2 अंकों का होगा। प्रथम प्रश्न को छोड़कर सभी प्रश्न 15–15 अंक के होगें। जिनमें कम से कम पचास प्रतिषत विकल्प रहेगा। प्रश्न पत्र हल करने का समय तीन घण्टे होगा।

घटक–I : कालिदास, अभिज्ञानशाकुन्तल– प्रथम से चतुर्थ अंक तक। **15 अंक**

(क) दो पाठ्यांशों की सप्रसंग व्याख्या। (2x5=10 अंक)

(ख) एक सूक्ति की व्याख्या अथवा निर्धारित अंकों में से किसी अंक का सार अथवा एक आलोचनात्कक प्रश्न (5 अंक)

घटक–II : कालिदास : जीवन–परिचय, काल–विवेचन, काव्य–शैली, नाट्य–शैली। **15 अंक**

घटक–III : संस्कृत साहित्य का इतिहास : **15 अंक**

वैदिकसाहित्य– संहिता, ब्राह्मण, आरण्यक, उपनिषद्, वेदाङ्ग साहित्य।

घटक–IV : (क) वरदराज, लघुसिद्धान्तकौमुदी– **7 अंक**

विभक्त्यर्थप्रकरण : सूत्रव्याख्या/वाक्य–रचना/अशुद्धि–संशोधन।

(ख) अलंकार : अनुप्रास, श्लेष, यमक, उपमा, उत्प्रेक्षा, रूपक, अतिशयोक्ति विशेषोक्ति, विभावना, अर्थान्तरन्यास।

(भेदोपभेद को छोड़कर केवल लक्षण, उदाहरण एवं संगति) **8 अंक**

Guru Jambheshwar University of Science & Technology, Hisar

Sanskrit (Elective)

B.A. II[nd] Year 6thSemester

PAPER-A (THEORY) **SANE 302 : Sanskrit (Elective)**

(w.e.f. the academic session 2020-21)

कुल अंक– 100
लिखित परीक्षा– 80
आंतरिक मूल्यांकन – 20
समय– 3 घण्टे

निर्देष–

1. प्रश्न पत्र में कुल 5 प्रश्न पूछे जांएगें। परीक्षार्थी को सभी प्रश्न हल करने होगें। प्रथम प्रश्न पाठ्यकम में निर्धारित चारों घटकों पर आधारित होगा तथा अनिवार्य होगा। द्वितीय, तृतीय, चतुर्थ तथा पंचम प्रश्न का निर्माण पाठ्यकम के कमषः प्रथम, द्वितीय, तृतीय, तथा चतुर्थ घटक में निर्धारित विशय के आधार पर किया जाएगा। प्रश्न पत्र कुल 100 अकों का होगा, जिस में से 20 अंक आंतरिक मूल्याकंन के होगें।
2. अनिवार्य प्रथम प्रश्न में लघु उत्तर वाले 10 प्रश्न पूछे जाएंगें। प्रत्येक लघूत्तरात्मक प्रश्न 2 अंकों का होगा। प्रथम प्रश्न को छोड़कर सभी प्रश्न 15–15 अंक के होगें। जिनमें कम से कम पचास प्रतिषत विकल्प रहेगा। प्रश्न पत्र हल करने का समय तीन घण्टे होगा।

घटक–I : कालिदास, अभिज्ञानशाकुन्तल– पञ्चम से सप्तम अंक तक। **15 अंक**

(क) दो पाठ्यांशों की सप्रसंग व्याख्या। (2x5=10 अंक)

(ख) एक सूक्ति की व्याख्या अथवा निर्धारित अंकों में से किसी अंक का सार अथवा एक आलोचनात्कक प्रश्न (5 अंक)

घटक–II : कालिदास की कृतियों में जीवन–दृष्टि, राष्ट्रीय भावना, प्रकृति–चित्रण, अलङ्कार–प्रयोग। **15 अंक**

घटक–III : संस्कृत साहित्य का इतिहास : **15 अंक**
वाल्मीकि, व्यास, भवभूति, अम्बिकादत्त व्यास, भारवि, विष्णुशर्मा, भर्तृहरि, जयदेव (लेखकों और उनकी कृतियों का सामान्य परिचय)।

घटक–IV : (क) वरदराज, लघुसिद्धान्तकौमुदी– **8 अंक**
स्त्रीप्रत्ययप्रकरण : उदाहरण सहित सूत्र व्याख्या।

(ख) संस्कृत–निबन्ध (सरल विषय पर संस्कृत में एक निबन्ध) **7 अंक**

+

B.A.-1 Geography (Pass Course) 1st Semester
GEOG – 101: Geography of India

Maximum Marks: 70
External Assessment: 50
Internal Assessment: 20
Time: 3 Hours

Note:-

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 70 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 1 mark each) spread over the whole syllabus. Other questions will carry the 10 marks each.

SECTION- A

1. India: Location, relief, and drainage systems.
2. Climate, soils, natural vegetation, and natural disasters in India.

SECTION – B

3. Population: distribution, density, growth and composition.
4. Production and Distribution of crops: Rice, Wheat, Cotton and Sugarcane with special reference to Haryana, Green revolution.

SECTION-C

5. Energy resources: coal, petroleum, hydroelectricity, solar, and nuclear energy
6. Mineral resources: iron ore, manganese, aluminium, and mica.

SECTION-D

7. Industries- iron and steel, cotton textile, sugar and industrial regions of India with special reference to Haryana.
8. Transport and communication, Modes of transport: Road, Railway, Water.

Suggested Readings

1. Deshpande, C D: India – A Regional Interpretation, Northern Book Depot, New Delhi,
1992.
2. Singh, Gopal : Geography of India, Atma Ram and Sons, 2006.
3. Shafi, M : Geography of South Asia, McMillan and Company, Calcutta, 2000.
4. Singh, R L (ed) : India : A Regional Geography, National Geographical Society, India,
Varanasi, 1971.
5. Spate, D H K and ATA Learmonth : Indian and Pakistan – Land, People and Economy,
Methnen and Company, London, 1967.

B.A.-1 Geography (Pass Course Practical) 1st Semester
GEOG- 102: Maps, Scales

Maximum Marks: 30
Time: 3 Hours

Distribution of Marks
Exercises = 18
Record File = 6
Viva-voce = 6
Note: There will be four questions in all and candidate has to attempt three questions

	Exercises
1. Introduction to Cartography.	
2. Maps and their types.	
3. Map Scales.	
(i) Methods of Expressing a scale	2
(ii) Conversion of Statement of Scale into R.F. and vice-versa.	1
(iii) Plain Scale (Km and mile)	1
(iv) Comparative Scale	2
(v) Diagonal Scale	2
4 Measurement of Distances and Areas on Maps	2
5 Enlargement and Reduction of Maps	2

Suggested Readings :

1. F.J. Monkhouse and H.R. Wilkinson (1972) Maps and Diagrams, Mothuen and Co. Ltd., London
2. L.R. Singh and Raghuvander Singh (1973), Map Work and Practical Geography, Central Book Depot, Allahabad.
3. R.I. Singh and P.K. Dutt (1968), Elements of Practical Geography, Students Friends, Allahabad.
4. Singh, Gopal (2004) 4th edition, Map Work and Practical Geography, Viksa Publication House.

B.A.-1 Geography (Pass Course) 2nd Semester

GEOG – 103: Physical Geography -Geomorphology

Maximum Marks: 70
External Assessment: 50
Internal Assessment: 20
Time: 3 Hours

Note:-

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 70 marks out of which 20 marks will be earmarked for internal assessment.

2 The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 1 mark each) spread over the whole syllabus. Other questions will carry the 10 marks each.

SECTION- A

1. Definition, Nature, scope and fields of Physical Geography.
2. Interior of the earth, Geological time scale and rocks.

SECTION- B

3. Earth movements; folds and faults; earth quakes and volcanoes.
4. Theory of Isostasy; Wegner's theory of continental drift and Plate tectonic theory.

SECTION- C

5. Weathering; processes and its types.
6. Mass-movements; causes, its types and impacts.

SECTION- D

7. Cycle of erosion; concepts and theories of W.M. Davis and Penck.
8. Processes and landforms of Wind, River, Underground water, and Glaciers.

References

1. Sharma H.S. Perspective in Geomorphology, Concept, New Delhi 1980.
2. Singh Savinder, Geomorphology, Prayag Publication, Allahabad 1998.
3. Singh Savinder, Physical Geography Prayag Publication, Allahabad, 1998.
4. Sparks B.W. Geomorphology, Jojngman, London, 1960.
5. Thornbury W.D. 1969 Principles of Geomorphology, New York, John Wiley & Sons.

B.A.-1 Geography (Pass Course Practical) 2nd Semester

GEOG- 104: Representation of Physical Features

Maximum Marks: 30
Time: 3 Hours

Distribution of Marks
Exercises = 18
Record File = 6
Viva-voce = 6
Note: There will be four questions in all and candidate has to attempt three questions

	Exercises
1. Introduction to Topographical Sheets India and adjacent countries Degree Sheet Half Degree Sheet Quarter Degree Sheet Conventional Signs	3
2. Methods of representing relief	1
3. Representation of Topographical features by contours. Slopes (Concave, convex, undulating and terraced) Valleys (V Shaped, U shaped, Gorge, Re-entrant) Ridges (Conical hill, Volcanic hill, Plateau, Escarpment) Complex features (waterfall, sea cliff, overhanging cliff, Fiord coast)	4
4. Drawing of Profiles (a) Cross Profiles: Serial, superimposed, projected and composite profiles. (b) Longitudinal profiles	5
5. Chain and Tape Survey.	2

Suggested Readings:

1. F.J. Monkhouse and H.R. Wilkinson (1972) Maps and Diagrams, Mothuen and Co. Ltd., London
2. L.R. Singh and Raghuvander Singh (1973), Map Work and Practical Geography, Central Book Depot, Allahabad.
3. R.I. Singh and P.K. Dutt (1968), Elements of Practical Geography, Students Friends,
Allahabad.
4. Singh Gopal (2004) 4th edition, Map Work and Practical Geography, Viksa Publication House.

GEOGRAPHY (PASS COURSE)

B.A. II[nd] Year 3[rd]Semester

PAPER-A (THEORY) **GEOG 201 : Physical Geography-II**

(w.e.f. the academic session 2019-20)

Maximum Marks :70
External Marks :50
Internal Marks: 20
Time : 3 hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shallattempt *four* more questions selecting at least *one* from each Unit. The paper willcarry 70 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 1 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

SECTION-A

1. Weather and Climate; Origin, composition and structure of atmosphere.
2. Insolation, Global heat budget, Horizontal and vertical distribution of temperature, inversion of temperature.

SECTION-B

1. Atmospheric pressure- measurement and distribution, pressure belts, planetary winds, Monsoon, Jet Streams EL NINO- La Nina Phenomenon and Local winds.
2. Humidity- measurement and variables, evaporation, condensation, precipitation types and distribution, hydrological cycle.

SECTION-C

1. Air masses- concept and classification; Fronts- type and characteristics, Weather disturbances- tropical and extra-tropical cyclones.
2. Climate classification by Koppen; climatic change and global warming.

SECTION-D

1. Configuration of oceanic floors and surface relief of Pacific, Atlantic and Indian Oceans; temperature and salinity of oceans.
2. Tides, waves and oceanic currents; circulation in Pacific, Atlantic and Indian Oceans; Oceanic resources.

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GEOGRAPHY (PASS COURSE)

B.A. IInd Year 3rdSemester

PAPER-A (PRACTICAL) GEOG(P) 202 : Representation of Climatic Data

(w.e.f. the academic session 2019-20)

Maximum Marks :30
Time : 3 hours

Distribution of Marks
Exercise: 18
Record File: 06
Vivo-voce : 06

Note: There will be four questions in all and candidate has to attempt three exercises.

1. Measurement of temperature, rainfall, pressure and humidity.
2. Representation of temperature and rainfall.

   (i) Line and Bar Graph – 1 Exercise.
   (ii) Distribution of temperature (180 therms) – 1 Exercise.
   (iii) Distribution of rainfall (180 hytes) – 1 Exercise.
   (iv) Hythergraph - 1 Exercise.
   (v) Rainfall deviation diagram - 1 Exercise.
3. Climograph (wet and dry places) - 2 Exercise.
4. Distribution of pressure (180 bars) - 2 Exercise.
5. Weather map Interpretation (January & July) - 2 Exercise.

Suggested Readings:

1. Mishra R.P. and Ramesh A. 1999. Fundamentals of Cartography, Concept Publishing Company, New Delhi.
2. Monkhouse, FJ, and Wilkinson H.R., 1972. Maps and Diagrams, Methuen Press, London
3. Robinson, A.H. et.al. Elements of Cartography, John Wiley & Sons, 1995.
4. Singh, R.L., 1979. Elements of Practical Geography, Kalyani Publisher, New Delhi.

GEOGRAPHY (PASS COURSE)

B.A. II[nd] Year 4[th]Semester

PAPER-A (THEORY) **GEOG 203 : Human Geography**

(w.e.f. the academic session 2019-20)

Maximum Marks :70
External Marks :50
Internal Marks: 20
Time : 3 hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shallattempt *four* more questions selecting at least *one* from each Unit. The paper willcarry 70 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 1 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Section -I

1. Nature and scope of Human Geography, Branches of Human Geography, Approaches to the study of Human Geography.
2. Division of Mankind: Spatial distribution of race of India; concept of men-environment relation: A historical approach.

Section - II

1. Human adaptation to the environment (i) Cold region – Eskimo (ii) Hot region- Bushman (iii) Plateau – Gonds (iv) Mountains – Gujjars
2. Meaning, nature and components of resources; Classification of resources – renewal and non- renewable ; biotic and aboitic, recyclable and non recyclable.

Section - III

1. Distribution and density of world population, population growth, Demographic Transition Model.
2. Concept of over, under and optimum population; Population theories: Malthus, Ricardo and Marx.

Section-IV

1. Rural settlements: Meaning, classification and types. Urban settlements: Origin, classification and functions of towns, Problems of urbanization in India.
2. Population pressure, resource use and environment degradation; sustainable development, concept of deforestation, soil erosion, air and water pollution.

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GEOGRAPHY (PASS COURSE)

B.A. IInd Year 4th Semester

PAPER-A (PRACTICAL) GEOG(P) 204 : Map Projections

(w.e.f. the academic session 2019-20)

Maximum Marks :30
Time : 3 hours

Distribution of Marks
Exercise: 18
Record File: 06
Vivo-voce : 06

Note: There will be four questions in all and candidate has to attempt three exercises.

Total Exercises = 15

1. Introduction to Map Projection: Meaning, Classification and importance; (5)
   Characteristics of latitudes and longitudes lines.
2. Cylindrical projections : Characteristics applications and drawing;
   (i) Simple cylindrical projection
   (ii) Cylindrical equal area projection.
   (iii) True shape or orthomorphic or Mercator's Projection.
3. Conical Projections: Characteristics, applications and drawing. (5)
   (i) Simple conical projections with one standard parallel
   (ii) Simple conical projection with two standard parallel
   (iii) Bonne's Projection
   (iv) Polyconic projection.
   (v) International Map Projection.
4. Zenithal Projections: Characteristics, applications and drawing. (5)
   (i) Polar Zenithal Equidistant Projection
   (ii) Polar Zenithal Equal Area Projection
   (iii) Polar Zenithal Gnomonic Projection
   (iv) Polar Zenithal Stereographic Projection
   (v) Polar Zenithal Orthographic Projection

5. Characteristics, applications and drawings of (2)
   (i) Sinosoidal and (ii) Mollweide Projections.
6. Plane Table Survey. (2)

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Geography (Pass Course)

B.A. IIIrd Year 5thSemester

PAPER-A (THEORY) **GEOG 301 : Economic Geography**

(w.e.f. the academic session 2020-21)

Maximum Marks :70
External Marks :50
Internal Marks: 20
Time : 3 hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 70 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 1 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Section A

1. Definition, Nature, scope and approaches of economic geography. Relationship of economic geography with economics and other branches of social sciences.
2. Main concept of economic geography; resources concept and classification; resource and conservation.

Section B

3. factors affecting location of economic activity with special reference to agriculture (Von Thunen Theory), Industry (weber's Theory)

Section C

4. Subsistence and commercial agriculture(rice, wheat, cotton, sugarcane, tea, rubber and coffee)
5. Manufacturing (cotton textile, iron and steel), concept of manufacturing regions, special economic zones and technology parks.

Section D

6. World transportation: major trans-continental railways and sea routes, geo-economic factors in their development.
7. WTO and international trade; patterns and trends; major trade blocks; Effect of globalization on developing countries.

Suggested Readings:

1. Hartshorne TN and Alexander JW. 1988. Economic Geography, Prentice Hall, New Delhi.
2. Jones CF and Darkenwald GG. 1975. Economic Geography. McMillan Company, New York
3. Thomas, RS. 1962. The Geography of Economic Activities. McGraw Hill, New York.
4. Wheeler J et al. 1995. Economic Geography. John Wiley, New York.

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GEOGRAPHY (PASS COURSE)

B.A. IIIrd Year 5thSemester

PAPER-A (PRACTICAL) GEOG(P) 302 : Distribution Maps, Diagrams

(w.e.f. the academic session 2020-21)

Maximum Marks :30
Time : 3 hours

Distribution of Marks
Exercise: 18
Record File: 06
Vivo-voce : 06

Note: There will be four questions in all and candidate has to attempt three exercises.

1. Principal of map design and layout
2. Symbolization: point, line and area symbol
3. Lettering and toponomy
4. Mechanics of map construction
5. Distribution maps

   (i) Qualitative distribution maps

   Choroschematic maps- 1 Exercise

   Chorochromatic maps- 2 Exercise

   (ii) Quantitative distribution Maps

   Isopleth maps-3 Exercises

   Choropleth maps-3 Exercises

   Dot maps-3 Exercises

   Diagrammatic maps- 3 Exercises.
6. Prismatic Compass Survey – 2 Exercises.

Suggested readings:

1. Mishra RP and Ramesh A. 1999. Fundamentals of Cartography, Concept Publishing Company, New Delhi.
2. Monkhouse FJ and Wilkinson HR. 1972. Maps and Diagrams, Methuen Press, London
3. Singh Gopal. 2004. Map Work and Practical Geography, Vikas Publication House, New Delhi.
4. Singh RL. 1979. Elements of Practical Geography, Kalyani Publishers, New Delhi

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GEOGRAPHY (PASS COURSE)

B.A. IIIrd Year 6thSemester

PAPER-A (THEORY) **GEOG 303 : Introduction to Remote Sensing, GIS & Quantitative Methods**

(w.e.f. the academic session 2020-21)

Maximum Marks :70
External Marks :50
Internal Marks: 20
Time : 3 hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper willcarry 70 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 1 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Section-A

1. Introduction to Aerial Photographs: their advantages and types.
2. Elements of aerial Photo interpretation.

Section-B

3. Basic of Remote Sensing (Electromagnetic Spectrum, Sensors and Platform, Resolution and Types)
4. Development of Remote Sensing Technology; Types of Imageries and its use in Natural resources management India

Section-C

5. Introduction to Geographical Information System: Definition, purpose, advantages and software and hardware requirements.
6. Application of GIS in various fields of geography.

Section-D

7. Measure of Central Tendency: Mean, Median and Mode.
8. Measure of Dispersion: Range, Quartile deviation and Mean deviation, Standard deviation, Coefficient of variation.

Suggested Readings:

1. AslamMahmood 1993. Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi,.
2. John R. Jensen 2009. Remote Sensing of the Environment;, An Earth Resource Perspective, Pearson Education, (India Edition) New Delhi,
3. Kumar Meenakshi 2001. Remote Sensing, NCERT, New Delhi,
4. Lillesand and R.W.Kiefer,2005. Remote Sensing and Image Interpretation, John Wiley and Sons. PritvishNag, and M.Kudrat 1998. Digital Remote Sensing, Concept Publishing Company, New Delhi,

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GEOGRAPHY (PASS COURSE)

B.A. IIIrd Year 6th Semester

PAPER-A (PRACTICAL) GEOG(P) 304 : Remote Sensing and Field Survey Report

(w.e.f. the academic session 2020-21)

Maximum Marks :30
Time : 3 hours

Distribution of Marks
Exercise: 18
Record File: 06
Vivo-voce : 06

Note: There will be four questions in all and candidate has to attempt three exercises.

1. Demarcation of Principal Point, Conjugate Principal point and Flight line on Aerial Photographs – 1 Exercise
2. Determination of Scale of Aerial Photographs – 1 Exercise.
3. Interpretation of Single Vertical Photographs – 1 Exercise.
4. Use of Stereoscope and Identification of Features – 1 Exercise.
5. Identification of Features on IRSID, LISS III imagery (Mark copy of FCC) -1 Exercise.

   Socio-economic Survey and Report Writing -15 marks.

   Field Survey Report = 10 marks

   Viva-voce = 04 marks

Suggested readings:

1. Singh RL. 1979. Elements of Practical Geography, Kalyani Publishers, New Delhi
2. John R. Jensen, Remote Sensing of the Environment; An Earth Resource Perspective, Pearson Education, (India Edition) New Delhi, 2009.
3. Lillesand and R.W.Kiefer, Remote Sensing and Image Interpretation, John Wiley and Sons, 1994.
4. Kumar Meenakshi 2001. Remote Sensing, NCERT, New Delhi,

Environmental Studies

Course Code: EVS-201-L **Course Credits: 4** **Mode: Lecture(L) and Tutorial(T)** **Type: Compulsory** **Contact Hours: 4 hours (L) per week.** **Examination Duration: 03 hours.**	**Course Assessment Methods (Internal: 30; External: 70)** Two minor test each of 20 marks, class performance measured through percentage of lecture attended (4 marks), assignments, quiz etc. (6 marks) and end semester examination of 70 marks. For the end semester examination, nine questions are to be set by the examiner. Question number one will be compulsory and based on the entire syllabus, it will contain seven short answer type question. Rest of the eight questions is to be given by setting two questions from each of the four units of the syllabus. A candidate is required to attempt any other four questions selecting one from each of the four units. All questions carry equal marks.

Prerequisite: Student should have prior knowledge of basic environment science.

Objectives:

- To enhance knowledge skills and attitude towards environment.
- To understand natural environment and its relationship with human activities.

Course outcomes:

CO-1 Students will be able to enhance and analyze human impacts on the environment.
CO-2 Integrate concepts & methods from multiple discipline and apply to environmental problems.
CO-3 Design and evaluate strategic terminologies and methods for sustainable m anagement of environmental systems.
CO-4 Field studies would provide students first-hand knowledge on various local environment aspects which forms an irreplaceable tool in the entire learning process.

Unit-I

Multidisciplinary nature of Environmental studies: Definition, scope and importance, need for public awareness; Concept, Structure and function of an ecosystem: Producers, consumers and decomposers, Energy flow in the ecosystem ,Ecological succession ,Food chains, Food webs and ecological pyramids; Introduction, characteristics features, structure and function of different ecosystems such as Forest ecosystem, Grassland ecosystem ,Desert ecosystem, Aquatic ecosystem (Ponds, Stream, lakes, rivers, oceans, estuaries); Biodiversity: Introduction, Definition: genetic, species and ecosystem diversity, Bio-geographical classification of India, Ecosystem & biodiversity services: ecological, economic ,social ,consumptive use, productive use, social ethical, aesthetic and option values; Biodiversity at global, national and local level, India as a mega-diversity nation, Global Hot-spot of biodiversity, Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts, Biological invasions ,Endangered and endemic species of India, Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

Unit-II

Renewable and non-renewable resources, Natural resources and associated problems ,Forest resources: Use and over-exploitation, deforestation, case studies, Timber extraction, mining, dams and their effects on forests and tribal people; Water resources: Use and over utilization of surface and ground water, floods, droughts conflicts over water, dams benefits and problems; Mineral resources: Use and exploitation, environmental effects of extracting and mineral resources; Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity; Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies; Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

Unit-III

Definition of Environment Pollution; Causes, effects and control measures of: Air Pollution, Water Pollution, Soil pollution, Noise pollution, Nuclear hazards and human health risks; Solid waste Management: Causes, effects and control measures of urban and industrial wastes; Pollution case studies; Disaster management: floods, earthquake, cyclone and landslides, Climate change, global warming, acid rain, ozone layer depletion; different laws related to environment; Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and Control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act.; International agreements :Montreal & Kyoto Protocol & Nature reserves, tribal populations and human health,

Unit-IV

Concept of sustainability & sustainable development, water conservation, rain water harvesting, watershed management, Resettlement and rehabilitation of project affected persons; case studies ; Environment ethics; role of Indian and other religions and cultures in environmental conservation, Environmental communication and public awareness, case studies(eg.CNG vehicles in Delhi); Human Population growth: Impact on environment, human health & welfare ,Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.

Field Work: Visit to a local area to document environmental assets- river/forest/grassland/hill/mountain; Study of simple ecosystems – ponds, river, hill slopes etc; Study of common plants, insects, birds; Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.

TEXT BOOK:

1. Erach Bharucha , "Environmental Studies for Undergraduate Courses", University Grants Commission and Bharati Vidyapeeth Institute of Environment Education and Research, Pune, University press pvt. Ltd. (India)
2. Fundamental concepts in Environmental studies by Dr. D.D. Mishra. S. Chand publications

REFERENCE BOOKS:

1. Essentials of Ecology and Environmental Science by Dr. S .V .S. Rana, PHI Learning Pvt. Ltd, Delhi
2. Environmental Chemistry by Anil Kumar De, Wiley Eastern Limited.
3. Environmental Science by T.G. Miller, Wadsworth Publishing Co, 13th edition.
4. Ecology and Environment by P. D. Sharma, Rastogi publications

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B.A. (GENERAL) HISTORY (SEMESTER SYSTEM)
B.A. (General) History – Part – I, Semester – I
SCHEME OF EXAMINATION
(TO BE INTRODUCED IN PHASED MANNER W.E.F. 2018-2019)
LIST OF PAPERS
Syllabus and Courses of Reading

Option –(i): HIST 101: Ancient India (From Earliest Times to Gupta Age)

External Marks: 80
Internal Assessment: 20
Time Allowed: 3 Hours

Note :-

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.
3. The Map Question will be carrying 15 marks (10 for map work and 5 for explanatory note). For visually disabled candidates, the part relating to the explanatory note will carry full marks.

Unit- I

Meaning and Scope of History
Sources of Ancient Indian History
Pre-Historic Age: Hunter Gatherers, Concept of Neolithic
Harappan Civilization: Origins, Extent, Town Planning, Economy, Society, Arts, Political Organization and causes of decline.

Unit- II

Vedic Culture and Literature: Polity, Society & Religion
Social Institutions: Varna, Caste and Untouchability
Emergence of Sixteen Mahajanpas and the Rise of Magada Empire
Religious Movements: Causes of Rise of Religious movement, Buddhism and Jainism

Unit- III

Mauryan Empire: Polity and Economy, Administration; Ashoka's Dhamma
Post-Mauryan Empires: Kushanas and Satvahanas
Gupta Empire: Establishment and Expansion, Administration, Society, Economy, Art and Architecture

Unit-IV

Maps (India):
Important Sites of Harappan Civilization
Ashoka's Empire: Extent, Pillars and Edicts
Extent of Kanishka's Empire
Extent of Samudragupta's Empire
Ports and Urban Centers in Ancient India

Guru Jambheshwar University of Science & Technology, Hisar

B.A. (GENERAL) HISTORY (SEMESTER SYSTEM)
B.A. (General) History – Part – I, Semester – II
SCHEME OF EXAMINATION
(TO BE INTRODUCED IN PHASED MANNER W.E.F. 2018-2019)
LIST OF PAPERS
Syllabus and Courses of Reading

Option – (i): HIST 103: History of India (600-1526 A.D.)

External Marks: 80
Internal Assessment: 20
Time Allowed: 3 Hours

Note :-

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other question will carry the 15 marks each.
3. The Map Question will be carrying 15 marks (10 for map work and 5 for explanatory note). For visually disabled candidates, the part relating to the explanatory note will carry full marks.

Unit- I

Post-Gupta Period up to 750 A.D.: Pushyabhutis and Chalukyas
Polity and Economy (750- 1206 A.D.), Tri-Parties Struggle Pratiharas, Palas and Rashtrakutas & Cholas; Indian form of Feudalism.
Socio-Cultural Trends: Society, Culture and Literature during 600-1206 A.D.

Unit-II

Turk's Invasions on India: Mahmud Ghaznavi and Muhammad Ghori
Rise and Expansion of Delhi Sultanate: Iltutmish, Balban, Ala-ud-din Khilji and Muhammad Tughlaq
Down Fall and Fragmentation of Delhi Sultanate

Unit-III

Bahmani and Vijaynagar Kingdoms in South India.
Delhi Sultanate: Administration, Ruling Classes and Society
Economic Developments during Delhi Sultanate
Religion and Culture: Bhakti and Sufi Movements, Art and Architecture.

Unit-IV

Maps (India):
Extent of Harsha's Empire
Extent of Ala-ud-din Khiji's Empire
Extent of Muhammad Tughlaq's Empire
Extent of Vijaynagar Empire
Urban Centers under the Delhi Sultanate

Guru Jambheshwar University of Science & Technology, Hisar

History

B.A. II[nd] Year 3[rd]Semester

PAPER-A (THEORY) HIST 201 :Political History of India (1526 – 1857 A.D.) (Option-I)

(w.e.f. the academic session 2019-20)

Maximum Marks :100
External Marks :80
Internal Assessment :20
Time :3 hours

Note :-

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shallattempt four more questions selecting at least one from each Unit. The paper willcarry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.
3. The Map Question will be carrying 15 marks (10 for map work and 5 forexplanatory note). For visually disabled candidates, the part relating to theexplanatory note will carry full marks.

Unit – I

Establishment of the Mughal Empire: Babur
Sher Shah Suri and His Administration
Akbar: Expansion of Empire and Religious Policy
Aurangzeb: Expansion of Empire and Religious Policy

Unit – II

Relations of Mughals with the Rajputs
Deccan Policy of the Mughals
Mughal Administration and Revenue System
Institutions: Mansabdari and Jagirdari
Decline of the Mughal Empire

Unit- III

Rivalry between the French and the British in India
Founding of the British Empire: Battles of Plessey & Buxer
Consolidation of the British Empire: Subsidiary Alliance System and Doctrine of Lapse; Annexation of Punjab
Uprising of 1857: Causes, Events and Consequences

Unit – IV

Maps (India):
Political Conditions of India in 1526
Mughal Empire at the Death of Akbar (1605)
Mughal Empire at the Death of Aurangzeb (1707)
Expansion of British Empire upto 1856
Major Centres of the Uprising of 1857

Guru Jambheshwar University of Science & Technology, Hisar

History

B.A. II[nd] Year 4[th] Semester

PAPER-A (THEORY) HIST 203 : Indian National Movement (Option-I)

Maximum Marks :100
External Marks :80
Internal Assessment :20
Time :3 hours

Note :-

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shallattempt four more questions selecting at least one from each Unit. The paper willcarry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.
3. The Map Question will be carrying 15 marks (10 for map work and 5 forexplanatory note). For visually disabled candidates, the part relating to theexplanatory note will carry full marks.

Unit – I

Origins of the National Consciousness
Founding of Indian National Congress and Moderates
Extremists: Ideology, Programmes and Politics
Home Rule Movement

Unit – II

Role of Mahatma Gandhi in Freedom Movement: Non-Cooperation Movement, Civil Disobedience Movement and Quit India Movement
Ideology and Contribution of Revolutionaries with special reference to Bhagat Singh
Subhash Chandra Bose and Indian National Army

Unit- III

Political Reforms: Acts of 1909 and 1919
Rise of Communal Politics: Muslim League – Ideology and Politics
Poona Pact and the Act of 1935
Partition and Independence of India

Unit – IV

Maps (India):
Places of Important Sessions of Indian National Congress
Areas and Centers of Home Rule Movement
Areas and Centers of Civil Disobedience Movement
Important Centers of Revolutionary Movement
Areas and Centers of Quit India Movement

Guru Jambheshwar University of Science & Technology, Hisar

History

B.A. IIIrd Year 5thSemester

PAPER-A (THEORY) **HIST 302 : Rise of Modern World (Option-II)**

(w.e.f. the academic session 2020-21)

Maximum Marks :100
External Marks :80
Internal Assessment :20
Time :3 hours

Note :-

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper willcarry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.
3. The Map Question will be carrying 15 marks (10 for map work and 5 forexplanatory note). For visually disabled candidates, the part relating to theexplanatory note will carry full marks.

Unit – I

Transition from Feudalism to Capitalism in Europe
Renaissance: Origins, Emergence and Results
Reformation: Origins, Emergence and Results

Unit – II

Shift of Economic Balance from the Mediterranean to Atlantic Region
Early Colonial System: Motives, Process and Consequences of Colonization of Americas
Mercantile Revolution: Origins and Results

Unit- III

Scientific Revolution: Origins and Impact
Glorious Revolution: Origins and Results
Industrial Revolution: Origins, Progress and Impact
Agricultural Revolution: Origins, Progress and Impact

Unit – IV

Maps (Europe):
Important Centers of Renaissance
Important Centers of Reformation
Important Mercantile Centers
Major Places Connected with Industrial Revolution
Capitalist Powers of Europe

Guru Jambheshwar University of Science & Technology, Hisar

History

B.A. IIIrd Year 6th Semester

PAPER-A (THEORY) HIST 304 : Modern World (Option-II)

(w.e.f. the academic session 2020-21)

Maximum Marks: 100
External Marks: 80
Internal Assessment: 20
Time : 3 hours

Note :-

1. The question paper will consist of nine questions. The candidate shall attempt five questions in all. The Question No. 1 will be compulsory. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The Compulsory Question No.1 will be short answer type questions containing ten questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.
3. The Map Question will be carrying 15 marks (10 for map work and 5 for explanatory note). For visually disabled candidates, the part relating to the explanatory note will carry full marks

Unit – I

American Revolution: Causes and Impact
French Revolution: Nature and Impact
Growth of Liberalism in England

Unit – II

Rise of Imperialism: Causes and Consequences
World War – I : Causes and Consequences
Paris Peace Settlement and its Consequences

Unit- III

Rise of Socialism and Bolshevik Revolution in Russia
Rise of Dictatorship: Nazism and Fascism
World War - II : Causes and Consequences

Unit – IV

Maps (World/ Europe):

Europe on the Eve of French Revolution
Polarization of Countries before World War-I
Europe after Paris Peace Settlement
Polarization of Countries before World War-II

Guru Jambheshwar University of Science and Technology, Hisar

B.A. (General) Part-I, Political Science (Semester-Wise)

Scheme of Examination w.e.f. 2018-19

Option	Nomenclature	Class	Internal Assessment	External Marks	Total Marks	Time
One Option may be chosen from the following Groups:-						
Option-I	POLS 101: Indian Constitution	Semester-I	20	80	100	3 Hrs
	POLS 103: Indian Politics	Semester-II	20	80	100	3 Hrs
Option-II	POLS 102: Principles of Political Science	Semester-I	20	80	100	3 Hrs
	POLS 104: Contemporary Political Science	Semester-II	20	80	100	3 Hrs

Syllabus and Courses of Reading w.e.f. 2018-19

Semester-I, Option-I: POLS 101: Indian Constitution

External Max. Marks : 80
Internal Max. Marks : 20
Time : 3 Hrs.

Note:-

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Unit-I Indian Constitution-Evolution, Sources and Features, Preamble, Fundamental Rights, Fundamental Duties and Directive Principles of State Policy.

Unit-II Union Legislature- Parliament-Composition and Functions; Speaker of Lok Sabha Amendment Process; State Legislature-Vidhan Sabha, Vidhan Parishad Panchayati Raj Institutions.

History, Basic Features and 73rd and 74th Amendments.

Unit-III Union Executive - President, Vice-President, Prime Minister, Council of Ministers; State Executive- Governor, Chief Minister and Council of Ministers.

Unit-IV Judiciary-Supreme Court, High Courts and Judicial Activism.

Redressal and grievances Institutions; RTI, Lokpal and Lokyaukat

B.A. (General) Part-I, Political Science (Semester-Wise)

Semester-II, Option-I: POLS 103: Indian Politics

External Max. Marks : 80
Internal Max. Marks : 20
Time : 3 Hrs.

Note:-

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Unit-I Federal: Nature and Features of Indian Federalism; Centre State Relations; Demand for State Autonomy; Emerging Trends in Indian Federalism; Working of NITI Ayog.

Unit-II Election Commission, Electoral Process and its Defects and Voting Behaviour, Electoral Reforms, Problem of Defection.

Unit-III Party System in India; Features, National and Regional Parties, and Defects. Coalitional Politics; Basis, Nature and Impact on Indian Polity. Pressure Groups.

Unit-IV Role of Caste, Religion, Language, Regionalism and Ethnicity in India, Politics of Reservation, Emerging Trends and Challenges Before Indian Political System.

Guru Jambheshwar University of Science & Technology, Hisar

POLITICAL SCIENCE

B.A. IInd Year 3rdSemester

PAPER-A (THEORY) POLS 202 : Indian Political Thinkers-I (Optional-II)

(w.e.f. the academic session 2019-20)

Maximum Marks : 100
External Marks : 80
Internal Assessment : 20
Time : 3 hours

Note:-

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Unit-I	Raja Ram Mohan Ray & Swami Dayanand
Unit-II	Swami Vivekanand &Aurbind Ghosh
Unit-III	Lala Lajpat Rai &Bal GangadharTilak
Unit-IV	Dada Bhai Narojee & Gopal KrishanGokhle

Readings

Guru Jambheshwar University of Science & Technology, Hisar

POLITICAL SCIENCE

B.A. IInd Year 4thSemester

PAPER-A (THEORY) POLS 204 : Indian Political Thinkers-II (Optional-II)

(w.e.f. the academic session 2019-20)

Maximum Marks : 100
External Marks : 80
Internal Assessment : 20
Time : 3 hours

Unit-I	J.P. Narayan & Ram Manohar Lohia
Unit-II	Mahatma Gandhi & M.N,Roy
Unit-III	Jawaharlal Nehru &B,R,Ambedkar
Unit-IV	Subhash Chander Bose & BhagatSingh

Readings

Guru Jambheshwar University of Science & Technology, Hisar

POLITICAL SCIENCE

B.A. IIIrd Year 5thSemester

PAPER-A (THEORY) POLS 301 : Comparative Politics (Optional-I)

(w.e.f. the academic session 2020-21)

Note:-

Maximum Marks : 100
External Marks : 80
Internal Assessment : 20
Time : 3 hours

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Unit-I Comparative Politics-Definition, Scope; Traditional & Modern Concerns; Comparative Methods.

Unit-II Approaches to the Study of Comparative Politics: Input-Out (David Easton), Structural-Function (G. Almond), Political Development (Lucian W. Pye), Political Culture (G. Almond).

Unit-III Constitutionalism: History, Nature, Type and Problem in Modern Times.

Unit-IV Constitutional Structure: (a) Formal-Executive, Legislation and Judiciary, (b) Informal Structures– Political Parties and Pressure Groups.

Guru Jambheshwar University of Science & Technology, Hisar

POLITICAL SCIENCE

B.A. IIIrd Year 6thSemester

PAPER-A (THEORY) **POLS 303 : Comparative Constitutions of UK & USA (Optional-I)**

(w.e.f. the academic session 2020-21)

Maximum Marks : 100
External Marks : 80
Internal Assessment : 20
Time : 3 hours

Note:-

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Unit-I

Evolution, Conventions, Legacies and Basic features of Constitutions of UK & USA; Socio-Economic basis of Constitutions of UK & USA.

Unit-II

Comparative Study of Executive, Legislation and Judiciary System of UK & USA.

Unit-III

Comparative studies of Structures, Functions and roles of political parties and pressure groups of UK & USA.

Unit-IV

Electoral Processes, Voting Behaviour, Bureaucracy and Recent Trends of the working of the systems of UK & USA.

B.A. Part - I (Economics)
Semester-I
BECO-101: Principles of Microeconomics-I

External Maximum Marks: 80
Internal Maximum Marks: 20
Time: 3Hrs

Course Description

This course intends to expose the student to the basic principles in Microeconomic Theory. In this paper, student is expected to understand the behaviour of an economic agent, namely, a consumer and a producer.

Instructions for the paper-setters and the candidates:

1. The question paper will consist of *nine* questions. The candidate shall attempt *five* questions in all. The Question No. 1 will be *compulsory*. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The Compulsory Question No.1 will be short answer type questions containing *ten* questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Course Outline

Unit-I

Economics: Definition, Nature, Scope. Problem of scarcity and choice: scarcity, choice and opportunity cost; production possibility frontier; economic systems. Demand and supply: law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of supply, determinants of supply, shifts of supply versus movements along a supply curve, market supply, and market equilibrium. Applications of demand and supply: price rationing, price floors, consumer surplus, producer surplus. Elasticity: types, methods and determinants of price elasticity

Unit-II

Consumer behaviour: concept of utility, diminishing marginal utility, Diamond-water paradox, income and substitution effects; Consumer choice: indifference curves, derivation of demand curve from indifference curve and budget constraint.

Unit-III

Production: behaviour of profit maximizing firms, production process, production functions, law of variable proportions, choice of technology, isoquant and isocost lines, cost minimizing equilibrium condition. Supply curve & elasticity of supply.

Unit-IV

Cost Analysis: costs in the short run and in the long run (traditional and modern approach), accounting and economic costs, actual costs and opportunity Costs; Revenue: total, average and marginal revenue. Break even analysis and its uses.

B.A. Part - I (Economics)
Semester-II
BECO-201: Principles of Microeconomics-II

External Marks:80
Internal Marks :20
Time: 3Hrs.

Course Description

This is a sequel to Principles of Microeconomics-I covered in the first semester. The objective of the course is the same as in Principles of Microeconomics- I.

Course Outline

Unit-I

Market Structures- Concepts and types; Perfect Competition: assumptions, theory of a firm under perfect competition, demand and revenue; equilibrium of the firm in the short run and long run; long run industry supply curve: increasing, decreasing and constant cost industries. Welfare: allocative efficiency under perfect competition.

Unit-II

Theory of a monopoly firm: concept of imperfect competition; short run and long run price and output decisions of a monopoly firm; concept of a supply curve under monopoly; comparison of perfect competition and monopoly, social cost of monopoly, price discrimination; remedies for monopoly: Antitrust laws, natural monopoly.

Unit-III

Imperfect Competition- Monopolistic competition: assumptions, short run and long run price and output determinations, economic efficiency and resource allocation; oligopoly: assumptions, oligopoly models, game theory, contestable markets, role of government.

Unit-IV

Income Distribution and Factor pricing: Marginal productivity theory of distribution, Ricardian theory of rent; Theories of interest: Classical and Neoclassical; Marginal productivity theory of Wages;

B.A. Part - II (Economics)

Semester-III

BECO-301: Principles of Macroeconomics-I

External Maximum Marks: 80
Internal Maximum Marks: 20
Time: 3Hrs

Course Description

This course introduces students to the basic concepts in Macroeconomics. Macroeconomics deals with the aggregate economy. In this course the students are introduced to the definition, measurement of the macroeconomic variables like GDP, consumption, savings, investment and balance of payments. The course also discusses various theories of determining GDP in the short run.

Instructions for the paper-setters and the candidates:

1. The question paper will consist of *nine* questions. The candidate shall attempt *five* questions in all. The Question No. 1 will be *compulsory*. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The Compulsory Question No.1 will be short answer type questions containing *ten* questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Course Outline

Unit-I

Introduction: nature, meaning and scope of macro-economics. The Concepts and measurement of national income statistics and Circular flow of income in two, three and four sector economy.

Unit-II

Consumption function: average and marginal propensity to consume, Keynesian psychological law of consumption.

Investment function: types of investment, investment demand schedule and factors affecting investment decisions, marginal efficiency of capital, static and dynamic multiplier & accelerator.

Unit-III

Determination of income and employment: classical and Keynesian theories of income; output and employment, Say's law of markets. Principle of effective demand.

Unit-IV

Money and banking: money: definition, functions and role quantity theory of money: fisher's equation and Cambridge equation, Keynesian liquidity preference theory. Banking: major functions of commercial banks and process of credit creation.

B.A. Part - II (Economics)

Semester-IV

BECO-401: Principles of Macroeconomics-II

External Maximum Marks: 80
Internal Maximum Marks: 20
Time: 3Hrs

Course Description

This is a sequel to Principles of Macroeconomics-I. It analyses various theories of determination of National Income in greater detail. It also introduces students to concept of inflation, its relationship with unemployment and some basic concepts in an open economy.

Instructions for the paper-setters and the candidates:

1. The question paper will consist of *nine* questions. The candidate shall attempt *five* questions in all. The Question No. 1 will be *compulsory*. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing *ten* questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Course Outline

Unit-I

IS-LM analysis: derivations of the IS and LM functions; IS-LM and aggregate demand; shifts in the IS-LM curve.

Unit-II

Inflation types and theories: cost-push and demand-pull, measures to control inflation. Relationship between inflation and unemployment: Phillips curve in short run and long run.

Unit-III

Trade cycle: meaning, phases and theories of trade cycles- Samuelson and Hicks; monetary and fiscal policies for stabilization.

Unit-IV

Balance of payments and exchange rate: balance of payments: current account and capital account; market for foreign exchange; determination of exchange rate.

B.A. Part - III (Economics)

Semester-V

BECO-503: Economics of Development

External Maximum Marks: 80
Internal Maximum Marks: 20
Time: 3Hrs

Course Description

Course structure enables the students to know about theories of growth and development, sectoral aspects of development and investment criteria. Issues relating to poverty and HDI also find their due place.

Instructions for the paper-setters and the candidates:

1. The question paper will consist of *nine* questions. The candidate shall attempt *five* questions in all. The Question No. 1 will be *compulsory*. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The Compulsory Question No.1 will be short answer type questions containing *ten* questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Course Outline

Unit - I

Economic growth and economic development, development and underdevelopment, approaches to economic development, factors affecting economic growth.

Unit -II

Poverty — absolute and relative; measuring poverty – head count and poverty gap, vicious circle of poverty. Human development index (HDI) and other indices of development and quality of life. Population problem and growth pattern of population in developing countries.

Unit -III

Traditional measures of economic development – national income, per capital income, UNDP indices for measurement of development. Classical theory of development- Adam Smith and Marx

Unit- IV

Steady state growth models — Harrod-Domar, neo classical model of growth- Robert Solow, Cambridge model of growth – Joan Robinson

B.A. Part - III (Economics)

Semester-VI

BECO-601: Economic Development and Policy in India

External Maximum Marks: 80
Internal Maximum Marks: 20
Time: 3Hrs

Course Description

Using appropriate analytical frameworks, this course reviews major trends in economic indicators and policy debates in India in the post-Independence period, with particular emphasis on paradigm shifts and turning points.

Instructions for the paper-setters and the candidates:

1. The question paper will consist of *nine* questions. The candidate shall attempt *five* questions in all. The Question No. 1 will be *compulsory*. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit. The paper will carry 100 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing *ten* questions of equal marks (i.e., 2 marks each) spread over the whole syllabus. Other questions will carry the 15 marks each.

Course Outline

Unit -I

Economic development since independence: major features of Indian economy at independence and characteristics of economic underdevelopment of India (with reference to colonial rule of India); trend in national income and per capita income; sectoral composition (output and employment) - primary, secondary and tertiary. Development under different policy regimes—goals, constraints, institutions and policy framework;

Unit -II

Population and human development: broad demographic features — population size and growth rates, sex and age composition, occupational distribution. Density of population, urbanization and economic growth in India. Population growth as a factor of economic development, national population policy, progress of human development in India. Development of education in India, health and family welfare and the development of health infrastructure.

Unit -III

Structural change of post independent Indian economy: growth, distribution and trends of national income, sectoral distribution. An assessment of performance—sustainability and regional contrasts; structural change, savings and investment. Trends, measurement and policies in poverty; inequality-measurement, causes and effects, unemployment-types, causes and employment policies in India.

Unit -IV

Indian economy in post reform period: background of Indian economic reforms – new economic policy; redefining India's development strategy; changing role of state and market industrial policy, disinvestment policy and privatization; financial sector reforms including banking reform.

Guru Jambheshwar University of Science & Technology, Hisar

B.A. 1 -1st Semester (Health & Physical Education)
(From Session 2018-19)

HPEL 101: Health & Physical Education

External – 50 Marks
Internal – 20 Marks
Time: – 3 hours

Note: For the end semester examinations, nine questions are to be set by the examiner. The candidates shall attempt five questions in all. First question will be compulsory of 10 marks based on the entire syllabus. It will comprise of ten short answer type questions of one mark each. Students are required to attempt any four questions out of remaining eight questions, selecting one question from each unit. All remaining questions shall carry equal marksi.e.10 marks each.

Unit –I: ***Introduction to Physical Education***

1. Meaning, Definition and Scope of Physical Education.
2. Relationship of Physical Education with General Education.
3. Aim, Objectives and Importance of Physical Education in Modern Society.
4. Misconceptions regarding Physical Education.

Unit –II: ***Introduction to Physical Education***

1. Meaning, Definition and Importance of Health.
2. Factors Influencing Health.
3. Meaning and Importance of Personal Hygiene.
4. Hygiene of various Body Parts and Factors Influencing Personal Hygiene.

Unit –III: ***Introduction to Yoga***

1. Yoga - Meaning, Concept & Historical Development.
2. Types of Yoga.
3. Importance of Yoga in Healthy Living.
4. Pranayam – Meaning, Types and their Benefits.

Unit –IV: ***Introduction to Human Anatomy and Physiology***

1 Meaning and Definition of Human Anatomy and Physiology
2 Importance of Human Anatomy and Physiology in Physical Education.
3 Definition of Cell, Tissue, Organ and System.
4 Structure and Properties of Cell.

Text Books and References

1. Singh Ajmer et.al. "Modern Text Book of Physical Education, Health and Sports", Kalyani , Ludhiana, (2010).
2. Sharma, V.K, "Health & Physical Education" Saraswati House Pvt. Ltd . Publishers Daryagani,New Delhi. (2013).

Guru Jambheshwar University of Science & Technology, Hisar

B.A. 1 -1st Semester (Practical)
(Health & Physical Education)
(From Session 2018-19)

HPEL(P) 102: Practical (Health & Physical Education)

Maximum Marks: 30
Time: 3 hours

1. ***Assans : Any three out of following six asanas :*** ***10 Marks***

   1. Padmasana 2. Vajrasana 3. Tadasana
   4. Padahastasana 5. Sarvangasana 6. Bhujangasana

2. ***Ground Specifications, General Rules & General Skills of following games :*** ***15 Marks***

   1. Kho-Kho 2. Badminton 3. Kabaddi
   2. Athletic Track - Marking

3. ***Viva – Voce and Practical File*** ***05 Marks***

Guru Jambheshwar University of Science & Technology, Hisar

B.A. I -2nd Semester (Health & Physical Education)
(From Session 2018-19)

HPEL 103: Health & Physical Education

External – 50 Marks
Internal – 20 Marks
Time: -- 3 hours

Note: For the end semester examinations, nine questions are to be set by the examiner. The candidates shall attempt five questions in all. First question will be compulsory of 10 marks based on the entire syllabus. It will comprise of ten short answer type questions of one mark each. Students are required to attempt any four questions out of remaining eight questions, selecting one question from each unit. All remaining questions shall carry equal marksi.e.10 marks each.

Unit –I: ***Introduction to Health Education***

1. Definition, Aim, Objectives and Scope of Health Education.
2. Importance of Health Education in Modern Society.
3. First Aid: Meaning, Aim, Objectives and General Principles of First Aid.
4. First Aid for Common injuries – Bleeding, Burns, Electric Shock, Drowning and Snake Bite.

Unit –II: ***Historical Prospects of Physical Education***

1. Pre-independence and Post – Independence Historical Development of Physical Education in India..
2. Role of IOA, SAI, NSNIS and YMCA in the Development of Physical Education and Sports in India.
3. Sports Policy of Haryana State.
4. National Sports Policy

Unit –III: ***Introduction to Physical Fitness***

1. Meaning, Definition and Importance Physical Fitness..
2. Components and Principles of Physical Fitness.
3. Factors Influencing of Physical Fitness.
4. Meaning of Isometric, Isotonic and Isokinetic Exercises.

Unit –IV: ***Introduction to Human Anatomy and Physiology***

1. Anatomy of Human Bone
2. Types and Function of Bones in Human Body
3. Meaning and Types of Joints in Human Body
4. Types of Synovial Joints in Human Body.

Guru Jambheshwar University of Science & Technology, Hisar

B.A.1 -2nd Semester (Practical)
(Health & Physical Education)
(From Session 2018-19)

HPEL(P) 104: Practical (Health & Physical Education)

Maximum Marks: 30
Time: 3 hours

1. ***Name and Identification of Bones in Human Body :*** ***05 Marks***

2. ***Athletics :*** ***20 Marks***

   Measurements & Basic Techniques of all Throwing Events and
   Basic Technique of all types of starts, with marking of Athletic Track.

3. ***Viva – Voce and Practical File*** ***05 Marks***

Guru Jambheshwar University of Science & Technology, Hisar

HEALTH & PHYSICAL EDUCATION

B.A. IInd Year 3rd Semester

PAPER-A (THEORY) HPEL 201 :Health & Physical Education

(w.e.f. the academic session 2019-20)

Maximum Marks : 70
External Marks : 50
Internal Marks: 20
Time : 3 hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shallattempt *four* more questions selecting at least *one* from each Unit. The paper willcarry 70 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 1 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Unit-I : Concept of Safety Education

(i) Meaning, need and importance of Safety Education.
(ii) Sports Injuries : Types and Causes.
(iii) Principles of prevention of Sports Injuries.
(iv) General treatment for common Sports Injuries i.e. Abrasion, Contusion, Sprain, Strain, Fracture and Dislocation of Joints.

Unit-II : Common Diseases

(i) Meaning of Communicable and Non-Communicable Diseases.
(ii) Modes of transmission, prevention and control of communicable diseases.
(iii) Common Diseases : HIV/ADS, Hepatitis, Dengue, Typhoid, Malaria and Influenza..
(iv) Allergy related diseases : Asthma and Sinuses

Unit-III : Concept of Balanced Diet

(i) Balanced Diet : Meaning and Importance.
(ii) Components of balanced diet and their sources.
(iii) Factors affecting balanced diet.
(iv) Harmful effects of Junk Food.

Unit-IV : Anatomy and Physiology of Body System

(i) Circulatory System : Structure of Heart.
(ii) Functioning of Heart.
(iii) Types of Circulation : Systematic and Pulmonary.
(iv) Effects of exercise on Circulatory System .

Guru Jambheshwar University of Science & Technology, Hisar

HEALTH & PHYSICAL EDUCATION

B.A. II[nd] Year 3[rd] Semester

PAPER-B (PRACTICAL) **HPEL(P) 202**

(w.e.f. the academic session 2019-20)

Maximum Marks : 30
Time : 3 hours

1. **Ground specifications, general rules and general skills of following games :** **10 Marks**

   (i) Basketball (ii) Football (iii) Handball

2. **Athletics :** **10 Marks**

   Measurements & Basic Techniques of all Jumping and Throwing Events and basic of Track Marking.

3. **Viva-Voce and Practical File** **10 Marks**

Guru Jambheshwar University of Science & Technology, Hisar

HEALTH & PHYSICAL EDUCATION

B.A. IInd Year 4thSemester

PAPER-A (THEORY) HPEL 203 :Health & Physical Education

(w.e.f. the academic session 2019-20)

Maximum Marks : 70
External Marks : 50
Internal Marks: 20
Time : 3 hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shallattempt *four* more questions selecting at least *one* from each Unit. The paper willcarry 70 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 1 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Unit-I : Warming up and Cooling Down

(i) Meaning, types and significance of warming up.

(ii) Meaning, types and significance of Cooling Down.

(iii) Methods of warming up and cooling down.

(iv) Physiological aspects of warming up and cooling down.

Unit-II : Psychological Aspects of Physical Education

(i) Meaning of Psychology and Sports Psychology.

(ii) Need and Importance of Sports Psychology.

(iii) Learning : Meaning and Laws.

(iv) Learning Curve

Unit-III : Major Sports Events

(i) Ancient Olympic Games.

(ii) Modern Olympic Games.

(iii) Asian Games.

(iv) Common Wealth Games.

(v) Pre and Post Independence Indian Sports and Physical Education History.

Unit-IV : Anatomy and Physiology of IIuman Body System

(i) Structure of Respiratory Organs.

(ii) Physiology of Respiratory System.

(iii) Effect of exercise on Respiratory System.

(iv) Terminology of Respiration : Tidal Volume, Residual Volume and Total Lung Capacity/Vital Capacity.

Guru Jambheshwar University of Science & Technology, Hisar

HEALTH & PHYSICAL EDUCATION

B.A. IInd Year 4thSemester

PAPER-B (PRACTICAL) **HPEL(P) 204**

(w.e.f. the academic session 2019-20)

Maximum Marks : 30
Time : 3 hours

1. **Ground specifications, general rules and general skills of following games :** **10 Marks**

   (ii) Wrestling (ii) Judo (iii) Boxing

2. **Athletics :** **10 Marks**
   Measurements and marking of all Athletic Track and Field Events.

3. **Viva-Voce and Practical File** **10 Marks**

Guru Jambheshwar University of Science & Technology, Hisar

HEALTH & PHYSICAL EDUCATION

B.A. IIIrd Year 5th Semester

PAPER-A (THEORY) **HPEL 301 : Health & Physical Education**

(w.e.f. the academic session 2020-21)

Maximum Marks : 70
External Marks : 50
Internal Marks: 20
Time : 3 hours

Note:

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper willcarry 70 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 1 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Unit –I : Growth & Development

1. Meaning and definitions of Growth and Development.
2. Stages of Growth and Development.
3. Principles and Factors Influencing Growth and Development.
4. Age and sex difference in relation to physical activities and sports.

Unit –II : Concept of Sports Organization and Administration

1. Meaning and importance of organization and administration in Physical Education and Sports.
2. Principles of Sports organization and administration..
3. Organization and administration of Intramural and Extramural Activities.
4. Tournaments and their types (League and Knock out).

Unit –III : Concept of Posture

1. Meaning of posture and importance of good posture.
2. Causes of poor posture. .
3. Symptom and causes of Postural Deformities : Lordosis, Kyphosis, Scoliosis, Flat Feet, Knock Knee and Blow Legs.
4. Precaution and Remedies for postural deformities.

Unit –IV : Anatomy and Physiology

1. Gross Anatomy of Muscle, Types of Muscles in human body.
2. Effects of exercise on Muscular System.
3. Composition of Human Blood.
4. Functions of Blood.

Guru Jambheshwar University of Science & Technology, Hisar HEALTH & PHYSICAL EDUCATION

B.A. IIIrd Year 5th Semester

PAPER-B (PRACTICAL) **HPEL(P) 302**

(w.e.f. the academic session 2020-21)

Maximum Marks : 30
Time : 3 hours

1. Ground specifications, general rules and general skills of following games : **10 Marks**

   (i) Wrestling (ii) Judo (iii) Boxing

2. Athletics : **10 Marks**

   Measurements and marking of all Throwing & Jumping sectors.

3. Viva-Voce and Practical File **10 Marks**

Guru Jambheshwar University of Science & Technology, Hisar

HEALTH & PHYSICAL EDUCATION

B.A. IIIrd Year 6thSemester

PAPER-A (THEORY) **HPEL 303 :Health & Physical Education**

(w.e.f. the academic session 2020-21)

Maximum Marks : 70
External Marks : 50
Internal Marks: 20
Time : 3 hours

Note:

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 70 marks out of which 20 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **ten** questions of equal marks (i.e., 1 marks each) spread over the whole syllabus. Other questions will carry the 10 marks each.

Unit –I : **Concept of Motivation and Socialization**

1. Meaning and definition of motivation.
2. Types of motivation and importance of motivation in Sports.
3. Meaning of Socialization and Socialization through Sports.
4. Effect of social behavior on performance of Sports Person.

Unit –II : **Concept of Sports Training and Doping**

1. Meaning and definition of sports training.
2. Factors affecting sports training.
3. Types of sports training : Circuit training, Interval Training and Continuous Training.
4. Doping : Meaning, types and its effects on health.

Unit –III : **Concept of Sports Biomechanics**

1. Meaning and definition of sports biomechanics.
2. Importance of Biomechanics in Sports .
3. Newton's Laws of motion and their application in sports.
4. Levers : Meaning, types and their application in sports.

Unit –IV : **Anatomy and Physiology**

1. Organs of Digestive System
2. Structure of Digestive System
3. Mechanism of food digestion
4. Effects of exercise on Digestive System.

Guru Jambheshwar University of Science & Technology, Hisar

HEALTH & PHYSICAL EDUCATION

B.A. IIIrd Year 6thSemester

PAPER-B (PRACTICAL) **HPEL(P) 304**

(w.e.f. the academic session 2020-21)

Maximum Marks : 30
Time : 3 hours

1. Ground specifications, general rules and general skills of following games : **10 Marks**

   (ii) Cricket (ii) Hockey (iii) Handball

2. Athletics : **10 Marks**

   Measurements & Basic Techniques of all Jumping Events and basic of Track Marking.

3. Viva-Voce and Practical File **10 Marks**

Guru Jambheshwar University of Science & Technology, Hisar

Computer Science

B.A. (Pass Course) 1st Year 1st& 2nd Semester

Scheme Of Examination

(w.e.f.the academic session 2018-19)

Sem-I

Paper No.	Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
Paper A theory	BACS - 111	Fundamentals Of Computers	3	25	10	--	35	3 hrs
Paper B Theory	BACS - 112	Programming In C	3	25	10	--	35	3 hrs
Paper C Practical	BACS - 113	MS- Office and Programming In C	6	--	--	30	30	3 hrs

Sem-II

Paper No.	Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
Paper A theory	BACS-121	Data Structure Using C	3	25	10	--	35	3 hrs
Paper B Theory	BACS-122	Computer Organization	3	25	10	--	35	3 hrs
Paper C Practical	BACS-123	Data Structure Using C	6	--	--	30	30	3 hrs

Guru Jambheshwar University of Science & Technology, Hisar

Computer Science

B.A. (Pass Course)2nd Year 3rd&4th Semester

Scheme Of Examination

(w.e.f.the academic session 2019-20)

Sem-III

Paper No.	Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
Paper A theory	BACS-201	Database Management System	3	25	10	--	35	3 hrs
Paper B Theory	BACS-202	Operating System	3	25	10	--	35	3 hrs
Paper C Practical	BACS-203	Computer Lab-III	6	--	--	30	30	3 hrs

Sem-IV

Paper No.	Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
Paper A theory	BACS-204	Software Engineering	3	25	10	--	35	3 hrs
Paper B Theory	BACS-205	Computer Network	3	25	10	--	35	3 hrs
Paper C Practical	BACS-205	Computer Lab-IV	6	--	--	30	30	3 hrs

Guru Jambheshwar University of Science & Technology, Hisar

Computer Science

B.A. (Pass Course) 3rd Year 5th & 6th Semester

Scheme Of Examination

(w.e.f.the academic session 2020-21)

Sem-V

Paper No.	Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
Paper A theory	BACS-311	Object Oriented Programming Using C++	3	25	10	--	35	3 hrs
Paper B Theory	BACS-312	Data Analytics	3	25	10	--	35	3 hrs
Paper C Practical	BACS-313	Computer Lab-V	6	--	--	30	30	3 hrs

Sem-VI

Paper No.	Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
Paper A theory	BACS-321	Computer Graphics	3	25	10	--	35	3 hrs
Paper B Theory	BACS-322	Python Programming	3	25	10	--	35	3 hrs
Paper C Practical	BACS-323	Computer Lab-VI	6	--	--	30	30	3 hrs

Guru Jambheshwar University of Science & Technology, Hisar

Scheme for Theory + Practical Based Subjects

Guidelines for Scheme of examination of UG Course Computer Science-B.A. Pass course (under semester system)

The Scheme of Examination of undergraduate (UG) Courses (**Theory-70 marks (Two Papers) + Practical-30 marks Based Subjects)** under Faculty of Humanities & Social Sciences run by affiliated degree colleges will be under (50+20) + 30 (External + Internal + Practical) for practical based courses. Pass percentage will be …

For the UG courses under Faculty of Humanities & Social Sciences, the guidelines regarding scheme and paper setting will be followed as:

For the end semester examinations regarding practical subjects, nine questions are to be set by the examiner. The candidates shall attempt five questions in all. First question will be compulsory of 05 marks based on the entire syllabus. It will comprise of five short answer type questions of one mark each. Students are required to attempt any four questions out of remaining eight questions (these eight questions may be (in) up to four units depending on the subject). All remaining questions shall carry equal marks.
Scheme: [25 Paper-I+25 Paper-II+(10+10)] + 30 [External + (Internal) + Practical]
1^{st} question=05 marks (05 short answer type questions of 1 mark each)
Rest four questions: 05 marks each i.e. 4 x 05=20
Total = (25+10+25+10) + 30 = 100 marks

Components of Internal Assessment (Breakdown of 10 marks in each Paper)	
(a)	Class Test: 2.5 marks
(b)	Assignment: 2.5 marks
(c)	Participation in Class Discussions: 1.5 marks
(d)	Term Paper/written test/2^{nd} assignment: 2.5 marks
(e)	Attendance: 2 marks* (Paper-I+Paper-II+Practicals)

*Weightage of 2 marks for **Attendance** component out of 20 marks for Internal Assessment shall be available only to those students who attend **75% and more** of classroom lectures and practical. The break-up of marks for **attendance component** for theory + practical papers shall be as under:

(a) 75% and above up to 85%: 01 mark

(b) Above 85%: 02 marks

B.A.-I Computer Science (Pass Course) 1st Semester

BACS – 111: Fundamentals of Computer

Maximum Marks: 35

External Assessment: 25

Internal Assessment: 10

Time: 3 Hours

Note:

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 35 marks out of which 10 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **five** questions of equal marks (i.e., 1 mark each) spread over the whole syllabus. Other questions will carry the 05 marks each.

UNIT I

Computer Fundamentals:

Introduction to Computers: Characteristics and Limitations of Computers, Evolution of Computers, Classification of Computers. Computer Languages. Computer Programs, Structured Programming Concepts

Basic Computer Organization:

Units of a computer, CPU, ALU, Memory Hierarchy, Registers, I/O devices. Mother Board,

UNIT II

Word Processing:

Introduction to MS-Word, Creating & Editing: Formatting Document, Page, Table; Bookmark, Mail Merge, Macros.

Spread Sheets:

Introduction to MS-Excel, Creating & Editing Worksheet, Formatting data, Formulas and Functions, Creating Charts, Pivot Tables.

Power Point Presentations:

Creating, Manipulating & Enhancing Slides, Organizational Charts, Animations & Sounds, Inserting Animated Pictures.

UNIT III

Operating Systems:

Introduction to Operating System: Functions of Operating System, Services; Properties: Batch Processing, Multitasking, Multiprogramming, Interactivity, Distributed environment, Spooling;

Types of Operating System:

Single user and Multiuser, Batch OS, Multiprogramming OS, Multitasking OS, Real-Time OS, Time-Sharing OS, Distributed OS, Network OS.

UNIT IV

Internet Basics:

History of Internet, Web Browsers, Web Servers, Hypertext Transfer Protocol, Internet Protocols Addressing, Internet Connection Types, How Internet Works, ISPs, Search Engines, Emails and Its Working, Internet Security, Uses of Internet, Computer Networks and their advantages, Types of Computer Network, Network Topologies, Basics of Transmission Media. Cloud Computing Basics: Overview, Applications, Intranets and the Cloud. Benefits, Limitations and Security Concerns.

Text/ Reference Books

1. Satish Jain, Kratika, M. Geetha, "MS Office", BPB Publications, 2010.
2. ITL Education Solutio, "Introduction to Computer Science", Pearson Education, 2nd Edition 2012.
3. P. K. Sinha, "Computer Fundamentals", 6th edition, 2003.
4. Tony Feldman,"Introduction to Digital Media", Routledge; 1 edition, 1996.
5. Bartee, Thomas C, "Digital Computer Fundamentals", McGraw-Hill Inc., 6th Edition, 1984.

B.A.-I Computer Science (Pass Course) 1st Semester

BACS – 112: Programming in 'C'

Maximum Marks: 35

External Assessment: 25

Internal Assessment: 10

Time: 3 Hours

Note:

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 35 marks out of which 10 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **five** questions of equal marks (i.e., 1 mark each) spread over the whole syllabus. Other questions will carry the 05 marks each.

UNIT – 1

Introduction to C Programming:

History of C, Character Set, Identifiers and Keywords, Constants, Types of C Constants, Rules for Constructing Integer, Real and character Constants, Variables, Data Types, rules for constructing variables. Input/output: Unformatted & formatted I/O function, Input functions: scanf(), getch(), getche(), getchar(), gets(); output functions: printf(), putch(), putchar(), puts().

Operators and Expressions:

Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators, Type Conversion in Assignments, Hierarchy of Operations, Structure of a C program.

UNIT – 2

Decision Control Structure:

Decision making Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder.

Loop Control Structure:

While and do-while, for loop and Nested for loop,

Case Control Structure:

Decision using switch; goto, break and continue statements.

Functions:

Library functions and user defined functions, Global and Local variables, Function Declaration, Calling and definition of function, Methods of parameter passing to functions, recursion, Storage Classes in C.

UNIT – 3

Arrays:

Introduction, Array declaration, Accessing values in an array, Initializing values in an array, Single and Two Dimensional Arrays, Initializing a 2-Dimensional Array, Passing array elements to a function: Call by value and call by reference, Arrays of characters, Insertion and deletion operations, Searching the elements in an array, Using matrices in arrays, Passing an Entire Array to a Function.

Pointers:

Pointer declaration, Address operator "&", Indirection operator "*", Pointer and arrays, Pointers and 2-Dimensional Arrays, Pointer to an Array, Passing 2-D array to a Function, Array of Pointers.

Dynamic Memory Allocation:

malloc(), calloc(), realloc(), free() functions.

UNIT – 4

String Manipulation in C:

Declaring and Initializing string variables, Reading and writing strings, String Handling functions (strlen(), strcpy(), strcmp(), strcat(), strrev()).

Structures and Unions:

Declaration of structures, Structure Initialization, Accessing structure members, Arrays of structure, Nested structures, Structure with pointers, Union.

Files in C:

Introduction, Opening and Closing files, Basic I/O operation on files.

Text/ Reference Books:

1. Yashvant Kanetkar, "Let Us C", 15th Edition, BPB Publications, 2016.
2. Salaria, R.S. : Test Your Skills in C, Salaria Publications, New Delhi.
3. E. Balaguruswami : Programming with C Language, Tata McGraw Hill, New Delhi.
4. Byron S. Gottfried : Programming in C, McGraw Hills Publishers, New York.
5. M.T. Somashekara : Programming in C, Prentice Hall of India.

B.A.-I Computer Science (Pass Course) 1st Semester

BACS – 113: Computer Lab-I (4 Hours per week)

Based on Fundamentals of Computer and Programming in 'C'

Maximum Marks: 30

Time: 3 Hours

List of Experiments:

Section- A (Fundamentals of Computer)

1. Create an admission form in MS-Word. You need to use Text-Boxes, Shapes, Colors, formatting options, table and horizontal lines.
2. Send a birthday invitation to your 100 friends using Mail-Merge.
3. Study and use various functions like Sum, Average, Maximum, and Minimum in MS-Excel.
4. Fill 50 students' records in MS-Excel sheet1. The fields must be Roll No., Name, Father Name, Course Joined, Marks obtained in three subjects. Create a marks-sheet in sheet2.
5. Create 10 slides in MS-PowerPoint related to internet advantages and disadvantages in daily life. Add animations to these all slides.

Section-B (Programming in 'C')

1. Program to convert a given decimal number into its binary equivalent using bitwise operators.
2. Program to accept a positive integer and find the sum of the digits in it.
3. Find The Roots of Quadratic Equation using if else statement.
4. Program to generate prime numbers.
5. Program to multiply two matrices.
6. Program to find GCD and LCM using non-recursive function.
7. Program to generate terms of Fibonacci series using recursive function.
8. Program to read a string and check whether it is a palindrome or not (using library functions).
9. Program to create a file called emp.txt and store information about a person, in terms of his name, age and salary.
10. Program to add two complex numbers using structure to store a complex number.

Note: In addition to the above experiments, the teacher may add more programs on the behalf of the theory syllabus.

B.A.-I Computer Science (Pass Course) IInd Semester

BACS – 121: Data Structure using 'C'

Maximum Marks: 35

External Assessment: 25

Internal Assessment: 10

Time: 3 Hours

Note:

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 35 marks out of which 10 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **five** questions of equal marks (i.e., 1 mark each) spread over the whole syllabus. Other questions will carry the 05 marks each.

UNIT – 1

Data Structure Basics:

Introduction to Complexity, Introduction to Data Structures, Classification of data structure, Abstract data type; Data Structure Operations, Applications of Data Structure.

Arrays:

Definition of array, Single and Multi-dimensional Arrays, Representation of single and 2-dimentional arrays and their address calculation, basic operations on single dimensional arrays, Algorithm for insertion and deletion operations; Sparse Matrices and its representation.

Stacks:

Definition of stack, Operations on stack, Algorithms for push and pop operations using array. Stack Applications: Prefix, Infix and Postfix expressions, Conversion of Infix expressions to Postfix expression using stack; Recursion.

UNIT – 2

Queues:

Introduction to Queue. Operations on Queues, Circular queue, Algorithm for insertion and deletion in simple queue and circular queue using array. De-queue, Priority Queues.

Linked Lists:

Introduction, Array vs Linked list; Singly, Doubly and Circular linked Lists and representation of linked lists in memory. Implementation of Stack and simple Queue as single Linked List.

UNIT -3

Trees:

Introduction to Tree as a data structure, Basic Terminology; Binary Trees, Traversal of binary trees: In-order, Pre-order & post-order. Binary tree non recursive traversal algorithms. Binary Search Tree, (Creation, and Traversals of Binary Search Trees)

Graphs:

Introduction, Memory Representation, Graph Traversal (DFS and BFS)

UNIT - 4

Searching:

Binary and Linear Search

Sorting:

Bubble sort, Insertion sort, Selection sort, Merge Sort, Quick sort. Comparison of various Searching and Sorting algorithms.

Text/ Reference Books:

1. Ellis Horowitz & Sartaj Sahni, "Fundamentals of Data structures in C",2nd Edition, Silicon Press, 2007.
2. R. B. Patel, "Expert Data Structures with C", 3rd Edition, Khanna Book Publishing, 2014.
3. A. M. Tenenbaum, Langsam, "Data Structures using 'C'," Pearson Education, 2009.
4. Lipschuitz L. Seymour, 2001 : Data Structure, Schaum Outline Series, TMH, New Delhi.
5. Salaria, R. S. : Data Structures & Algorithm Using C, Khanna Book Publishing Co. (P.) Ltd., New Delhi.
6. Salaria, R. S., Test Your Skills in Data Structures, Khanna Book Publishing Co. (P.) Ltd., New Delhi.
7. Sofat Sanjeev, Data Structure with C and C++, Khanna Book Publishing Co. Patel, R.B., Expert Data Structure in C, Khanna Book Publishing Co.

B.A.-I Computer Science (Pass Course) I1nd Semester

BACS – 122: Computer Organization

Maximum Marks: 35

External Assessment: 25

Internal Assessment: 10

Time: 3 Hours

Note:

1. The question paper will consist of **nine** questions. The candidate shall attempt **five** questions in all. The Question No. 1 will be **compulsory**. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 35 marks out of which 10 marks will be earmarked for internal assessment.
2. The **Compulsory Question No.1** will be short answer type questions containing **five** questions of equal marks (i.e., 1 mark each) spread over the whole syllabus. Other questions will carry the 05 marks each.

UNIT – 1

Data Representation:

Number Systems: Decimal, Binary, Octal, Hexadecimal, Conversion from one number system to other; Binary arithmetic operations, Representation of Negative Numbers: 1's complement and 2's complement; fixed and floating point representation, character representation (BCD, EBCDIC and ASCII Code), BCD number system; Weighted Codes, Self Complementing Code, Excess-3 code, Gray and Cyclic code.

UNIT – 2

Boolean Algebra:

Introduction**,** Definition, Postulates of Boolean Algebra, Fundamental Theorems of Boolean Algebra; Duality Principle, Demorgan's Theorems, Boolean Expressions and Truth Tables, Standard SOP and POS forms, Canaonical representation of Boolean expressions, Simplification of Boolean Expressions using theorems of Boolean algebra, Minimization Techniques for Boolean Expressions using Karnaugh Map.

Logic Gates:

AND, OR, NOT, NOR, NAND & XOR Gates and their Truth tables.

UNIT – 3

Combinational Circuits:

Half Adder & Full Adder, Half Subtractor & Full Subtractor, Adder & Subtractor, decoders, multiplexors. Realization of Boolean expressions using decoders and multiplexor.

Sequential Circuits:

Flip-Flops, Types- RS, T, D, JK and Master-Salve JK flip flop, Triggering of Flip Flops; Flip Flop conversions, Shift Registers, Synchronous and Asynchronous Counters.

UNIT – 4

Basic Computer Organization and Design:

Register Organization, Bus system, instruction set, timing and control, instruction cycle, memory reference, input-output and interrupt.

Programming the Basic Computer:

Instruction formats, addressing modes, instruction codes.

Input-output Organization:

Peripheral devices, I/O interface, Modes of data transfer, Direct Memory Access.

Text/ Reference Books:

1. William H.Gothman, "Digital Electronics-An Introduction to Theory and Practice" 2nd Edition, Prentice Hall of India Pvt. Ltd., 2009.
2. Mano, M. Morris,"Digital Logic and Computer Design", Prentice Hall of India Pvt.Ltd., 2000.
3. W.Stallings,"Computer Organization & Architecture", Pearson Education, 7th Edition, New Delhi, 2006.
4. N. Carter,"Computer Architecture", Schaums Outline Series, Tata McGraw Hill, New Delhi, 2006.

B.A.-I Computer Science (Pass Course) I1nd Semester

BACS – 123: Computer Lab-II (4 Hours per week)

Based on Data Structure using 'C'

Maximum Marks: 30

Time: 3 Hours

List of Experiments:

1. Program to convert a given infix expression to postfix.
2. Program to insert/delete an element in/from an array at a given location.
3. Program to implement Stack using structure
4. Program to implement Single Queue using structure
5. Program to insert, delete and display the linked list (Beginning, End and given position)
6. Program to generate BST and traverse recursively (infix).
7. Program to generate BST and traverse recursively (prefix).
8. Program to generate BST and traverse recursively (postfix).
9. Program for Binary Search.
10. Program for sorting an array using any sorting technique

Note: In addition to the above experiments, the teacher may add more programs on the behalf of the theory syllabus.

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SchemeforTheory+PracticalBasedSubjects

Guidelines for Scheme of examination of UG Course

Computer Science-B.A.Pass course (under semester system)

The Scheme of Examination of undergraduate(UG) Courses (**Theory-70marks (Two Papers)+Practical-30marksBasedSubjects)** under Faculty of Humanities &Social Sciences run by affiliated degree colleges will be under (50+20)+30 (External+Internal+Practical) for practical based courses. Pass percentage will be…

For the UG courses under Faculty of Humanities &Social Sciences, the guidelines regarding scheme and paper setting will be followed as:

For the end semester examinations regarding practical subjects, nine questions are to be setby the examiner. The candidates shall attempt five questions in all. First question will be compulsory of 05 marks based on the entire syllabus. It will comprise of five short answer type questions of one mark each. Students are required to attempt any four questions out of remaining eight questions (these eight questions may be (in) up to four units depending on the subject). All remaining questions shall carry equal marks.	
Scheme:[25 Paper-I+25 Paper-II+(10+10)]+30[External+(Internal)+Practical]	
1st question=05marks (05short answer type questions of 1 mark each)	
Rest four questions : 05 marks each i.e.4x05=20	
Total=(25+10+25+10)+30=100 marks	
Components of Internal Assessment(Breakdownof10marks in each Paper)	
(a)	ClassTest:2.5marks
(b)	Assignment:2.5marks
(c)	ParticipationinClassDiscussions:1.5marks
(d)	Term Paper/ written test/2nd assignment:2.5marks
(e)	Attendance:2marks* (Paper-I+Paper-II+Practicals)

*Weightage of 2marks for **Attendance** component out of 20 marks for Internal Assessment shall be available only to those students who attend **75% and more** of class room lectures and practical. The break-up of marks for **attendance component** for theory+practical papers shall be as under:

(a) 75% and above upto 85% : 01mark

(b) Above 85% : 02 marks

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Computer Science

B.A. (Pass Course) IInd Year 3rd & 4th Semester

Scheme of Examination

(w.e.f. the academic session 2019-20)

3rdSemester

Paper No.	Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
Paper A Theory	BACS 201	Data Base Management System	3	25	10	--	35	3 hrs
Paper B Theory	BACS 202	Operating System	3	25	10	--	35	3 hrs
Paper C Practical	BACS (P) 203	Computer Lab-III	6	--	--	30	30	3 hrs

4th Semester

Paper No.	Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
Paper A Theory	BACS 204	Software Engineering	3	25	10	--	35	3 hrs
Paper B Theory	BACS 205	Computer Networks	3	25	10	--	35	3 hrs
Paper C Practical	BACS (P) 206	Computer Lab-IV	6	--	--	30	30	3 hrs

Guru Jambheshwar University of Science & Technology, Hisar

Computer Science

B.A. (Pass Course) IInd Year 3rd Semester

PAPER-A (THEORY) BACS 201 : DATA BASE MANAGEMENT SYSTEM

(w.e.f. the academic session 2019-20)

Maximum Marks: 35
External Marks :25

Internal Marks: 10

Time: 3 hours

Note:

1. The question paper will consist of *nine* questions. The candidate shall attempt *five*questions in all. The Question No. 1 will be compulsory. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 35 marks out of which 10 marks will be earmarked for internal assessment.
2. The Compulsory Question No.1 of 05 marks will be short answer type questions containing five questions of equal marks (i.e., 1 mark each) spread over the whole syllabus. Other question will carry the 05 marks each.

UNIT - I

Basic Concepts: A Historical perspective, File Systems vs. DBMS, Characteristics of the Data Base Approach, Abstraction and Data Integration, Database users, Advantages and Disadvantages of DBMS, DBMS architecture, Data Models, Schemas and Instances, Data Independence.

UNIT-II

Entity Relationship (ER) Model: Basic Concepts-Entity, Attributes, Types of Attributes, Entity set and Keys; Relationships-Relationship set, Degree of Relationship, Mapping Cardinalities. ER diagram representation-Representation of Entity, Attributes and Relationship. Binary Representation and Cardinality, Participation Constraints.

UNIT – III

Relational Model : Relational model concepts (Tables, Tuple, Relation instance, Relation schema, Relation key, Attribute domain), Constraints- Key constraints**,** Domain constraints**,** Referential integrity constraints;Relational algebra, Basic operations: Select,Project,Union,Set differennce,Cartesian product,Rename.

UNIT - IV

Relational Database design: Mapping ER model to relational database, functional dependencies, Lossless decomposition, Desirable properties of decomposition, Normal forms (1 NF, 2 NF, 3 NF and BCNF).

SQL: Why SQL**,** Data Types; DDL-Create, Alter and Drop table Commands. DML-SELECT/ FROM/ WHERE, INSERT INTO/ VALUES, UPDATE /SET/ WHERE, DELETE Commands. UNION [ALL], INTERSECTION and MINUS Operators.

Suggested Readings:

1. Elmasri & Navathe: Fundamentals of Database systems, 3rd Edition, Addison Wesley, New Delhi.
2. Ivan Bayross : SQL, PL/SQL-The Program Language of ORACLE, BPB Publication, New Delhi.
3. Korth &Silberschatz : Database System Concept, 4th Edition, McGraw Hill International Edition.
4. C.J.Date : An Introduction to Data bases Systems 7th Edition, Addison Wesley, New Delhi.

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Computer Science

B.A. (Pass Course) IInd Year 3rd Semester

PAPER-B (THEORY) BACS 202 : OPERATING SYSTEM

(w.e.f. the academic session 2019-20)

Maximum Marks: 35
External Marks :25

Internal Marks: 10

Time: 3 hours

Note:

1. The question paper will consist of *nine* questions. The candidate shall attempt *five*questions in all. The Question No. 1 will be compulsory. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 35 marks out of which 10 marks will be earmarked for internal assessment.
2. The Compulsory Question No.1 of 05 marks will be short answer type questions containing five questions of equal marks (i.e., 1 mark each) spread over the whole syllabus. Other question will carry the 05 marks each.

UNIT - I

Structure of Operating Systems: Layers-MS-DOS Layer Structure, Traditional UNIX System Structure; Running Multiple Operating Systems, Running a Virtual Operating System, Operating System Modes, System Boot.

Process Management: Introduction to Process, Attributes of a process, Process States, Operations on the Process, Process Schedulers, CPU Scheduling, Scheduling Algorithms, Purpose of a Scheduling algorithms, Introduction to FCFS, Shortest Job First (SJF), Shortest Job First (SJF),Round Robin Scheduling Algorithms.

UNIT - II

Memory Management: Fixed and Dynamic partition, Physical and Logical Address Space, Page Table, Mapping from page table to main memory, Page Table Entry, Size of the page table, Finding Optimal Page Size. Virtual Memory Concepts, Advantages and disadvantage of Virtual Memory. Segmentation, Translation of Logical address into physical address by segment table, Advantages and disadvantage of Segmentation. Paging VS Segmentation.

UNIT - III

File Management: Attributes of File, Operations on File; File Access Methods-Sequential, Direct and Indexed Access; Directory Structure, File Systems, File System Structure- different layers; Master Boot Record, Directory Implementation-Linear List and Hash Table; Disk space Allocation Methods-Contiguous Allocation and FAT.

UNIT - IV

Shell introduction and Shell Scripting: What is shell and various type of shell, Various editors present in Linux/Unix; Different modes of operation in vi editor; Shell script, Writing and executing the shell script, Shell variable (user defined and system variables); System calls, Pipes and Filters, Decision making in Shell Scripts (If else, switch), Loops in shell, Utility programs (cut, paste, join, tr , uniq utilities), Pattern matching utility (grep)

Suggested Readings:

1. A. Silberschatz, P.B. Galvin, G. Gagne, Operating Systems Concepts, 9 Edition, John Wiley Publications 2015 India Edition.
2. A.S. Tanenbaum, Modern Operating Systems, 3rd Edition, Pearson Education 2007.
3. G. Nutt, Operating Systems: A Modern Perspective, 2nd Edition Pearson Education, 1997.
4. W. Stallings, Operating Systems, Internals & Design Principles , 5th Edition, Prentice.Hall of India. 2008.
5. M. Milenkovic, Operating Systems- Concepts and design, Tata McGraw Hill 1992.

Guru Jambheshwar University of Science & Technology, Hisar

Computer Science

B.A. (Pass Course) IInd Year 3rdSemester

PAPER-C (PRACTICAL) BACS(P) 203 :COMPUTER LAB-III

(w.e.f. the academic session 2019-20)

Maximum Marks: 30
Time: 3 hours

A. List of Experiments Using SQL:

1. Create a database and write the commands to carry out the following operation :
   a. Alter table
   b. Describe table
   c. Drop table
2. Create a database and write the programs to carry out the following operation :
   a. Add a record in the database
   b. Delete a record in the database
   c. Modify the record in the database
   d. Generate queries
   e. Generate the report
   f. List all the records of database in ascending order
3. Create a database and write the programs to carry out the following constraints:
   a. Key constraints
   b. Domain constraints
   c. Referential integrity constraints
4. Create a database and write the commands to carry out the following set operation on the database:
   a. Union
   b. Intersect
   c. Minus

B. List of Experiments Operating System Lab:

1. Study of Unix/Linux vi editor.
2. Shell Script To Display Logged in Users, Your UserName and Date / Time.
3. Shell script program to check whether given file is a directory or not.
4. Study of Unix/Linux Utility Programs (cut, paste, join, tr , uniq utilities, grep).
5. Program in C to report behaviour of Linux kernel including kernel version, CPU type and model. (CPU information)
6. Program in C to Copy a file using UNIX-system calls.
7. Program in C to implement FCFS Scheduling.

Guru Jambheshwar University of Science & Technology, Hisar

Computer Science

B.A. (Pass Course) IInd Year 4th Semester

PAPER-A (THEORY) BACS 204 : SOFTWARE ENGINEERING

(w.e.f. the academic session 2019-20)

Maximum Marks: 35
External Marks :25
Internal Marks: 10
Time: 3 hours

Note:

1. The question paper will consist of *nine* questions. The candidate shall attempt *five*questions in all. The Question No. 1 will be compulsory. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 35 marks out of which 10 marks will be earmarked for internal assessment.
2. The Compulsory Question No.1 of 05 marks will be short answer type questions containing five questions of equal marks (i.e., 1 mark each) spread over the whole syllabus. Other question will carry the 05 marks each.

UNIT – I

Introduction: Program vs. Software, Software Engineering paradigms, Software Crisis – problem and causes.

Phases in Software development: Requirement, Analysis, Software Design, Coding, Testing, Maintenance.

Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models.

UNIT – II

Software Requirement Analysis and Specifications: Feasibility Study Software Requirements, Need for SRS, Characteristics of an SRS, Components of an SRS, Structure of a requirements document, validation and metrics. Problem Analysis, Data Flow Diagram, Data Dictionary, Decision table, Decision trees

UNIT – III

Software Project Planning: Process Planning, Effort estimation, COCOMO model, Project scheduling and Staffing, team structure, Software configuration management, Quality assurance plans, Risk Management, Project monitoring plans.

Software Implementation and Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics.

Unit IV

Testing : Testing fundamentals, Error, Fault, and Failure, Test Oracle, Test Case and Test Criteria, Psychology of testing, Black Box Testing, Equivalence Class Partitioning, Boundary value analysis, Cause effect graphing, White box testing , Control flow based criteria, level of testing, Unit testing, Integration testing, System testing, Validation testing, alpha, beta, and Acceptance testing.

Suggested Readings:

1. Pressman R. S., "Software Engineering – A Practitioner's Approach", Tata McGraw Hill.
2. Jalote P., "An Integrated approach to Software Engineering", Narosa.
3. Sommerville, "Software Engineering", Pearson Education.
4. Fairley R., "Software Engineering Concepts", Tata McGraw Hill.

Guru Jambheshwar University of Science & Technology, Hisar

Computer Science

B.A. (Pass Course) IInd Year 4th Semester

PAPER-B (THEORY) BACS 205 :COMPUTER NETWORKS

(w.e.f. the academic session 2019-20)

Maximum Marks: 35
External Marks :25
Internal Marks: 10
Time: 3 hours

Note:

1. The question paper will consist of *nine* questions. The candidate shall attempt *five*questions in all. The Question No. 1 will be compulsory. The Candidate shall attempt four more questions selecting at least one from each Unit. The paper will carry 35 marks out of which 10 marks will be earmarked for internal assessment.
2. The Compulsory Question No.1 of 05 marks will be short answer type questions containing five questions of equal marks (i.e., 1 mark each) spread over the whole syllabus. Other question will carry the 05 marks each.

UNIT – I

Introduction to Computer Communications and Networking Technologies, Uses of Computer Networks, Network Devices, Nodes, and Hosts, Types of Computer Networks and their Topologies, OSI Reference Model, TCP/IP Reference Model.

UNIT – II

Analog and Digital Communications Concepts: Representing Data as Analog Signals, Representing Data as Digital Signals, Data Rate and Bandwidth, Capacity, Baud Rate; Digital Carrier Systems; Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing.

UNIT - III

Data Link Layer: Framing, Flow Control, Error Control, Error Detection and Correction, Sliding Window Protocols, Media Access Control, Random Access Protocols, Token Passing Protocols, Token Ring, Ethernet, gigabit Ethernet, token ring, FDDI, Bluetooth and Wi-Fi.

UNIT – IV

Network Layer and Routing Concepts: Virtual Circuits and Datagrams, Routing Algorithms, Flooding, Shortest Path Routing, Distance Vector Routing, Link State Routing, Hierarchical Routing, Congestion Control Algorithms, Internetworking, IPV4 and IPV6.

Suggested Readings:

1. Michael A. Gallo, William M. Hancock, “Computer Communications and Networking Technologies”, CENGAGE Learning.
2. Andrew S. Tanenbaum, “Computer Networks”, Pearson Education.
3. James F. Kurose, Keith W. Ross, “Computer Networking”, Pearson Education.
4. Behrouz A Forouzan, “Data Communications and Networking”, McGraw Hill.

Guru Jambheshwar University of Science & Technology, Hisar

Computer Science

B.A. (Pass Course) IInd Year 4th Semester

PAPER-C (PRACTICAL) BACS(P) 206 :COMPUTER LAB-IV

(w.e.f. the academic session 2019-20)

Maximum Marks: 30
Time: 3 hours

List of Experiments:

1. Study of different types of Network cables and Practically implement the cross-wired cable and straight through cable using clamping tool.
   - Components: RJ-45 connector, Climping Tool, Twisted pair Cable
2. Study of Network Devices in Detail.
   - Repeater, Hub, Switch, Bridge, Router, Gate Way
3. Study of network IP.
   - Classification of IP address, Sub netting, Super netting
4. Connect the computers in Local Area Network.
   - Procedure on the host computer
   - Procedure on the client computer
5. Study of basic network command and Network configuration commands.
   - Software: Command Prompt And Packet Tracer.

     Configuring the Router commands
     General Commands to configure network
     Privileged Mode commands of a router
     Router Processes & Statistics
     IP Commands
     Other IP Commands e.g. show ip route etc.
6. Configure a Network topology using packet tracer software.
   - Software: Packet tracer Software
7. Configure a Network using Distance Vector Routing protocol.
   - Software: packet tracer software
8. Configure Network using Link State Vector Routing protocol.
   - Software: packet tracer software

B.A.– COMPUTER SCIENCE

SEMESTER V and VI

W.e.f. Batch 2018 onwards

BACS- 311
Object Oriented Programming Using 'C++'

Max. Marks:35 **External Marks:25Time:3Hours**
InternalMarks:10

Papersetterisrequiredtosetninequestionsinall.Questionno.1iscompulsoryandisbasedontheentiresyllabusconsistingoffiveshortanswertypequestionseachof1marks. The remainingeightquestionsare tobe setuniformly havingtwoquestionsfromeachunit.Thestudentisrequiredtoattemptfivequestionsinallselectingonequestionfromeachunitand Question No.1 iscompulsory.

UNIT – I

Procedure Oriented Programming, Object-Oriented programming Paradigm, difference between Procedure Oriented Programming and Object-Oriented programming, Basic concepts of Object-Oriented programming, Benefits of OOP, Object Oriented Languages, and application of OOP. Structure of a C++ Program, Insertion operator, Extraction operator, Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations, Manipulators, inline functions.

UNIT-II

C structure revisited, specifying a Class, Creating Objects, Defining member function, Memory allocation for objects, Scope resolution operator and its significance, Static Data Members, Static member functions, Friend Function, Friend Class.

UNIT – III

Dynamic Memory Management using new and delete Operator , Constructor, type of constructors, Dynamic initialization of objects, Constructor overloading, Constructor with default arguments, Destructors, function overloading, Operator Overloading, Overloading unary and binary operators.

UNIT – IV

Inheritance, Single Inheritance, Making a private member inheritable, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Hybrid Inheritance, Virtual Base Class. Abstract Classes, Constructors in derived classes.

Suggested Readings:

1. Balaguruswami, E., Object Oriented Programming with C++, Tata McGraw-Hill.
2. Robert Lafore, Object Oriented Programming in C++, SAMS Publishing
3. Bjarne Stroustrup, The C++ Programming Language, Pearson Education
4. Herbert Scildt, C++, The Complete Reference,Tata McGraw-Hill

BACS-312
DATA ANALYTICS

Max. Marks:35 **External Marks:25Time:3Hours**
InternalMarks:10

Papersetterisrequiredtosetninequestionsinall.Questionno.1iscompulsoryandisbasedontheentiresyllabusconsistingoffiveshortanswertypequestionseachof1marks. The remainingeightquestionsare tobe setuniformly havingtwoquestionsfromeachunit.Thestudentisrequiredtoattemptfivequestionsinallselectingonequestionfromeachunitand Question No.1 iscompulsory.

UNIT-I

Data Analytics: Introduction to Data Analytics, Business Intelligence (BI) for better decisions, Decision types, BI tools, BI skills, BI applications.

Data warehousing: Introduction to Data warehousing (DW), Design considerations for DW, DW development approaches, DW architecture.

Data Mining: Introduction to Data mining, Data cleaning and preparation, outputs of Data mining, evaluation of data mining results, Data Mining Techniques.

UNIT-II

Decision Trees: Introduction to Decision tree, Decision tree problem, Decision tree construction, Lessons from constructing trees, Decision tree algorithms.

Regression: Introduction, Correlations and Relationships, Visual Look at Relationships, Logistic regression, Advantages and disadvantages of regression models.

Artificial Neural Networks: Introduction, business applications of ANN, Design principles of an ANN, Representation of a neural network, Architecting a neural network, Developing an ANN, Advantages and disadvantages of using ANN.

UNIT-III

Cluster analysis: Introduction, Applications of cluster analysis, Definition of a cluster, Representing clusters, Clustering techniques, K-means algorithm for clustering, Selecting the number of clusters.

Association rule Mining: Introduction, Business applications of association rules, Representing association rules, Algorithms for association rule, Apriori algorithm, Creating association rules.

Web Mining: Introduction, Web content mining, Web structure mining, Web usage mining, Web mining algorithms.

UNIT-IV

Naive-base analysis: Introduction, Probability, Naïve base model, Text classification example.

Support vector machines: Introduction, SVM model, The kernel method,

Big data: Introduction, Defining big data, Big data landscape, Business implications of big data, Technology implications of big data, Big data technologies, Management of big data.

Suggested Readings

1. Data Analytics by Anil Maheshwari, Mc GrawHill Education, 2017.
2. Data Analytics for Beginners, Robert J. Woz, Createspace Independent Pub (October 2017)

Note: Latestandadditionalgoodbooksmaybesuggestedandaddedfromtimetotime.

BACS-313
Computer Lab—V

Marks: 30
Time: 3 Hours

List of Experiments Using C++:

1. Write a program to perform different arithmetic operation such as addition, subtraction, division, modulus and multiplication using inline function.
2. Write a program to find area of square, rectangle, circle using function overloading.
3. Define a class to represent an item class with data members as number and cost. Write member functions to read and display the data. Write a main program to test the data.
4. Define a class to represent a bank account with the following members

   Data members:

   1. Account holder Name
   2. Account number
   3. Type of account
   4. Balance amount in the account

   Member functions:

   1. to assign initial value
   2. To deposit an amount
   3. To withdraw an amount after checking the balance
   4. To display name and balance

   Write a main program to test it.
5. Write a program to explain the concept of static data member.
6. Write a program to explain the concept of static member function.
7. Write a program to swap private data of two different classes using friend function.
8. Define a class for complex number with default, parameterized, copy constructor. Write a program to add two complex numbers using friend function.
9. Define a class string with dynamic constructors. Write a program to concatenate two strings.
10. Write a program to show the order in which objects are created and destroyed using constructor and destructor.
11. Write a program to overload unary minus (-) operator using space class.
12. Write a program to overload binary plus (+) operator as member function to add two complex numbers.
13. Write a program to overload binary plus (+) operator as friend function to add two complex numbers.
14. Write programs to explain single, multiple, multilevel, hierarchical and hybrid inheritance.

15. Write a program to explain manipulators.

BACS-321
COMPUTER GRAPHICS

Max. Marks:35 **External Marks:25Time:3Hours**
InternalMarks:10

Papersetterisrequiredtosetninequestionsinall.Questionno.1iscompulsoryandisbasedontheentiresyllabusconsistingoffiveshortanswertypequestionseachof1marks. The remainingeightquestionsare tobe setuniformly havingtwoquestionsfromeachunit.Thestudentisrequiredtoattemptfivequestionsinallselectingonequestionfromeachunitand Question No.1 iscompulsory.

UNIT - I

Introduction: Historical perspective of Computer Graphics, Basic elements of Computer graphics (Modelling,Rendering, Animation), Applications of Computer Graphics.

InputDevices: Keyboard, Mouse, Light Pen, Graphic Tablets,Joysticks, Trackball,Flatbed Scanner.

UNIT - II

Hard Copy Devices: Laser Printer, Flatbed Plotters.

Video Display Devices: Pixel, Resolution, Aspect Ratio, Refresh Rate and Interlacing. Cathode Ray Tube**,**Flat Panel Display-LCD and Plasma Panel**.** Raster and Random scan display system.

UNIT - III

Fundamental Techniques in Graphics: Line Generation Algorithms-DDA Algorithm, Bresenham's Line Generation Algorithm.Circle Generation Algorithms-Bresenham's Algorithm and Midpoint Circle Algorithm. Polygon Filling Algorithms-Scan Line Algorithm. Viewing & Clipping-Point Clipping and Line Clipping, Cohen-Sutherland Line Clipping Algorithm. Polygon Clipping (Sutherland Hodgman Algorithm)

UNIT – IV

2-Dimensional Graphics: Cartesian and Homogeneous Co-ordinateSystem, Geometric Transformations (Translation, Scaling, Rotation, Reflection).

3-Dimensional Graphics: Geometric Transformations (Translation, Scaling, Rotation, Reflection), Mathematics of Projections(Parallel & Perspective).

Suggested Readings:

1. Computer Graphics Principles and Practices second edition by James D. Foley, Andeies van Dam,Stevan.
2. K.Feiner and Johb F. Hughes, 2000, Addision Wesley.
3. Computer Graphics by Donald Hearn and M.Pauline Baker, 2nd Edition, 1999, PHI.
4. Procedural Elements for Computer Graphics – David F. Rogers, 2001, T.M.H Second Edition
5. Introduction to Computer Graphics By N. KrishanmurthyT.M.H 2002

BACS-322
PYTHON PROGRAMMING

Max. Marks:35 **External Marks:25Time:3Hours**
InternalMarks:10

Papersetterisrequiredtosetnine questionsinall.Questionno.1iscompulsoryandisbasedontheentiresyllabusconsistingoffiveshortanswertypequestionseachof1marks. The remainingeightquestionsare tobe setuniformly havingtwoquestionsfromeachunit.Thestudentisrequiredtoattemptfivequestionsinallselectingonequestionfromeachunitand Question No.1 iscompulsory.

UNIT - I

Introduction to Python: History and Features of Python Programming, Python Interpreter. Variable, identifiersand literal. Token, keywords. Data Types. Arithmetic operators, Relational operators, Logicaloperators, Bitwise operators, Assignment operators, Membership operators, Identity operators. Operator precedence. Comment, Indentation, Need for indentation

Built-in Functions: input, eval, composition, print, type, round, min and max, pow. Type Conversion, Random Number Generation. Mathematical Functions. Getting help on a function, Assert Statement.

UNIT - II

Control Statements: if Conditional Statement, for and while Statements. break, continue and pass statements.

Functions: Function Definitionand Call, Function Arguments-Variable Function Arguments, Default Arguments, Keyword Arguments,Arbitrary Arguments. Command Line Arguments. Global and local Variables. Accessing local variable outside the scope,Using Global and Local variables in same code, Using Global variable and Local variable with sameName.

UNIT - III

Strings: String as a compound data type. String operations- Concatenation, Repetition, Membership operation, Slicing operation. String methods-count, find, rfind, capitalize, title, lower, upper, swapcase, islower, isupperistitle, replace, isalpha, isdigit, isalnum. String Processing examples.

Lists: List operations-multiplication, concatenation, length,indexing,slicing, min, max, sum, membership operator; List functions-append, extend, remove, pop, count, index, insert, sort, reverse.

Recursion: Recursive solutions for problems on Numbers, String and list.

UNIT - IV

Object OrientedProgramming: Introduction to Classes, Method, Class object, Instance object, Method object. Class as abstract data type, Date Class. Access attributes using functions-getattr, hasattr, setattr, delattr. Built-In Class Attributes of Class object(__dict__, __doc__ , __name__, module__).

Graphics: Screen Objects- Point andline, box, polygon, circle, arc. Screen Object Methods-move_to(),move_by(),rotate_by(),Text().Sound-Sound(),play_sound(),stop_sound().

Suggested Readings:

1. SheetalTaneja and Naveen Kumar, "Python Programming A modular Approach", Pearson
2. P. K. Sinha &PritiSinha , "Computer Fundamentals", BPB Publications, 2007.
3. Dr. Anita Goel, "Computer Fundamentals", Pearson Education, 2010.
4. Allen Downey, Jeffrey Elkner, Chris Meyers.How to think like a computer scientist learning with Python / 1st Edition,2012 .

BACS-323
Computer Lab--VI

Marks: 30
Time: 3 Hours

List of Experiments Using PYTHON:

1. Write a Program to convert decimal number into binary, octal and hexadecimal number systemusing built-in functions.
2. Write a program to find the H.C.F of two input number using function.
3. Write a program to slice lists.
4. Write aprogram to change or add elements to a list.
5. Write a program to display calendar of given month of the year.
6. Write a program to compute factorial of a number using recursion.
7. Write a program to reverse the string using recursion.
8. Write a program to create copy of list using recursion.
9. Write a program to implement Bresenham's line drawing algorithm.
10. Write a program to implement mid-point circle drawing algorithm.
11. Write a program to clip a line using Cohen and Sutherland line clipping algorithm.
12. Write a program to clip a polygon using Sutherland Hodgeman algorithm.
13. Write a program to apply various 2D transformations.

SCHEME OF COMPUTER AWARENESS TO BE INTRODUCED AT UNDER GRADUATE LEVEL

Paper Code	Paper Name	Maximum Marks	Pass Marks	Examination Duration
COMPUTER AWARENESS (LEVEL – I) w.e.f. 2010-11				
L1 – (I)	Basic Computer Education	100	35	3 hours
L1 – (II)	Software Lab – I	100	35	3 hours
COMPUTER AWARENESS (LEVEL – II) w.e.f. 2010-11				
L2 – (I)	PC Software & ICT	100	35	3 hours
L2 – (II)	Software Lab – II	100	35	3 hours
COMPUTER AWARENESS (LEVEL – III) w.e.f. 2011-12				
L3 – (I)	Web Designing	100	35	3 hours
L3 – (II)	Software Lab – III	100	35	3 hours

Important Instructions:

1. The theory question paper will be provided by the University.
2. The practical question paper will be set by the examiner on the spot.
3. The workload for theory paper is three periods per week.
4. The practical of students will be held in groups.
5. Each practical group will comprise of 20 students in Level-I and 15 students in Level-II and Level III respectively.
6. The workload for practical paper is three periods per group per week.

COMPUTER AWARENESS (LEVEL – I)

L1 – (I) BASIC COMPUTER EDUCATION(w.e.f. 2010-2011)

Max. Marks: 100
Exam Duration: 3 Hrs

Pass Marks: 35
Workload: 3 periods/week

Note: The examiner will set total 10(ten) questions covering the entire syllabus. Student will attempt any five questions. All questions will carry equal marks.

Computer: Definition, Characteristics, Applications, Components of Computer System, Input/Output Devices, Concept of Memory, Magnetic and Optical Storage Devices.
Operating System- Windows: Definition & Functions of Operating System, Basic Components of Windows, Exploring Computer, Icons, taskbar, desktop, managing files and folders, Control panel – display properties, add/remove software and hardware, setting date and time, screensaver and appearance.
Word Processing: Introduction to Word Processing, Menus, Creating, Editing & Formatting Document, Spell Checking, Printing, Views, Tables, Word Art, Mail Merge, Macros.
Computer Communication: Internet and its applications, Surfing the Internet using web browsers. Creating Email Id, Viewing an E-Mail, Sending an E-Mail to a single and multiple users, Sending a file as an attachment.

REFERENCES BOOKS

1. Sinha, P.K. & Sinha, Priti, Computer Fundamentals, BPB
2. Dromey, R.G., How to Solve it By Computer, PHI
3. Microsoft Office – Complete Reference – BPB Publication

L1 – (II) SOFTWARE LAB – I

Max. Marks: 100
Exam Duration: 3 Hrs

Pass Marks: 35
Workload: 3 periods/week

Windows Operating System and Word Processing
Practical exposure as per theory syllabi
Computer Communication

1. Connect the Internet, Open any website of your choice and save the Web Pages.
2. Search any topic related to your syllabi using any search engine and download the relevant material.
3. Create your E-Mail ID on any free E-Mail Server, Login through that and implement various operations provided in it.

COMPUTER AWARENESS (LEVEL – II)

L2 – (I) PC SOFTWARE AND ICT w.e.f. 2010-11

Max. Marks: 100
Exam Duration: 3 Hrs

Pass Marks: 35
Workload: 3 periods/week

Note: The examiner will set total 10(ten) questions covering the entire syllabus. Student will attempt any five questions. All questions will carry equal marks.

Spread Sheet: Elements of Electronics Spread Sheet, Applications, Creating and Opening of Spread Sheet, Menus, Manipulation of cells: Enter texts numbers and dates, Cell Height and Widths, Copying of cells, Mathematical, Statistical and Financial function, Drawing different types of charts. Presentation Software: Creating, modifying and enhancing a presentation, Delivering a presentation, Using sound, animation and design templates in presentation.
ICT Fundamentals: Basics of Information Communication Technology, Computer Networks and their advantages, Types of Computer Network, Network Topologies, Basics of Transmission Media Internet Advanced Services: Downloading/uploading files using ftp/telnet, Chatting, Video conferencing, Online storage of data on Google and Yahoo, Configuring and Using Outlook Express for E-Mail

REPERENCES BOOKS

1. Microsoft Office – Complete Reference – BPB Publication
2. Learn Microsoft Office – Russell A. Stultz – BPB Publication
3. Sinha, P.K. & Sinha, Priti, Computer Fundamentals, BPB

L2 – (II) SOFTWARE LAB – II

Max. Marks: 100
Exam Duration: 3 Hrs

Pass Marks: 35
Workload: 3 periods/week

Presentation Software

1. Make a presentation of College Education System using (a) Blank Presentation, (b) From Design Template, and (c) From Auto Content Wizard.
2. Make a presentation on "Wild Life". Apply various colour schemes, audio effects and animation schemes.

Spread Sheet

1. Generation of Electricity Bill, Telephone Bill, Salary Statement of an Employee and Mark Sheet of a student etc.
2. Apply various mathematical, statistical and financial functions on any worksheet.
3. To compute mean/median/mode in any worksheet.

COMPUTER AWARENESS (LEVEL – III)

L3 – (I) WEB DESIGNING w.e.f. 2011-2012

Max. Marks: 100 Pass Marks: 35
Exam Duration: 3 Hrs Workload: 3 periods/week

Note: The examiner will set total 10(ten) questions covering the entire syllabus. Student will attempt any five questions. All questions will carry equal marks.

Scripting Language: Basics of HTML, Basic tags, Document tags, Empty tags, Comment lines, Ordered and unordered lists, Menu list, Absolute links, Relation links in web sites, Table handling, Image and Pictures, Frames, Forms, Animation, Use of colors.

Web authoring tools: Front Page express and explorer, Front Page editor, Application of themes, Formatting of text on web page, Creation of web pages, web sites, hyperlinks, Images, Sound and Video effects, Tables handling, Frame and frame properties, Tasks views, Web wizards, Radio buttons and Command buttons.

REFERENCE BOOKS:

1. C. Xavier, World Wide Web Design with HTML, Tata McGraw Hill
2. NIIT, Basics of Website Design, PHI Learning Private Limited, New Delhi
3. Microsoft Office Frontpage - The Complete Reference, Tata McGraw-Hill

L3 – (II) SOFTWARE LAB – III

Max. Marks: 100 Pass Marks: 35
Exam Duration: 3 Hrs Workload: 3 periods/week

HTML

1. Create any web page using following HTML tags: (a) Background Colour, (b) Font (Colour, Size, Face), (c) Bold/Italic/Underline, (d) Big/Small, (e) H1, H2, etc. (f) Marquee, (g) Ordered/Unordered Lists
2. Create an employee table and apply various table handling operations on it using HTML.
3. Implement the concept of Frames in a Web page.
4. Design Home page of your Institute and insert images in it.
5. Prepare your CV and link it on the web page.
6. Create a web page and use various sound effects/animation schemes in it.

Front Page

Use Front Page to

1. Create a web page using different text styles.
2. Create a new page using clip art gallery.
3. Create a new page using image from a scanner.
4. Create a web page showing a tourism spots of your area.
5. Create a web page having various table handling operations.

B.A. Mathematics

	Home Science						
FDMS 101	Family Resource Management Theory	6	40	10	---	50	3Hrs
FDMS (P) 102 Practical	Family Resource Management Practical	6	---	---	50	50	3Hrs
SOCL 101	Sociology: Basic Concepts in Sociology	6	80	20	—	100	3Hrs
PUBA 101	Elements of Public Administration	6	80	20	—	100	3Hrs
DEFS 101	Introduction of Defence Studies	6	50	20	---	70	3Hrs
DEFS (P)102	Map Reading (Practical)	6	—	—	30	30	3Hrs
HIST 101	History Option-I Ancient India (From Earliest Times to Gupta Age)	6+2	80	20	---	100	3Hrs
	---Or---						
HIST 102	Option-II History of Haryana (From Harappan Age to 1526 A.D.)		80	20	---	100	3Hrs
PHIL 101	Philosophy Option-I Outlines of Indian Philosophy	6	80	20	---	100	3Hrs
	---Or---						
PHIL 102	Option-II Indian Epistemology and Metaphysics		80	20	---	100	3Hrs
	Geography (Pass Course):						
GEOG 101	Geography of India	6	50	20	---	70	3Hrs
GEOG 102	Maps, Scales	6	---	---	30	30	3Hrs
	Mathematics (BA Pass Course)						
BAMH 111	Paper-I: Algebra	3	25	10	---	35	3Hrs
BAMH 112	Paper-II: Calculus	3	25	10	---	35	3Hrs

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B.A: Mathematics

BAMH113	Practical: Mathematics Lab: I	6	---	---	30	30	3Hrs
	Total		50	20	30	100	
	Computer Science (BA Pass Course)						
BACS 111	Paper-I: Fundamentals of Computer	3	25	10	---	35	3Hrs
BACS 112	Paper-II: Programming in 'C'	3	25	10	---	35	3Hrs
BACS 113	Practical: Computer Lab-I --Based on Fundamentals of Computer and Programming in 'C'	6	---	---	30	30	3Hrs
	Total		50	20	30	100	

Compulsory Papers --Semester-IInd:

Note: Three papers are compulsory (i.e. two languages and one environmental studies and computer awareness will continue from 1st semester).

Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
ENGC 102	Eng (C)-Literature and Language-II	8+2	80	20	—	100	3Hrs
HINC 102	Hindi Compulsory	8+2	80	20	—	100	3Hrs

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B.A. Maths

HST 104	History of Haryana (1526-1966 A.D.)		80	20		100	3Hrs
	Philosophy Option-I						
PHIL 103	Outlines of Western Philosophy	6	80	20	--	100	3Hrs
	--Or-- Option-II						
PHIL 104	Western Epistemology and Metaphysics		80	20	--	100	3Hrs
	Geography (Pass Course):						
GEOG 103	Physical Geography-Geomorphology	6	50	20	----	70	3Hrs
GEOG 104	Representation of Physical features	6	----	----	30	30	3Hrs
	Mathematics (BA Pass Course)						
BAMH 121	Paper-I: Ordinary Differential Equations and Laplace Transforms	3	25	10	---	35	3Hrs
BAMH 122	Paper-II: Vector Calculas and Geometry	3	25	10	---	35	3Hrs
BAMH123	Practical: Mathematics Lab: II	6	---	---	30	30	3Hrs
	Total		50	20	30	100	
	Computer Science (BA Pass Course)						
BACS 121	Paper-I: Data Structure using 'C'	3	25	10	---	35	3Hrs
BACS 122	Paper-II: Computer Organization	3	25	10	---	35	3Hrs
BACS 123	Practical: Computer Lab-II: Based on Data Structure using 'C'	6	---	---	30	30	3Hrs
	Total		50	20	30	100	

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B.A Mathematics

B.A. II[nd] Year 3[rd] & 4[th] Semester

Scheme of Examination

(w.e.f. the academic session 2019-20)

Semester

er	Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
r A ory	BAMH 201	Advanced Calculus	6	25	10	-	35	3 hrs
r B ory	BAMH 202	Numerical Analysis	6	25	10	-	35	3 hrs
r C tical	BAMH (P) 203	Mathematics Lab–III	4	30	-	-	30	3 hrs

Semester

per	Paper Code	Nomenclature of Paper	Periods per Week	External Marks	Internal Marks	Practical	Total Marks	Time
per A eory	BAMH 204	Partial Differential Equations & Special Functions	6	25	10	-	35	3 hrs
per B eory	BAMH 205	Mechanics-I	6	25	10	-	35	3 hrs
per C ctical	BAMH (P) 206	Mathematics Lab–IV	4	30	-	-	30	3 hrs

DEPARTMENT OF MATHEMATICS
G.J. UNIVERSITY OF SCI. & TECH., HISAR

Scheme of Mathematics Papers for B.A. IIIrd Year (5th & 6th Semesters) for Affiliated Colleges of GJUST, Hisar

(w.e.f. 2020-2021)

5th Semester

Paper Code	Nomenclature	Periods per week	External Marks	Internal Marks	Total Marks	Time
BAMH 301(i) OR BAMH 301(ii)	Groups and Rings OR Sampling Techniques	6	28	07	35	3 Hours
BAMH 302(i) OR BAMH 302(ii)	Sequence & Series OR Sample Survey and Design of Experiments	6	28	07	35	3 Hours
BAMH 303(i) OR BAMH 303(ii)	Number Theory & Trigonometry OR Integer programming &Theory of Games	6	24	06	30	3 Hours
		18	80	20	100	

DEPARTMENT OF MATHEMATICS
G.J. UNIVERSITY OF SCI. & TECH. HISAR

Scheme of Mathematics Papers for B.A. IIrd Year (5th & 6th Semesters) for Affiliated Colleges of GJUST, Hisar

(w.e.f. 2020-2021)

6th Semester

Paper Code	Nomenclature	Periods per week	External Marks	Internal Marks	Total Marks	Time
BAMH 304(i) OR BAMH 304(ii)	Linear Algebra OR Bio-Mathematics	6	28	07	35	3 Hours
BAMH 305(i) OR BAMH 305(ii)	Mechanics-II OR Queuing and Reliability Theory	6	28	07	35	3 Hours
BAMH 306(i) OR BAMH 306(ii)	Real & Complex Analysis OR Optimization Techniques	6	24	06	30	3 Hours
BAMH 307(i) OR BAMH 307(ii)	Solid Geometry OR Financial Mathematics OR SWAYAM-MOOC	3	16	04	20	2 Hours
		21	96	24	120	

Guru Jambheshwar University of Science & Technology, Hisar

Scheme for Theory + Practical Based Subjects

Guidelines for Scheme of examination of UG Course Mathematics-B.A. Pass course (under semester system)

The Scheme of Examination of undergraduate (UG) Courses (**Theory-70 marks (Two Papers) + Practical-30 marks Based Subjects)** under Faculty of Humanities & Social Sciences run by affiliated degree colleges will be under (50+20) + 30 (External + Internal + Practical) for practical based courses. Pass percentage will be …

For the UG courses under Faculty of Humanities & Social Sciences, the guidelines regarding scheme and paper setting will be followed as:

For the end semester examinations regarding practical subjects, nine questions are to be set by the examiner. The candidates shall attempt five questions in all. First question will be compulsory of 05 marks based on the entire syllabus. It will comprise of five short answer type questions of one mark each. Students are required to attempt any four questions out of remaining eight questions (these eight questions may be (in) up to four units depending on the subject). All remaining questions shall carry equal marks.
Scheme: [25 Paper-I+25 Paper-II+(10+10)] + 30 [External + (Internal) + Practical]
1^{st} question=05 marks (05 short answer type questions of 1 mark each)
Rest four questions: 05 marks each i.e. 4 x 05=20
Total = (25+10+25+10) + 30 = 100 marks

Components of Internal Assessment (Breakdown of 10 marks in each Paper)
a. Class Test: 2.5 marks
b. Assignment: 2.5 marks
c. Participation in Class Discussions: 1.5 marks
d. Term Paper/written test/2^{nd} assignment: 2.5 marks
e. Attendance: 2 marks* (Paper-I+Paper-II+Practicals)

*Weightage of 2 marks for **Attendance** component out of 20 marks for Internal Assessment shall be available only to those students who attend **75% and more** of classroom lectures and practical. The break-up of marks for **attendance component** for theory + practical papers shall be as under:

(a) 75% and above up to 85%: 01 mark

(b) Above 85%: 02 marks

BA Mathematics
Semester-I
BAMH-111: ALGEBRA

Marks (External Exams) : 25
Marks (Internal Assessment): 10
Time: 3 Hours

Note. The examiner is requested to set **nine questions** in all, selecting two questions from each Unit. Candidates are required to attempt five questions in all. Question no. 1 is compulsory and is based on entire syllabus consisting of five short answer type questions each of **one mark**. Candidates are required to attempt four questions from units I to IV, selecting one question from each Unit, each question carries **five marks**.

Course Objective	Course Outcome
The course on Algebra deals with advance topics on matrices viz. rank, eigen values and homogeneous and non homogeneous systems, solution of cubic and bi-quadratic equations.	The student will be able to find the rank, eigen values of matrices and solve the homogeneous and non homogeneous systems, solution of cubic and bi-quadratic equations.

Unit-I

Symmetric, Skew symmetric, Hermitian and skew Hermitian matrices. Elementary Operations on Matrices. Rank of matrices. Inverse of a matrix. Linear dependence and independence of rows and columns of matrices. Row rank and column rank of a matrix. Eigenvalues, Eigenvectors and the characteristic equation of a matrix. Minimal polynomial of a matrix. Cayley Hamilton Theorem and its use in finding the inverse of a matrix.

Unit-II

Applications of matrices to a system of linear (both homogeneous and non–homogeneous) equations. Theorems on consistency of a system of linear equations. Unitary and Orthogonal Matrices, Bilinear and Quadratic forms. Canonical Form of a Bilinear form. Matrix notation of Bilinear and Quadratic Form. Linear Transformation of a Quadratic form. Langrange's method of Diagonalization. Factorable Quadratic Form. Sylvester's Criterion.

Unit-III

Relations between roots and coefficients of general polynomial equation in one variable. Synthetic Division. Remainder Theorem and factor Theorem. Solutions of polynomial equations having conditions on roots. Common roots and multiple roots. Transformation of equations.

Unit-IV

Nature of the roots of an equation, Solutions of cubic equations (Cardan's Method). Solution of Biquadratic equations (Descarte's Method, Ferrari's Method). Descarte's rule of signs for Polynomial. Location of roots in an interval.

Books Recommended :

1. H.S. Hall and S.R. Knight: Higher Algebra, H.M. Publications .
2. Shanti Narayan : A Text Book of Matrices. S Chand & Co Ltd.
3. Chandrika Prasad :AText Book on Algebra and Theory of Equations. Pothishala Private Ltd., Allahabad.

BA Mathematics
Semester-I
BAMH-112: CALCULUS

Marks (External Exams) : 25
Marks (Internal Assessment): 10
Time: 3 Hours

Note. The examiner is requested to set **nine questions** in all, selecting two questions from each Unit. Candidates are required to attempt five questions in all. Question no. 1 is compulsory and is based on entire syllabus consisting of five short answer type questions each of **one mark**. Candidates are required to attempt four questions from units I to IV, selecting one question from each Unit, each question carries **five marks**.

Course Objective	Course Outcome
The course on differential and Integral Calculus deals with some important concepts of limit, continuity, differentiability of functions and tracing of curves, reduction formulae, rectification, quadrature and volume of solids of revolution.	The student will be able to understand basic properties of Limit, continuity and derivability of functions, series expansion indeterminate forms, tracing of curves, reduction formulae, rectification, quadrature and volume of solids of revolution.

Unit-I

$\varepsilon - \delta$ definition of continuity of a function. Basic properties of limits, continuous functions and classification of discontinuities. Successive differentiation. Lebnitz Theorem. Maclaurin and Taylor series expansions.

Unit-II

Asymptotes in Cartesian coordinates, intersection of curve and its asymptotes. Asymptotes in polar coordinates. Curvature , radius of curvature for Cartesian curve, parametric curves, polar curves. Newton's Method. Radius of curvature for pedal curves. Tangential polar equations. Centre of curvature. Circle of curvature. Chord of curvature, Evolutes. Test for concavity and convexity. Singular points. Points of inflexion. Multiple points. Cusps, nodes & conjugate points. Species of cusps.

Unit-III

Tracing of curves in cartesian, parametric and polar co-ordinates. Reduction formulae. Derivation of reduction formulae by connecting with other integral. Rectification, length of curves in Cartesian, parametric and polar curves, intrinsic equations of curves from cartesian, parametric and polar curves.

Unit-IV

Quadrature and Sectorial Area. Area bounded by closed curves. Area enclosed by curves in polar form. Volumes and Area of solids of revolution. Volume bounded between two solids. Volume formula for parametric curves. Theorems of Pappu's and Guilden.

Books Recommended

1. H. Anton, I. Birens and S. Davis, Calculus, John Wiley and Sons, Inc.
2. G.B. Thomas and R.L. Finney, Calculus, Pearson Education.
3. T.M. Apostal : Calculus, vol. 1, John Wiley and Sons (Asia).
4. Shanti Narayan, Differential and Integral Calculus.
5. Murray R. Spiegel : Theory and Problems of Advanced Calculus. Schaun's Outline series. Schaum Publishing Co., New York.
6. Gorakh Prasad : Differential Calculus. Pothishasla Pvt. Ltd., Allahabad.

BA Mathematics
Semester-I
BAMH-113: Mathematics Lab– I

Marks for External Exams: 30
Time: 3 Hours

Course Objective	Course Outcome
The course on Practical deals with some important concepts of Programming in C.	The student will be able to solve and calculate the mathematical problems through programming.

Part A:

Introduction to Programming in C. Data types, Operators and expressions, Input / outputs functions. Decision control structure: Decision statements, Logical and conditional statements, Implementation of Loops, Switch Statement & Case control structures.

Part B:

Programs based on simple arithmetic:

1. Program to Calculate Simple Interest
2. Program to Calculate Compound Interest
3. Program to Calculate Arithmetic mean of three numbers
4. Program to calculate area of triangle by Heron's Formula
5. Program to calculate area and perimeter of a circle
6. Program to check whether the number is odd or even
7. Program to find the roots of a quadratic equation
8. Program to calculate greatest of three numbers
9. Program to reverse the digits of a positive number
10. Program to check whether a number is prime or not
11. Program to convert decimal to binary
12. Program to generate first n prime numbers.
13. Program to check a year Leap or not.
14. Program to find the sum of first n natural numbers
15. Program to find sum of first n terms of an AP
16. Program to find sum of first n terms of a GP.
17. Program to generate a pyramid
18. Program to find simple interest using switch statement.
19. Program to prepare electricity Bill
20. Program to calculate Gross Salary of an Employee

Note: Every student will have to prepare a file to maintain practical record of the problems solved and the computer program done during practical class work. Examination will be conducted through a question paper set jointly by an external and internal examiner. An examinee will be asked to write solutions in the answer books. An examinee will be asked to run (execute) two programs on a computer. Evaluation will be made on the basis of the examinees' performance in written solutions/ programs, execution of computer programs and viva-voce examination**.**

Books Recommended:

1. B.W. Kernighan and D.M. Ritchie : The C Programming Language, 2nd Edition
2. V. Rajaraman : Programming in C, Prentice Hall of India.
3. Byron S. Gottfried: Theory and Problems of Programming with C, Tata McGraw-Hill Publishing Co. Ltd.

BA Mathematics
Semester-II
BAMH-121: ORDINARY DIFFERENTIAL EQUATIONS AND LAPLACE TRANSFORMS

Marks (External Exams) : 25
Marks (Internal Assessment): 10
Time: 3 Hours

Note. The examiner is requested to set **nine questions** in all, selecting two questions from each Unit. Candidates are required to attempt five questions in all. Question no. 1 is compulsory and is based on entire syllabus consisting of five short answer type questions each of **one mark**. Candidates are required to attempt four questions from units I to IV, selecting one question from each Unit, each question carries **five marks**.

Course Objective	Course Outcome
The course on ordinary differential equations and Laplace Transforms deals with some important concepts Exact differential equations, Orthogonal trajectories, Linear differential equations with variable & constant coefficients and solution of ordinary differential equations using Laplace Transforms.	The student will be able to understand basic properties of differential equations, Orthogonal trajectories, Linear differential equations. Apart from this the students will able to solve ODE by Transformation of the equation by changing the dependent variable/ the independent variable. Solution by operators of non-homogeneous linear differential equations. Reduction of order of a differential equation. Method of variations of parameters. Solution of Simultaneous Differential Equations and Total Differential Equations. Also able to understand basic properties of Laplace and Inverse Laplace Transforms and solution of ordinary differential equations using Laplace Transform

Unit – I

Geometrical meaning of a differential equation. Exact differential equations, integrating factors. First order higher degree equations solvable for x,y,p Lagrange's equations, Clairaut's equations. Equation reducible to Clairaut's form. Singular solutions.

Unit – II

. Orthogonal trajectories: in Cartesian coordinates and polar coordinates. Self orthogonal family of curves. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations. Equations reducible to homogeneous.

Unit – III

Linear differential equations of second order. Reduction to normal form. Transformation of the equation by changing the dependent variable/ the independent variable. Solution by operators of non-homogeneous linear differential equations.Reduction of order of a differential equation. Method of variations of parameters.Ordinary simultaneous differential equations. Solution of simultaneous differential equations.

Unit – IV

Laplace Transforms –Existence theorem for Laplace transforms, Linear property of the Laplace transform, Shifting theorems, Laplace transform of derivatives and integrals, Differentiation and integration of Laplace transforms, Convolution theorem,

Inverse Laplace transform, convolution theorem, Inverse Laplace transform of derivatives, solution of ordinary differential equations using Laplace transform.

Books Recommended :

1. D.A. Murray : Introductory Course in Differential Equations. Orient Longaman (India) .
2. A.R.Forsyth : A Treatise on Differential Equations, Machmillan and Co. Ltd. London
3. E.A. Codington : Introduction to Differential Equations.
4. S.L.Ross : Differential Equations, John Wiley & Sons
5. B.Rai & D.P. Chaudhary : Ordinary Differential Equations; Narosa, Publishing House Pvt. Ltd.
6. M.D. Raisinghania :Ordinary and Partial Differential Equations.
7. Dyke,Phil : An introduction to Laplace Transforms and Fourier Series,Springer Undergraduate Mathematics Series.
8. Murray Spiegel: Schaum's Outline of Laplace Transform. McGraw-Hill Education.

BA Mathematics
Semester-II
BAMH-122: VECTOR CALCULAS AND GEOMETRY

Marks (External Exams) : 25
Marks (Internal Assessment): 10
Time: 3 Hours

Note. The examiner is requested to set **nine questions** in all, selecting two questions from each Unit. Candidates are required to attempt five questions in all. Question no. 1 is compulsory and is based on entire syllabus consisting of five short answer type questions each of **one mark**. Candidates are required to attempt four questions from units I to IV, selecting one question from each Unit, each question carries **five marks**.

Course Objective	**Course Outcome**
The course on Vector Calculus and Geometry deals with topics on vectors and geometry viz. directional derivatives, gradient, curl, two and three dimensional geometry.	The student will be able to find directional derivatives, gradient, curl. Laplasian operator, two and three dimensional geometry.

Unit – I

Scalar and vector product of three vectors, product of four vectors. Reciprocal vectors. Vector differentiation Scalar Valued point functions, vector valued point functions, derivative along a curve, directional derivatives. Gradient of a scalar point function, geometrical interpretation of grad Φ. Divergence and curl of vector point function. Gradient, divergence and curl of sums and product and their related vector identities. Laplacian operator.

Unit – II

Vector integration: Indefinite Integral, Definite Integral, Standard results of Integration. Line integral, Surface integral, Volume integral. Gauss Divergence Theorem, Divergence Theorem in Cartesian Co-ordinates, Green Theorem, Stoke's Theorem(Relation between line Integral Surface Integral). Stoke's Theorem in Cartesian form. Green's Theorem in Plane as special case of Stoke's Theorem.

Unit – III

General equation of second degree. Tracing of conics. System of conics, confocal conics. Tangent at any point to the conic, chord of contact, pole of line to the conic, director circle of conic. Polar equation of a conic, tangent and normal to the conic.

Unit -IV

Sphere: Plane section of a sphere. Sphere through a given circle. Intersection of two spheres, radical plane of two spheres. Co-axial system of spheres.

Cones: Right circular cone. Enveloping cone and reciprocal cone.

Cylinder: Right circular cylinder and enveloping cylinder.

Books Recommended:

1. Murrary R. Spiegal : Theory and Problems of Advanced Calculus, Schaum Publishing Company, New York.
2. Murrary R. Spiegal : Vector Analysis, Schaum Publisghing Company, New York.
3. N. Saran and S.N. Nigam: Introduction to Vector Analysis, Pothishala Pvt. Ltd., Allahabad.
4. Shanti Narayna : A Text Book of Vector Calculus. S. Chand & Co., New Delhi.

BA Mathematics
Semester-II

BAMH-123: Mathematics Lab– II

Marks for External Exams: 30
Time: 3 Hours

Course Objective	Course Outcome
The course on Practical deals with some important concepts of Programming in C.	The student will be able to solve and calculate the mathematical problems through programming.

Part A: Introduction to Programming in C

Introduction to Functions, Advantages of functions, Function definition and body, Nesting of Functions, Arrays, one dimensional array, two dimensional arrays, Multi-dimensional arrays, Passing arrays to functions. Strings : Character data type, Standard string handling functions, arithmetic operations on characters, Pointers: Definition, Association, Pointers and arrays. Structures: definition, declaration, arrays and structures .

Part B:

1. Program to add two matrices.
2. Program to multiply two matrices.
3. Program to find the inverse of a matrix.
4. Program to find transpose of a matrix.
5. Program to find the sum of a series. Trigonometric series: sin(x), cos(x), tan(x), etc.
6. Program to sort an entire array using bubble short.
7. Program to find trace of 3X3 Matrix.
8. Program to find largest of three numbers using function.
9. Program to find factorial of a number using recursion.
10. Program to generate n fabonacci terms using recursion.
11. Program to count number of vowels and consonants in a given sentence.
12. Program to print a salary chart for employee of a company.

Note: Every student will have to prepare a file to maintain practical record of the problems solved and the computer program done during practical class work. Examination will be conducted through a question paper set jointly by an external and internal examiner. An examinee will be asked to write solutions in the answer books. An examinee will be asked to run (execute) two programs on a computer. Evaluation will be made on the basis of the examinees' performance in written solutions/ programs, execution of computer programs and viva-voce examination

Books Recommended:

1. B.W. Kernighan and D.M. Ritchie : The C Programming Language, 2nd Edition
2. V. Rajaraman : Programming in C, Prentice Hall of India.
3. Byron S. Gottfried : Theory and Problems of Programming with C, Tata McGraw-Hill Publishing Co. Ltd.
4. E. Balagurusamy : Programming in ANSI C, , Tata McGraw-Hill Publishing Co.Ltd.

Guru Jambheshwar University of Science & Technology, Hisar

Scheme for Theory+Practical Based Subjects

Guidelines for Scheme of examination of UG Course

Mathematics-B.A. Pass course (under semester system)

The Scheme of Examination of under graduate (UG) Courses (**Theory-70 marks (Two Papers) + Practical-30 marks Based Subjects)** under Faculty of Humanities &Social Sciences run by affiliated degree colleges will be under(50 +20) +30 (External+ Internal + Practical) for practical based courses. Pass percentage will be…

For the UG courses under Faculty of Humanities &Social Sciences, the guidelines regarding scheme and paper setting will be followed as:

For the end semester examinations regarding practical subjects, nine questions are to be setby the examiner. The candidates shall attempt five questions in all. First question will be compulsory of 05 marks based on the entire syllabus. It will comprise of five short answer type questions of one mark each. Students are required to attempt any four questions out of remaining eight questions (these eight questions may be (in) upto four units depending on the subject). All remaining questions shall carry equal marks.
Scheme: Paper-I: 25 marks (External) + 10 marks (Internal) Paper-II: 25 marks (External) + 10 marks (Internal) Practical: 30 marks
1st question= 05 marks (05 short answer type questions of 1 mark each)
Rest four questions :05 marks each i.e. 04x05 = 20
Total = (25+10+25+10)+30 = 100 marks

Components of Internal Assessment (Break down of 10marks in each Paper)
a. Class Test: 2.5 marks
b. Assignment:2.5 marks
b. Participation in Class Discussions: 1.5 marks
d. Term Paper/written test/2nd assignment: 2.5 marks
e. Attendance: 2 marks* (Paper-I+Paper-II+Practicals)

*Weightage of 2 marks for **Attendance** component out of 20 marks forInternal Assessment shall be available only to those students who attend **75% and more** of class room lectures and practical. The break-up of marks for **attendance component** for theory+practical papers shall be as under:

(a) 75% and above upto85%: 01 mark

(b) Above 85%: 02marks

Guru Jambheshwar University of Science & Technology, Hisar

Mathematics

B.A. IInd Year 3rd Semester

PAPER-A (THEORY) **BAMH- 201 : Advanced Calculus**

(w.e.f. the academic session 2019-20)

External Marks :25
Internal Marks: 10
Time: 3 hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit.
2. The **Compulsory Question No.1 of 05 marks** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 01 mark each) spread over the whole syllabus. Other question will carry the 05 marks each.

UNIT – I

Continuity, Sequential Continuity, properties of continuous functions, Uniform continuity, chain rule of differentiability. Mean value theorems; Rolle's Theorem and Lagrange's mean value theorem and their geometrical interpretations. Taylor's Theorem with various forms of remainders, Darboux intermediate value theorem for derivatives, Indeterminate forms.

UNIT – II

Limit and continuity of real valued functions of two variables. Partial differentiation. Total Differentials; Composite functions & implicit functions. Change of variables. Homogenous functions & Euler's theorem on homogeneous functions. Taylor's theorem for functions of two variables.

UNIT – III

Differentiability of real valued functions of two variables. Schwarz and Young's theorems. Implicit function theorem. Maxima, Minima and saddle points of two variables. Lagrange's method of multipliers.

UNIT – IV

Jacobians, Beta and Gama functions, Double and Triple integrals, Dirichlets integrals, change of order of integration in double integrals.

Guru Jambheshwar University of Science & Technology, Hisar

Mathematics

B.A. IInd Year 3rd Semester

PAPER-B (THEORY) **BAMH- 202 : Numerical Analysis**

(w.e.f. the academic session 2019-20)

External Marks :25

Internal Marks: 10

Time: 3 hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit.
2. The **Compulsory Question No.1 of 05 marks** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 01 mark each) spread over the whole syllabus. Other question will carry the 05 marks each.

UNIT – I

Finite Difference operators and their relations, difference table, finding the missing terms and effect of error in a difference tabular values, Interpolation with equal intervals: derivations of Newton's forward and Newton's backward interpolation formulae and their applications, Interpolation with unequal intervals: derivations of Newton's divided difference & Lagrange's Interpolation formulae and their applications.

UNIT – II

Central Difference interpolation formulae: derivations of Gauss's forward and Gauss's backward interpolation formulae, Sterling,Bessel formulae and their applications. Numerical Differentiation: Relation between difference operator and derivative operator, Derivative of a function using interpolation formulae (as studied in Sections – I & II). Numerical Integration: Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's one- third rule and Simpson's three-eighth rule, Chebychev formula, Gauss Quadrature formula.

UNIT – III

Solution of Algebraic and Transcendental equations: Bisection method, Regula-Falsi method, Secant method, Newton-Raphson's method, Newton's iterative method for finding pth root of a number. Simultaneous linear algebraic equations: Gauss-elimination method, Gauss-Jordan method, Triangularization method (LU decomposition method). Iterative method, Jacobi's method, Gauss-Seidal's method, Relaxation method.

UNIT – IV

Eigen Value Problems: Power method, Jacobi's method, Given's method, House-Holder's method. Numerical solution of ordinary differential equations: Single step methods-Picard's method. Taylor's series method, Euler's method, Modified Euler's method, Runge-Kutta Methods. Multiple step methods; Predictor-corrector method, Milne-Simpson's method

Guru Jambheshwar University of Science & Technology, Hisar

Mathematics

B.A. IInd Year 3rd Semester

PAPER-C (PRACTICAL) **BAMH (P)- 203 : Mathematics Lab–III**

(w.e.f. the academic session 2019-20)

External Marks :30

Time: 3 hours

Write down and execute the following programs using C-Programming Language

1. To interpolate the data using Newton's forward interpolation formula
2. To interpolate the data using Newton's backward interpolation formula
3. To interpolate the data using Gauss's forward interpolation formula
4. To interpolate the data using Gauss's backward interpolation formula
5. To interpolate the data using Lagrange's interpolation formula
6. To find the roots of algebraic and transcendental equations using Bisection method.
7. To find the roots of algebraic and transcendental equations using Regula-Falsi method.
8. To find the roots of algebraic and transcendental equations using Secant method.
9. To find the roots of algebraic and transcendental equations using Newton-Raphson's method.

BOOKS SUGGESTED:

1. Applied Numerical Analysis by Curtis F. Gerald and Patrick G. Wheatley – Pearson Education Ltd.
2. Numerical Methods: E. Balagurusamy, T.M.H.

Guru Jambheshwar University of Science & Technology, Hisar

Mathematics

B.A. IInd Year 4th Semester

PAPER-A (THEORY) BAMH- 204 : Partial Differential Equations & Special Functions

(w.e.f. the academic session 2019-20)

External Marks :25
Internal Marks: 10
Time: 3 hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit.
2. The **Compulsory Question No.1 of 05 marks** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 01 mark each) spread over the whole syllabus. Other question will carry the 05 marks each.

UNIT – I

Partial differential equations: Formation, order and degree, Linear and Non-Linear Partial differential equations of the first order: Complete solution, singular solution, General solution, Solution of Lagrange's linear equations, Charpit's general method of solution. Compatible systems of first order equations, Jacobi's method.

UNIT – II

Linear partial differential equations of second and higher orders, Linear and non-linear homogeneous and non-homogeneous equations with constant coefficients, Partial differential equation with variable coefficients reducible to equations with constant coefficients, their complimentary functions and particular integrals, Equations reducible to linear equations with constant coefficients. Method of separation of variables: Solution of Laplace's equation, Wave equation (one and two dimensions), Diffusion (Heat) equation (one and two dimension) in Cartesian Co-ordinate system.

UNIT – III

Classification of linear partial differential equations of second order, hyperbolic, parabolic and elliptic types, Reduction of second order linear partial differential equations to Canonical (Normal) forms and their solutions, Solution of linear hyperbolic equations, Monge's method for partial differential equations of second order, Cauchy's problem for second order partial differential equations, Characteristic equations and characteristic curves of second order partial differential equation.

UNIT – IV

Series solution of differential equations – Power series method. Bessel equation and its solution: Bessel functions and their properties-Convergence, recurrence, Relations and generating functions, Orthogonality of Bessel functions. Legendre differential equation and its solution: Legendre function and its properties-Recurrence Relations and generating functions. Orthogonality of Legendre polynomial. Rodrigues' Formula for Legendre Polynomial.

Guru Jambheshwar University of Science & Technology, Hisar

Mathematics

B.A. IInd Year 4th Semester

PAPER-B (THEORY) **BAMH- 205 : Functions Mechanics-I**

(w.e.f. the academic session 2019-20)

External Marks :25
Internal Marks: 10
Time: 3 hours

Note:

1. The question paper will consist of ***nine*** questions. The candidate shall attempt ***five*** questions in all. The Question No. 1 will be ***compulsory***. The Candidate shall attempt *four* more questions selecting at least *one* from each Unit.
2. The **Compulsory Question No.1 of 05 marks** will be short answer type questions containing ***ten*** questions of equal marks (i.e., 01 mark each) spread over the whole syllabus. Other question will carry the 05 marks each.

UNIT -I

Forces in two dimension (co-planner), triangle law and polygon law of forces, Lami's theorem, resultant of concurrent and coplanar forces, conditions of equilibrium of concurrent forces. Parallel forces: like parallel and unequal unlike parallel forces, resultant and centre of parallel forces; Moments and Couples.

UNIT -II

Forces in three dimensions, Poinsot'scentral axis, conditions for the reduction of a general system of forces in space to a single force, equations of central axis, Wrenches: Definition and basic laws, resultant wrench of two wrenches, locus of the central axis of two wrenches; Null lines and null planes.

UNIT –III

Velocity and acceleration along a plane curve, component of velocity and acceleration in radial, transverse, tangential and normal directions, Relative velocity and acceleration. Simple harmonic motion (SHM).

UNIT - IV

Newton's laws of motion, Central Orbits, differential equations of Central Orbits in polar form and in pedal form, areal velocity, elliptic, hyperbolic and parabolic orbit, velocity in a circle, apse and apsidal distances: definition and laws, velocity from infinity, Kepler's laws of planetary motion, equivalence of Kepler's laws of planetary motion and Newton's law of gravitation, motion under the inverse square law.

Guru Jambheshwar University of Science & Technology, Hisar

Mathematics

B.A. IInd Year 4th Semester

PAPER-B (PRACTICAL) **BAMH (P)- 206 :Mathematics Lab–IV**

(w.e.f. the academic session 2019-20)

External Marks :25

Internal Marks: 10

Time: 3 hours

Write down and execute the following programs using C-Programming Language

1. To solve the system of linear equations using Gauss -elimination method.
2. To solve the system of linear equations using Gauss -Seidal iteration method.
3. To solve the system of linear equation using Gauss –jordan method.
4. To find the largest eigen value of a matrix by Power -method.
5. To integrate numerically using Trapezoidal rule.
6. To integrate numerically using Simpson's one- third rule.
7. To integrate numerically using Simpson's three-eighth rule.
8. To find numerical solution of ordinary differential equations by Euler's method/ Modified Euler's method.
9. To find numerical solution of ordinary differential equations by Runge -Kutta method.

CML-506 (i): Groups and Rings

Marks (Theory): 80 **Marks (Total) : 100**
Marks (Internal Assessment) : 20 **Time : 3 Hrs**

Note: Attempt five questions in all. The question paper will consist of **four** sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory.** Each of the four sections (**I-IV**) will contain two questions and the students are required to attempt **one** question from each section. **All questions carry equal marks.**

Section – I

Definition of a group. Examples of abelian and nonabelian groups. The group Z_n of integers under addition modulo n and the group of $U(n)$ of units under multiplication modulo n. Generator of a group. Cyclic groups. Permutations groups. Alternating groups, Cayley's theorem. Subgroups and Subgroup criteria. Cosets, Left and right cosets, properties of cosets.

Section – II

Index of a sub-group. Coset decomposition, Lagrange's theorem on groups and its consequences, Normal subgroups, Quotient groups, Homomorphisms, isomorphisms, automorphisms on group. Center of a group and class equation of a group and derived group of a group.

Section – III

Introduction to Rings, Subrings, Integral domains and Fields, Characteristics of a ring. Ring homomorphisms, Theorems on Ring homomorphisms. Ideals (Principle, Prime and Maximal) and Quotient rings, Field of quotients of an integral domain.

Section – IV

Euclidean rings, Polynomial rings, Polynomials over the rational field, The Eisenstein's criterion of irreducibility of polynomials over the field of rational numbers. Polynomial rings over commutative rings. Principal ideal domain, Unique factorization domain.

Books Recommended:

1. I.N. Herstein, Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975
2. P.B. Bhattacharya, S.K. Jain and S.R. Nagpal, Basic Abstract Algebra (2^{nd} edition).
3. VivekSahai and VikasBist, Algebra, Narosa Publishing House.
4. I.S. Luther and I.B.S. Passi, Algebra, Vol.-II, Narosa Publishing House.

CML-506(ii): Sampling Techniques

Marks (Theory): 80 **Marks(Total) : 100**
Marks (Internal Assessment) : 20 **Time : 3 Hrs**

Note: Attempt five questions in all. The question paper will consist of **four** sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory.** Each of the four sections (**I-IV**) will contain two questions and the students are required to attempt **one** question from each section. **All questions carry equal marks.**

Section-I

Sample Surveys: Concepts of population, sample, sampling unit, parameter, statistic, sample frame and standard error. Principal steps in sample surveys - need for sampling, census versus sample surveys, sampling and non- sampling errors, sources and treatment of non-sampling errors, advantages and limitations of sampling. Sampling Methods: Types of sampling: Subjective, probability and mixed sampling methods. Methods of drawing random samples with and without replacement.

Section-II

Estimates of population mean, total, and proportion, their variances and the estimates of variances in Simple Random Sampling With and Without Replacement. Estimates of population mean, total, and proportion, their variances and the estimates of variances with (i) Stratified Random Sampling with Proportional and Neyman allocation, and (ii) Systematic Sampling when N= nk. Comparison of relative efficiencies. Advantages and disadvantages of SRS, Stratified and Systematic sampling methods.

Section-III

Time series: Time series and its components with illustrations, additive, multiplicative and mixed models. Determination of trend by least squares and moving average methods. Growth curves and their fitting with reference to Modified exponential, Gompertz and Logistic curves. Determination of seasonal indices by Ratio to moving average, ratio to trend and link relative methods.

Section-IV

Demand Analysis: Introduction. Demand and supply, price elasticity of supply and demand. Methods of determining demand and supply curves, Leontief's ,Pigous's methods of determining demand curve from time series data, limitations of these methods Pigou's method from time series data. Pareto law of income distribution curves of concentration. Index Numbers: Concept, construction, uses and limitations of simple and weighted index numbers. Laspeyer's, Paasche's and Fisher's index numbers, criterion of a good index numbers.

Recommended Books:

1. A.M.Goon, M.K.Gupta, B. Dasgupta: Fundamentals of Statistics Vol II World Press Private Ltd.,Calcutta
2. A.M.Goon,M.K.Gupta,B.Dasgupta An outline of Statistical Theory Vol II World Press Private Ltd.,Calcutta.
3. Cochran W.G., Sampling Techniques, Wiley Publishers
4. Daroga Singh and Chowdhary: Theory and Analysis of Sample survey designs. Wiley Eastern.
5. S.P.Gupta : Statistical Methods. Sultan Chand and Sons.
6. Sukhatmeet. al., Sample Theory of Surveys with Applications, Lowa State Uni. Press & IARS
7. V.K. Kapoor and S.C. Gupta: Fundamentals of Applied Statistics. Sultan Chand.

CML-507 (i): Sequence and Series

Marks (Theory): 80 **Marks (Total): 100**
Marks: Internal Assessment (20) **Time: 3 Hours**

Note:Attempt five questions in all. The question paper will consist of four sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be compulsory. Each of the four sections **(I-IV)** will contain two questions and the students are required to attempt one question from each section. All questions carry equal marks.

SECTION-I

Boundedness of the set of real numbers; least upper bound, greatest lower bound of a set, neighborhoods, interior points, isolated points, limit points, open sets, closed set, interior of a set, closure of a set in real numbers and their properties.

Sequence: Real sequences and their convergence, theorem on limits of sequence, bounded and monotonic sequences, Cauchy's sequence, Cauchy general principle of convergence, subsequences, subsequential limits.

SECTION-II

Infinite series: Convergence and divergence of Infinite Series, Comparison Tests of positive terms Infinite series, Cauchy's general principle of Convergence of series, Convergence and divergence of geometric series, Hyper Harmonic series or p-series. D-Alembert's ratio test, Raabe's test, Logarithmic test, De Morgan and Bertrand's test, Cauchy's nth root test, Gauss Test, Cauchy's integral test, Cauchy's condensation test.

Alternating series: Leibnitz's test, absolute and conditional convergence. Arbitrary series: Abel's lemma, Abel's test, Dirichlet's test.

SECTION-III

Fourier's series: Fourier expansion of piecewise monotonic functions, Properties of Fourier Co-efficients, Dirichlet's conditions, Parseval's identity for Fourier series, Fourier series for even and odd functions, Half range series, Change of Intervals.

SECTION-IV

Riemann integral: Definition and examples. Darboux's Theorem and condition of existence of Riemann's integral. Integrabililty of continuous, monotonic functions and discontinuous functions. Properties of integrable functions. Continuity and differentiability of integrable functions. Primitive. The Fundamental theorem of integral calculus. Mean value theorems of integral calculus.

Books Recommended

1. T.M.Apostol, Mathematical Analysis, Narosa Publishing House, New Delhi,1985.
2. R.R. Goldberg, Methods of Real Analysis, John Wiley and Sons, Inc., New York, 1976.
3. SC Malik and Savita Arora, Mathematical New Age International (P) Limited Published, New Delhi, 2012 (Fourth Edition).
4. D. Somasundaram and B. Choudhary: A First Course in Mathematical Analysis, Narosa Publishing House, New Delhi, 1997.
5. R.G. Bartle and D.R. Shernert: Introduction to Real Analysis, Wiley, 2011.
6. Shanti Narayan : A Course of Mathematical Analysis, S. Chand & Co., New Delhi

CML-507(ii): Sample Surveys and Design of Experiments

Marks (Theory): 80 **Marks (Total): 100**

Marks (Internal Assessment): 20 **Time : 3 Hrs**

Note:Attempt five questions in all. The question paper will consist of four sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be compulsory. Each of the four sections **(I-IV)** will contain two questions and the students are required to attempt one question from each section. **All questions carry equal marks.**

Section-I

Sample Surveys: Concepts of population and sample. Complete enumeration vs. sampling. Need for sampling. Principal and organizational aspects in the conduct of a sample survey. Properties of a good estimator, Sampling and non-sampling errors.

Section-II

SRSWR & SRSWOR, determination of sample size. Stratified random sampling and different allocations. Systematic sampling, comparison of known sampling strategies under linear trend. Ratio and Regression estimators and their comparison with SRSWOR estimator.

Section-III

Indian official Statistics: Present official Statistical system in India relatinig to census of population, agriculture, industrial production, and prices; methods of collection of official Statistics, Their reliability and limitation and the principal publications containing such Statistics. Also the various agencies responsible for the data collection- C.S.O., N.S.S.o., office of the Registrar General, Their historical development, main functions and important publications.

Analysis of variance and covariance: analysis of variance and covariance (with one concomitant variable) in one way and two way classified data with equal number of observations per cell.

Section-IV

Design of experiments: Principles of experimentation, uniformity trails, completely randomized, Randomized block and Latin square designs. Missing plot technique, 2^2 and 2^3 Factorial experiments: construction and analysis.

Regression Analysis: Two variable linear model- estimation, testing and problems of predication. Predication of the estimated regression equation, interval estimation, variance estimation.

Books Recommemded

1. W.G. Cochran, *Sampling Techniques,* John Wiley and Sons, New York, 1997.
2. A.M. Goon, M. K. Gupta and B. Dasgupta, *fundamentals of Statistics* (Vol.II), 8th Ed. World Press, Kolkata, 2005.
3. A.M. Goon, M. K. Gupta and B. Dasgupta, *An Outline of Statistical Theory* (Vol. II), 3rd Ed. World Press, Kolkata, 2005.
4. S.C. Gupta and V.K. Kapoor, *Fundamentals of Applied Statistics,* 4th Ed., Sultan Chand and Sons, 2008.
5. A. M. Kshirsagar, *A Course in Linear Models,* Marcel Dekker, Inc., N.Y., 1983.

CML-508(i): Number Theory & Trigonometry

Marks (Theory): 80 **Marks(Total) : 100**
Marks (Internal Assessment) : 20 **Time : 3 Hrs**

Note: Attempt five questions in all. The question paper will consist of **four** sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory.** Each of the four sections (**I-IV**) will contain two questions and the students are required to attempt **one** question from each section. **All questions carry equal marks.**

Section-I

Linear Diophantine equation, prime counting function, statement of prime number theorem, Goldbach conjecture, linear congruences, complete set of residues, Chinese remainder theorem, Fermat's little theorem, Wilson's theorem.

Section-II

Number theoretic functions, sum and number of divisors, totally multiplicative functions, the Möbius inversion formula, the greatest integer function, Euler's phi-function, Euler's theorem, reduced set of residues, some properties of Euler's phi-function.

Section-III

Order of an integer modulo n, primitive roots for primes, composite numbers having primitive roots, Euler's criterion, the Legendre symbol and its properties, quadratic reciprocity, quadratic congruences with composite moduli.

Section-IV

Exponential, Logarithmic, Circular functions; sin(nx), cos(nx), tan(nx), $\sin^n x$, $\cos^n x$, $\tan^n x$, hyperbolic and inverse hyperbolic functions - simple problems. Gregory's series, Summation of Trigonometric series, Trigonometric expansions of sine and cosine as infinite products (without proof).

Recommended Books:

1. David M. Burton, Elementary Number Theory (6th Edition), Tata McGraw-Hill Edition, Indian reprint, 2007.
2. Neville Robinns, Beginning Number Theory (2nd Edition), Narosa Publishing House Pvt. Limited, Delhi, 2007.
3. Trigonometry : P. Duraipandian
4. Plane Trigonometry part 2 : S. L. Loney, (Macmillan and Co. London)

CML-508(ii): Integer Programming and Theory of Games

Marks (Theory): 80 **Marks(Total) : 100**
Marks (Internal Assessment) : 20 **Time : 3 Hrs**

Note: Attempt five questions in all. The question paper will consist of **four** sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory.** Each of the four sections (**I-IV**) will contain two questions and the students are required to attempt **one** question from each section. **All questions carry equal marks.**

Section-I

Scope and applicability. Formulations. Combinatorial optimization. Relaxations. Linear programs with integer solutions. Integer Programming Problem (IPP): Pure and Mixed IPP, Methods for solving IPP: Branch and Bound Method, implicit enumeration,Gomory's Cutting Plane Method.

Section-II

Applications of IPP, 0-1 Programming: applications, enumeration algorithm. Gomory-Chvátal theory. The mixed integer Gomory cut. The problem of convergence and stalling. Disjunctive programming: optimization over unions of polyhedra.

Section-III

Introduction to Game theory, Fundamental theorem of game theory, min-max and max-min principle, Formulation of two person zero sum rectangular games, Solution of rectangular games with saddle, points.

Section-IV

Dominance principle, rectangular games without saddle point- mixed strategy, games, Bayesian Games, Extensive Form Games with Perfect Information. Graphical, algebraic and linear programming solution of m x n games.

Recommended Books:

1. Hamdy A. Taha: Operations Research-An Introduction, Prentice Hall, 9th Edition, -2010.
2. Frederick Hillier and Gerald Lieberman, Introduction to Operations Research. 9th Edition, McGraw-Hill Professional, 2010.
3. P. R. Thei, G. E. Keough: An introduction to Linear Programming and Game Theory. Wiley, New Jersey, 3rd Ed., 2008.
4. S. Chandra, Jayadeva, AparnaMehra: Numerical Optimization with Application, Narosa Publishing House, 2009

CML-605 (i): Linear Algebra

Marks (Theory): 80 **Marks(Total) : 100**
Marks (Internal Assessment) : 20 **Time : 3 Hrs**

Note: Attempt five questions in all. The question paper will consist of **four** sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory.** Each of the four sections (**I-IV**) will contain two questions and the students are required to attempt **one** question from each section. **All questions carry equal marks.**

Section – I

Vector spaces, subspaces, Sum and Direct sum of subspaces, Linear span, Linearly Independent and dependent subsets of a vector space. Finitely generated vector space, Existence theorem for basis of a finitely generated vactor space, Finite dimensional vector spaces, Invariance of the number of elements of bases sets, Dimensions, Quotient space and its dimension.

Section – II

Homomorphism and isomorphism of vector spaces, Linear transformations and linear forms on vactor spaces, Vactor space of all the linear transformations, Null Space, Range space of a linear transformation, Rank and Nullity Theorem,

Section – III

Algebra of Linear Transformation, Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations, Matrix of a linear Transformation, Change of basis, Eigen values and Eigen vectors of linear transformations.

Section – IV

Inner product spaces, Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthogonal sets and Basis, Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt, Orthogonalization process, Adjoint of a linear transformation and its properties, Unitary linear transformations.

Books Recommended:

1. I.N. Herstein,: Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975
2. P.B. Bhattacharya, S.K. Jain and S.R. Nagpal, Basic Abstract Algebra (2^{nd} edition).
3. VivekSahai and VikasBist, Algebra, Narosa Publishing House.
4. I.S. Luther and I.B.S. Passi, Algebra, Vol.-II, Narosa Publishing House.

CML 605(ii): Bio-Mathematics

Marks (Theory): 80 **Marks(Total) : 100**
Marks (Internal Assessment) : 20 **Time : 3 Hrs**

Note: Attempt five questions in all. The question paper will consist of **four** sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory.** Each of the four sections (**I-IV**) will contain two questions and the students are required to attempt **one** question from each section. **All questions carry equal marks.**

Section-I

Population growth, Administration of drugs, Cell division. Modelling Biological Phenomena: Heart beat, Blood Flow, Nerve Impulse transmission, Chemical Reactions, Predator-prey models. Stability and oscillations: Epidemics, the phase plane, Local Stability, Stability, Limit Cycles, Forced oscillations, Computing trajectories.

Section-II

Mathematics of Heart Physiology: The local model, The Threshold effect, The phase plane analysis and the heart beat model, Physiological considerations of the heart beat model, A model of the cardiac pace-maker. Bifurcation and chaos: Bifurcation, Bifurcation of a limit cycle, Discrete bifurcation, Chaos, Stability, The Poincare plane.

Section-III

Mathematics of imaging of the Brain: Modelling of computerized tomography (CT, Magnetic resonance Imaging (MRI), Discrete analogues and Numerical Implementation. Networks in Biological Sciences: Dynamics of Small world networks, scale-free networks, complex networks, cellular automata.

Section-IV

Modelling Molecular Evolution: Matrix models of base substitutions for DNA sequences, The Jukes-Cantor Model, the Kimura Models, Phylogenetic distances. Constructing Phylogenetic trees: Unweighted pair-group method with arithmetic means (UPGMA), Neighbour- Joining Method, Maximum Likelihood approaches.

Recommended Books:

1. Elizabeth S. Allman and John a. Rhodes, Mathematical Models in Biology, Cambridge University Press, 2004.
2. C. Epstein, The Mathematics of Medical Imaging, Prentice Hall, 2003 (copyright Pearson Education, 2005).
3. S. Helgason, The Radon transform, Second Edition, Birkhauser, 1997.
4. D. S. Jones and B. D. Sleeman, Differential Equations and Mathematical Biology, Cahapman& Hall, CRC Press, London, UK, 2003.
5. James Keener and James Sneyd, Mathematical Physiology, Springer Verlag, 1998, Corrected 2nd printing, 2001.

CML-606(i) Mechanics-II

Theory: 80 **Marks (Total): 100**
Marks (Internal Assessment): 20 **Time: 3 Hrs**

Note:Attempt five questions in all. The question paper will consist of four sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be compulsory. Each of the four sections **(I-IV)** will contain two questions and the students are required to attempt one question from each section. All questions carry equal marks.

Section - I

Analytical conditions of equilibrium of co-planar forces: Equilibrium of three forces, conditions of equilibrium, trigonometric theorem's, conditions of equilibrium of co-planar forces (First, Second and Third form); Friction: Definition of friction and basic laws, problems based on equilibrium of rods and ladders; Centre of gravity: Basic concepts and definitions, centre of gravity of a uniform rod, a thin uniform lamina in the form of a parallelogram, a thin uniform triangular lamina, three uniform rods forming a triangle, a uniform quadrilateral lamina, lamina in the form of a trapezium, centre of gravity of a body by integration.

Section - II

Motion of a particle attached to an elastic string, Hooke's law, motion of horizontal and vertical elastic strings, Definition of work, Power and Energy, work done by a variable force, work done in stretching an elastic string, principle of work and energy, conservative system of forces, principle of conservation of energy, impulse of a constant force and a variable force.

Section - III

Motion of a particle on smooth curves, motion on the outside and inside of a smooth vertical circle, cycloidal motion, motion on a rough curve under gravity.

Section - IV

Projectile motion of a particle in a plane, velocity at any point of the trajectory, directions of projection for a particle, range and time of flight on an inclined plane, directions of projection for a given velocity and a given range; range and time of fight down an inclined plane.

Books Recommended:

1. S.L. Loney: Statics, Macmillan Company, London.
2. R.S. Verma: A Text Book on Statics, Pothishala Pvt. Ltd., Allahabad
3. S.L. Loney, An Elementary Treatise on the Dynamics of a Particle and a Rigid Bodies, Cambridge University Press, 1956.
4. F. Chorlton, Dynamics, CBS Publishers, New Delhi.
5. A.S. Ramsey, Dynamics Part-1&2, CBS Publisher & Distributors.

CML-606(ii): Queuing and Reliability Theory

Marks (Theory): 80 **Marks(Total) : 100**
Marks (Internal Assessment) : 20 **Time : 3 Hrs**

Note: Attempt five questions in all. The question paper will consist of **four** sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory.** Each of the four sections (**I-IV**) will contain two questions and the students are required to attempt **one** question from each section. **All questions carry equal marks.**

Section-I

General concepts of queueing system and Introduction to stochastic processes, Measures of performance, Arrival and Service processes, Kendall's notation, Single server and multi server models. channels in parallel with limited and unlimited queues --M/M/1/K, M/M/C.

Section-II

Queues with unlimited service, Finite source queues, Applications of Simple Queuing Decision Models, Design and Control Models.

Reliability concepts – Systems of components. Series and parallel systems – Coherent structures and their representation in terms of paths and cuts, Modular decomposition.

Section-III

Reliability of coherent systems – Reliability of Independent components, association of random variables, bounds on systems reliability and improved bounds on system reliability under modular decomposition.

Section-IV

Life Distribution: Survival function – Notion of aging IFR, DFR, DFRA, NBU and NBUE classes, Exponential distributions and its no-ageing property, ageing properties of other common life distribution, closures under formation of coherent structures, convolutions and mixtures of theses cases. Reliability estimation: Estimation of two and three parameter Gamma, Weibull and log normal distributions.

Recommended Books:

1. D. Gross and C. Harris, Fundamentals of Queueing Theory, 3rd Edition, Wiley, 1998. (WSE Edition, 2004).
2. J. Medhi, Stochastic Models in Queueing Theory, 2nd Edition, Academic Press, 2003. (Elsevier India Edition, 2006).
3. John G. Rau, Optimization and Probability in Systems Engineering, V. N. Reinhold Co. 1970.
4. L. Kleinrock, Queueing Systems, Vol. 1: Theory, Wiley, 1975.
5. Marvin Rausand and ArnljotHoyland, System Reliability Theory: Models, Statistical Methods and Applications, 2" Ed. John Wiley and Sons Inc. 2003.
6. U N Bhatt: An Introduction to Queueing Theory: Modeling and Analysis in Applications (Statistics for Industry and Technology), Birkhauser Boston, 2008.

CML-607 (i): Real and Complex Analysis

Marks (Theory): 80 **Marks (Total): 100**
Marks: Internal Assessment (20) **Time : 3 Hours**

Note:Attempt five questions in all. The question paper will consist of four sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be compulsory. Each of the four sections **(I-IV)** will contain two questions and the students are required to attempt one question from each section. All questions carry equal marks.

SECTION-I

Definition and examples of metric spaces, neighborhoods, limit points, interior points, open and closed sets, closure and interior, boundary points, subspace of a metric space, equivalent metrics, Cauchy sequences, completeness, Cantor's intersection theorem.

SECTION-II

Baire's category theorem, Contraction Principle, continuous functions, uniform continuity, compactness for metric spaces, sequential compactness, Bolzano-Weierstrass Property, total boundedness, finite intersection property, continuity in relation with compactness, connectedness.

SECTION-III

Improper integrals and their convergence, comparison tests, Abel's and Dirichlet's tests, Frullani's integral, Integral as a function of a parameter. Continuity, differentiability and integrability of an integral of a function of a parameter.

SECTION-IV

Topology of complex numbers: Trigonometric, exponential, logarithmic and hyperbolic trigonometric functions. Extended complex plane, Stereographic projection of complex numbers. Continuity and differentiability of complex functions. Analytic functions, Cauchy-Riemann equations, harmonic conjugates, harmonic functions. Construction of analytic functions: direct method and Milne-Thomson method.

Books Recommended

1. T.M.Apostol, Mathematical Analysis, Narosa Publishing House, New Delhi,1985.
2. R.R. Goldberg, Methods of Real Analysis, John Wiley and Sons, Inc., New York, 1976.
3. D. Somasundaram and B. Choudhar: A First Course in Mathematical Analysis, Narosa Publishing House, New Delhi, 1997.
4. M.D. Raisinghania, Elements of Real Analysis, S.Chand Publication, 2003.
5. R.G. Bartle and D.R. Shernert: Introduction to Real Analysis, Wiley, 2011.
6. H.A. Priestly, Introduction to Complex Analysis, Clarendon Press, Oxford, 1990.
7. L.V. Ahlfors, Complex Analysis, McGraw-Hill, 1979.

CML-607(ii): Optimization Techniques

Marks (Theory): 80 **Marks (Total): 100**

Marks (Internal Assessment): 20 **Time : 3 Hrs**

Note: Attempt five questions in all. The question paper will consist of **four** sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory.** Each of the four sections (**I-IV**) will contain two questions and the students are required to attempt **one** question from each section. **All questions carry equal marks.**

Section-I

Dynamic programming: Multistage decision processes, Recursive nature of computations, Forward and Backward recursion, Bellman's principle of optimality, Selective dynamic programming applications involving additive and multiplicative separable returns for objectives as well as constraint functions, Problem of dimensionally.

Goal Programming: Weighted and pre-emptive goal programming, graphical solution.

Section-II

Decision Analysis: Decision making under risk- Decision tree analysis, Posterior (Baye's) probabilities, Decision under uncertainty- criterion of pessimism, criterion of optimism, Laplace criterion, criterion of realism, criterion of regret.

Section-III

General concepts of queueing system, Measures of performance, Arrival and service Processes, Single server and multi server models, channel in parallel with limited and unlimited queues- M/M/1/K, M/M/C. Queues with unlimited service. Finite source queues. Applications of simple queueing decision model's, Design and control models.

Section-IV

Basics of reliability. Classes of life distributions. Series, parallel configuration. Reliability models, Reliability, Mean time before failure and Hazard rate of Exponential and Weibull distributions. Concepts and definitions of preventive maintenance, corrective maintenance and age replacement.

Books Recommended

1. R.B. Cooper, *Introduction to Queueing Theory, 2nd*Ed., North Holland, 1981.
2. D. Gross, C.M. Harris, *Fundamentals of Queueing Theory,* 3rd Ed., John Wiley and Sons Inc. P. Ltd., 2002.
3. U.N. Prabhu, *Foundations of Queueing Theory,* International Series in Operations & Management Science, Kluwer Academic Publishers, 2nd Ed., 2002.
4. John G. Rau, *Optimization and Probability in Systems Engineering,* V.N. Reinhold Co., 1970.
5. Riccardo Manzini, Alberto Regattieri, Hoang Pham, Emilio Ferrai, *Maintenance for Industrial Systems,* Springer-Verlag, London Limited, 2010.
6. P.K. Kapur, R.B. Garg, S. Kumar, *contributions to Hardware and Software Reliability,* World Scientific, Singapore, 1999.

CMS-608(i): Solid Geometry

Marks (Theory): 50 **Marks(Total) : 100**
Marks (Internal Assessment) : 50 **Time : 2 Hrs**

Note: *The examiner is requested to set five questions in all, selecting two questions from each UNIT and one compulsory question (Question No.1 based on entire syllabus will consist of five short answer type questions each of two marks). The candidate is required to attempt three questions in all selecting one from each UNIT and the compulsory Question No.1. All questions carry equal marks.*

UNIT-I

Central Conicoids: Equation of tangent plane. Director sphere. Normal to the conicoids. Polar plane of a point. Enveloping cone of a coincoid. Enveloping cylinder of a coincoid.

UNIT-II

Paraboloids: Circular section, Plane sections of conicoids. Generating lines. Confocal conicoid. Reduction of second degree equations.

Books Recommended:

1. R.J.T. Bill, Elementary Treatise on Coordinary Geometry of Three Dimensions, MacMillan India Ltd. 1994.
2. P.K. Jain and Khalil Ahmad: A Textbook of Analytical Geometry of Three Dimensions, Wiley Eastern Ltd. 1999.

CMS-608(ii)

Skill Enhancement Course

Financial Mathematics

Credits: 02; 30 Hrs (2Hrs /week)

Marks (Theory): 50 **Marks (Total) : 100**
Marks (Internal Assessment) : 50 **Time : 2 Hrs**

Note: *The examiner is requested to set five questions in all, selecting two questions from each UNIT and one compulsory question (Question No.1 based on entire syllabus will consist of five short answer type questions each of two marks). The candidate is required to attempt three questions in all selecting one from each UNIT and the compulsory Question No.1.*

UNIT-I

Basic principles: Comparison, arbitrage and risk aversion, Interest (simple and compound, discrete and continuous), time value of money, inflation, net present value, internal rate of return (calculation by bisection and Newton-Raphson methods), comparison of NPV and IRR.

UNIT-II

Bonds, bond prices and yields, Macaulay and modified duration, term structure of interest rates: spot and forward rates, explanations of term structure, running present value, floating-rate bonds, immunization, convexity, putable and callable bonds.

Recommended Books:

1. David G. Luenberger, Investment Science, Oxford University Press, Delhi, 1998.
2. John C. Hull, Options, Futures and Other Derivatives (6th Edition), PrenticeHall India, Indian reprint, 2006.
3. Sheldon Ross, An Elementary Introduction to Mathematical Finance (2nd Edition), Cambridge University Press, USA, 2003

B.A. (PASS COURSE) PSYCHOLOGY SYLLABUS

B.A. (Semester-I) **INTRODUCTION TO PSYCHOLOGY**

Theory: 50
Internal Assessment: 20
Time: 3 hours

Note: - (i) The question paper will comprise nine questions. First question will be of short answer type consisting of five parts (2 marks each) to be set from the whole syllabus. This question would be compulsory.

(ii) Remaining eight questions (essay type) would be set unit-wise, two questions from each unit. The candidate has to attempt four questions, selecting at least one from each unit.

(iii) Each question carries 10 marks.

UNIT-I

Psychology: History, Emergence as Science, Subject Matter.

Methods of Psychology: Experimental, Observation, Survey.

UNIT-II

Sensory Proccesses: Visual, Auditory – Structure and Functions of Eye and Ear.

Perception: Nature, Perception of form – Figure and Ground, Perceptual Organization, Depth Perception–Cues.

UNIT-III

Emotion: Nature, Bodily Changes. Theories of Emotion: James-Lange, Cannon-Bard and Schachter–Singer.

Motivation: Nature, Biological and Psychological Motives.

UNIT-IV

Personality: Nature, Determinants of Personality, Type and Trait Approach.

Intelligence: Nature, Theories: Spearman, Thurstone, and Cattell.

References:

Atkinson, R.L., Atkinson, R.L, et al. (1985) ***Introduction to Psychology***. N. Y.: HBJ Publishers.

Singh, A.K. (2009) ***Uchattar Samanaya Manovigyan***. Delhi: Moti Lal Banarsidas.

Singh, A. & Singh, U. (1984). ***Prayogatamak Manovigyan***. Bhiwani: Vedic Prakashan.

Singh, R. & Shyam, R. (2008) ***Adhunik Sangyanatmak Manovigyan.*** Panchkula: Haryana Sahitya Akadami.

B.A. (Semester-I) **PRACTICAL**

M.Marks : 30
Time : 3 hrs.

1. EPQ/EPI

2. Retinal color zones/Color Blindness
3. Sound Localization
4. Study of emotions. ✓
5. Simple reaction time
6. Verbal Test of Intelligence. ✓
7. Performance Test of Intelligence/RPM. ✓
8. Observation (Speed & accuracy) ✓
9. Experiment on form perception/Depth Perception
10. Test of Motivation. ✓

1 st

Note: Students are to conduct and report at least 6(six) practicals.
The examiner will allot one practical at the time of examination.

B.A. (Semester-II) **EXPERIMENTAL PSYCHOLOGY**

Theory: 50
Internal Assessment: 20
Time: 3 hours

Note: - (i) The question paper will comprise nine questions. First question will be of short answer type consisting of five parts (2 marks each) set from the whole syllabus. This question would be compulsory.

(ii) Remaining eight questions (essay type) would be set unit-wise, two questions from each unit. The candidate has to attempt four questions, selecting at least one from each unit.

(iii) Each question carries 10 marks.

UNIT-I

Attention: Nature, Characteristics, and Types.
Psychophysics: Problems of Psychophysics and Methods (Classical).

UNIT-II

Learning: Definition, Factors affecting, Trial and Error Learning, Insight Learning, Classical and Operant Conditioning.

UNIT-III

Memory: Definition, Stages, STM and LTM – Methods to Study Memory.

Forgetting: Factors Leading to Forgetting, Pneomonics.

UNIT-IV

Problem Solving: Stages of Problem Solving, Convergent and Divergent thinking.

Statistics: Frequency Distribution, Graphical Presentation of Data, Measures of Central Tendencies.

References:

Atkinson, R.L., Atkinson, R.L, et al. (1985) ***Introduction to Psychology***. N. Y.: HBJ Publishers.

D' Amato, M.R. (2001) ***Experimental Psychology: Methodology, Psychophysics and Learning.*** New Delhi: McGraw Hill.

Singh, A.K. (2009) ***Uchattar Samanaya Manovigyan***. Delhi: Moti Lal Banarsidas.

Singh, A. & Singh, U. (1984). ***Prayogatamak Manovigyan***. Bhiwani: Vedic Prakashan.

Singh, R. & Shyam, R. (2008) ***Adhunik Sangyanatmak Manovigyan.*** Panchkula: Haryana Sahitya Akadami.

B.A. (Semester-II) **PRACTICAL**

M.Marks : 30
Time : 3 hrs.

1. Serial Position Effect.
2. Experiment on STM
3. Experiment on LTM
4. Retroactive Inhibition
5. AL by method of contstant stimuli
6. DL by method of limits.
7. Muller-Lyre Illusion
8. Problem Solving
9. Bilateral Transfer of Training/ Maze Learning
10. Span of Attention.

Note: Students are to conduct and report at least 6 (six) practicals.
The examiner will allot one practical at the time of examination.

B.A. (Semester-III) **SOCIAL PSYCHOLOGY**

Theory: 50
Internal Assessment: 20
Time: 3 hours

Note: - (i) The question paper will comprise nine questions. First question will be of short answer type consisting of five parts (2 marks each) set from the whole syllabus. This question would be compulsory.

(ii) Remaining eight questions (essay type) would be set unit-wise, two questions from each unit. The candidate has to attempt four questions, selecting at least one from each unit.

(iii) Each question carries 10 marks.

UNIT-I

Introduction: Nature, Subject Matter, Sociometric Method.

Socialization: Nature, Process and Agents of Socialization.

UNIT-II

Group: Types and Functions; Social Norms: Meaning, Characteristics and Formation.

Leadership: Types, Function, Theories– Trait, Situational, and Interactional.

UNIT-III

Attitudes: Characteristics, Development and Attitude change.
Prejudice: Nature, Development and Stereotypes.

UNIT-IV

Prosocial Behaviour: Nature, Determinants ,Cognitive Model.
Aggression: Nature, Determinants and Prevention.

References:

Baron, R.A. and Byrne, D. (2008) ***Samajik Manovigyan (Hindi Sanskaran)***. Delhi: Pearson.

Chaube S.P. (1985) ***Social Psychology***. Agra: Educational Publishers.

Perlman, D. and Cozbty, P.C. (1983). ***Social Psychology***. New York: CBS College Publishing.

Rai, B.C. (1989) ***Social Psychology***. Delhi: Sultan Pub.

Singh, A.K. (2009). ***Samaj Manovigyan ki Rooprekha*** . Delhi: Moti Lal Banarsidas.

B.A. (Semester-III) PRACTICAL M.Marks : 30
Time : 3 hrs.

1. Sociometry
2. Measurement of Attitude ✓
3. Altruism Scale ✓
4. Stereotypes ✓
5. Anger Expression/Aggression Scale ✓
6. Prejudice Scale ✓
7. Leadership Styles ✓
8. Social Facilitation ✓
9. Rosenwig's P.F. Test/Norm formation ✓
10. Social Conformity ✓

3rd

Note: Students are to conduct and report at least 6(six) practicals.
The examiner will allot one practical at the time of examination.

B.A. (Semester-IV) **DEVELOPMENTAL PSYCHOLOGY**

Theory: 50
Internal Assessment: 20
Time: 3 hours

Note: - (i) The question paper will comprise nine questions. First question will be of short answer type consisting of five parts (2 marks each) set from the whole syllabus. This question would be compulsory.

(ii) Remaining eight questions (essay type) would be set unit-wise, two questions from each unit. The candidate has to attempt four questions, selecting at least one from each unit.

(iii) Each question carries 10 marks.

UNIT-I

Human Development; Concept and Principles

Factors in Human Development; Biological, Social and Cultural

UNIT-II

Prenatal Development, Determinants and Stages.

Infancy: Characteristics, Hazards and Adjustment.

UNIT-III

Childhood: Characteristics, Perceptual, Motor, Emotional, Cognitive Development.

Adoloscents: Characteristics and Problems of Adoloscents and Adjustment.

UNIT-IV

Adulthood: Early Adulthood, Late adulthood and Aging-Changing Patterns and Problems.

Measures of Variability: Quartile Deviation, Standard Deviation.

References:

Berk, L.E. (2004). ***Development Through the Life Span.*** Delhi: Pearson Education.

Hurlock, E.B. (2001) ***Developmental Psychology: A life-span approach***. New Delhi: Tata McGraw Hill.

Lal, J.N., & Srivasstava, A. (2001) ***Modern Developmental Psychology***. Agra: Vinod Pustak Bhandar.

Sheffer, D.R. & Katherine, K. (2007). ***Developmental Psychology: Childhood And Adolescence*** NewYork: Thomson Wadsworth.

Santrock, J.W. (1997). ***Life Span Development.*** Dubuque: Brown and Benchmark.

Singh, R. & Shyam, R. (2008) ***Comprehensive Statistics for Behavioural Sciences (in Hindi).*** Sanjay Prakashan, Delhi.

B.A. (Semester-IV) **PRACTICAL**

M.Marks : 30
Time : 3 hrs.

1. Cognitive Development

4.8th

2. Emotional Maturity Scale ✓
3. Parent-Child Relationship ✓
4. Self Concept
5. Youth Problem Inventory ✓
6. Self Esteem Inventory ✓
7. Study of values
8. Family Environment Inventory ✓
9. Impulsiveness Scale ✓
10. Case Study

Note: Students are to conduct and report at least 6(six) practicals. The examiner will allot one practical at the time of examination.

B.A. (Semester-V) **PSYCHOPATHOLOGY**

Theory: 50
Internal Assessment: 20
Time: 3 hours

Note: - (i) The question paper will comprise nine questions. First question will be of short answer type consisting of five parts (2 marks each) set from the whole syllabus. This question would be compulsory.

(ii) Remaining eight questions (essay type) would be set unit-wise, two questions from each unit. The candidate has to attempt four questions, selecting at least one from each unit.

(iii) Each question carries 10 marks.

UNIT-I

Concept of Normality and aAbnormality.

Models of Psychopathology: Biological, Psychodynamic, Behavioural, and Cognitive.

UNIT-II

Classification of Psychopathology: Need for Classification, DSM System.

Diagnostic Assessment: Case History, Interview, Projective Techniques.

UNIT-III

Anxiety Based Disorders: GAD, OCD, and Phobic Disorders-Symptom and Causes.

Substance/Drug Abuse – Causes, Consequences and Rehabilitation.

UNIT-IV

Mood Disorders: Unipolar and Bipolar-Symptoms and Causes.

Schizophrenia: Nature, Types, and Causes.

References:

Anand, V. and Srivastva, R. (2003). ***Manovikriti Vigyan***, Delhi: Moti Lal Banarsi Das.

Carson, R.C.; Butcher, J.N., et al. (2007). ***Abnormal Psychology.*** (13th Ed.) New Delhi: Pearson Education.

Davison, G.C. & Neale, J.M. (1998). ***Abnormal Psychology*** (7th Ed.) New York: Willy.

Sarason, I.G. and Sarason, B.R. (2005). ***Abnormal Psychology: The Problem of Maladaptive Behaviour*** (10th Ed.) New Delhi: Pearson Education Inc.

Singh, A.K. (2006). ***Adhunik Asamanya Manovigyan***, Delhi: Moti Lal Banarasi Das.

Srivastava, D.N. (1991) ***Adhunik Asamnya Manovigyan*** (6th Ed.) Agra: Sahitya.

B.A. Psychology (Pass Course) 5th Semester
PSY (P) – 301: Practical

Maximum Marks: 30

Time: 3 Hours

1. Clinical Interview
2. CAQ
3. TAT
4. WAT
5. Depression Inventory
6. Anxiety Scale
7. WAIS
8. Emotional Intelligence
9. PGI Memory Scale
10. DMI

Note: Students are to conduct and report at least 6(six) practicals. The examiner will allot one practical at the time of examination.

B.A. (Semester-VI) **APPLIED PSYCHOLOGY**

Theory: 50
Internal Assessment: 20
Time: 3 hours

Note: - (i) The question paper will comprise nine questions. First question will be of short answer type consisting of five parts (2 marks each) set from the whole syllabus. This question would be compulsory.

(ii) Remaining eight questions (essay type) would be set unit-wise, two questions from each unit. The candidate has to attempt four questions, selecting at least one from each unit.

(iii) Each question carries 10 marks.

UNIT-I

Applied Psychology: Meaning, History, Fields, and Careers in Psychology.

Organizational Psychology: Nature, Scope, Objectives, and Development.

UNIT-II

Guidance: Objectives, Principles, Types of Guidance, Organization of Guidance Programme.

Counselling: Need, Principles, Special Areas, and Types of Counselling.

UNIT-III

Health Psychology: Meaning, Scope and Objectives; Concept of Health and Illness.

Psychological Factors in Physical Illness, Life Style and Health, Stress and Coping.

UNIT-IV

Forensic Psychology: Psychology and Law, Eyewitness Memory; Accuracy and Improvement.

Statistics: Correlation- Meaning, Rank Difference, and Product Moment Method.

References: -

Annastasi, A (1979) ***Fields of Applied Psychology*** (2nd ed.) U.S.A.: McGraw. Hill.

Garrett, H.E. (2005) ***Statistics in Psychology and Education***. Delhi: Paragon Ind. Pub.

Goldstem, A.P.; Krasner, L. (1989) ***Modern Applied Psychology***. New York: Pergamon Press.

Rao, S.N. (2004). ***Guidance and Counselling***. New Delhi: Discovery Publishing House.

Taylor, S.E. (2006) ***Health Psychology*** (6th ed.) Delhi: Tata McGraw Hill.

Verma, R.S., Singh, S., & Sharma, D. (1982). ***Vayavaharik Manovigyan.*** Agra: Vinod Pustak Mandir.

B.A. (Semester-VI) **PRACTICAL**

M.Marks: 30
Time: 3 hrs.

1. Stress Scale
2. Coping Styles/Wellbeing Scale

B.A.-3 Psychology (Pass Course) 6th Semester
PSY (P) – 302: Practical

Maximum Marks: 30

Time: 3 Hours

1. Stress Scale
2. Coping Styles/Wellbeing Scale
3. General Health Questionnaire
4. Life Style Schedule
5. Aptitude Scale
6. Interest Inventory
7. Job Satisfaction
8. Counselling Need Inventory
9. Job Stress Scale
10. Healthiness Scale/Adjustment Inventory

Note: Students are to conduct and report at least 6(six) practicals. The examiner will allot one practical at the time of examination.