



PANJAB UNIVERSITY, CHANDIGARH-160014 (INDIA)
(Estd. under the Panjab University Act VII of 1947—enacted by the Govt. of India)

SYLLABI

FOR

B.A./B.Sc. (Honours) Course
SECOND YEAR
(SEMESTER : THIRD AND FOURTH)
Examination, 2017-2018

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OUTLINES OF TESTS, SYLLABI AND COURSES OF READING IN VARIOUS SUBJECTS FOR B.A./B.Sc. (HONOURS) SECOND YEAR (SEMESTER SYSTEM) i.e. THIRD SEMESTER NOVEMBER/DECEMBER 2017 AND FOURTH SEMESTER APRIL/MAY 2018, EXAMINATIONS.

ENGLISH

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER -III

16th and 17th Century Literature

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Texts :

1. William Shakespeare *Othello*
2. Francis Bacon
 - (i) *Of Friendship.*
 - (ii) *Of Studies.*
3. John Donne
 - (i) *The Sun Rising.*
 - (ii) *The Canonization.*
 - (iii) *The Relique.*
 - (iv) *Hymn to God, The Father.*
4. John Milton
The following poems :
 - (i) *Of Man's First Disobedience.*
 - (ii) *On the Morning of Christ's Nativity.*
 - (iii) *On his blindness.*

Testing :

There will be **two Units-**

Unit I will consist of two compulsory questions.

Unit II will consist of four questions (with internal choice). The students will attempt any three.

Unit I

There will be one question on the literary movement of 16th & 17th Century with internal choice.

(15 marks)

There will be one question with reference to the context. Two passages will be set from each writer with internal choice at Serial No. 1, 3 and 4. Students will attempt one passage from each writer.

(15 Marks)

Unit II

Two essay type questions with internal choice on each of the four writers' texts will be set. Students will attempt three questions from three different writers.

(20 × 3 = 60 marks)

बी .ए.(संस्कृत आनर्स) द्वितीय वर्ष परीक्षा 2017-18

SEMESTER-III

प्रथम पत्र :

पूर्णांक : 90+10=100 अंक

(आन्तरिक परीक्षा- 10 लिखित परीक्षा- 90)

समय-3 घण्टे

उद्देश्य:- उपनिषद् तथा नीति साहित्य द्वारा प्रतिपादित शाश्वत जीवन मूल्यों से छात्र को अवगत कराना तथा व्याकरण की संज्ञाओं का बोध कराना।

UNIT-I

(क) केनोपनिषद् (मन्त्र व्याख्या पाँच में से तीन - $3 \times 10=30$ अंक व समीक्षात्मक प्रश्न दो में से एक प्रश्न - $1 \times 9=9$ अंक) 39अंक

UNIT-II

(ख) नीतिशतकम्

(श्लोक 51 से अन्त तक) (श्लोक व्याख्या पाँच में से तीन - $3 \times 10=30$ अंक व सूक्ति व्याख्या तीन में से एक - $1 \times 9=9$ अंक) 39अंक

UNIT-III

(ग)संज्ञा प्रकरण (लघुसिद्धान्तकौमुदी) (6 में से 3 सूत्रार्थ) $3 \times 4=12$ अंक

12अंक

नोट - पत्र का अध्यापन समय नौ पीरियड (प्रति घण्टा) प्रति सप्ताह होगा।

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बी .ए.(संस्कृत आनर्स) द्वितीय वर्ष परीक्षा 2017-18

SEMESTER-IV

द्वितीय पत्र :

पूर्णांक : 90+10=100 अंक

(आन्तरिक परीक्षा- 10

लिखित परीक्षा- 90)

समय-3 घण्टे

उद्देश्य:- विद्यार्थियों को संस्कृत नाट्य साहित्य के प्रमुख नाटककार भास अथवा कालिदास के समय, जीवनचक्र, काव्यसौन्दर्य, प्रकृतिचित्रण, प्रेम एवं सौन्दर्य-बोध, नाट्य-कला, पात्र-चरित्रचित्रण इत्यादि विषयों के विस्तृत अध्ययन के लिए प्रेरित करना।

(इस पत्र में छात्र विकल्प - I या विकल्प - II ग्रहण करेगा)।

विकल्प - I

:

भास

पूर्णांक - 90+10=100अंक

(आन्तरिक परीक्षा- 10

लिखित परीक्षा- 90)

समय-3 घण्टे

UNIT-I

(क) भास

2x15= 30 अंक

भास का काल, काव्य-सौन्दर्य, प्रकृति-चित्रण, प्रेम एवं सौन्दर्य, नाट्य-कला 'स्वप्नवासवदत्तम्' के पात्रों का चरित्र चित्रण

UNIT-II

(ख) स्वप्नवासवदत्तम्

60 अंक

(i) सप्रसङ्ग श्लोक अनुवाद (छह में से चार)

4x10=40 अंक

(ii) सूक्ति व्याख्या (तीन में से दो)

2x10=20 अंक

अथवा

विकल्प - II

:

कालिदास

पूर्णांक - 90+10=100अंक

(आन्तरिक परीक्षा- 10

लिखित परीक्षा- 90)

समय-3 घण्टे

UNIT-I

(क) कालिदास

2x15=30 अंक

कालिदास का काल, काव्य-सौन्दर्य, प्रकृति-चित्रण, प्रेम एवं सौन्दर्य, नाट्य-कला 'स्वप्नवासवदत्तम्' के पात्रों का चरित्र चित्रण

UNIT-II

(ख)अभिज्ञान- शाकुन्तलम्

60 अंक

(i) सप्रसङ्ग श्लोक अनुवाद (छह में से चार)

4x10=40 अंक

(ii) सूक्ति व्याख्या (तीन में से दो)

2x10=20 अंक

नोट - पत्र का अध्यापन समय नौ पीरियड (प्रति घण्टा) प्रति सप्ताह होगा।

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URDU

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER -III

Theory : 90 marks
Internal Assessment : 10 marks
Time : 3 Hrs.

PAPER I : Poetry and Prose

Unit – I

Diwan-e-Ghalib Radif Alif : 30 Marks
Explanation (Tashrih of first 30 Ghazaliyat)

Unit – II

Critical notes on Ghalib ki Qasida Nigari 15 Marks

Unit – III

Mirza Ghalib ki Khutut Nigari ki Khususiyat 30 Marks

Unit -IV

Mirza Ghalib ki Hayat aur Karname 15 Marks

Books Recommended:

1. Zikr-e-Ghalib, by Malik Ram, Tamal Printing Press, 1976.
2. Afkar-e-Ghalib, by Dr. Khalifa Abdur Rehman, 1973.
3. Ghalib Ki Maktoob Nigari, by Prof. Nazir Ahmad

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URDU
SEMESTER -IV

Theory : 90 marks
Internal Assessment : 10 marks
Time : 3 Hrs.

PAPER II : Essay (Literary)

Unit – I

Fort William College Ki Adabi Khidmat 25 Marks

Unit – II

Urdu Zaban ki Ibtida aur Irtiqa 20 Marks

Unit – III

Dabistan Lucknow ki Khusiyat 20 Marks

Unit -IV

Dabistan Delhi ki Khusiyat 25 Marks

Books Recommended:

1. Urdu Adab Ki Tarikh, by Azeem-ul-Haq Junedi.
2. Tareekh-e-Adab-e-Urdu, by Prof. Noor-ul-Hasan Naqvi.

PERSIAN

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER -III

Paper : I

Marks : 100

Time : 3 Hrs.

History of Persian Literature

i) Ghaznavid Period

Books Recommended :

1. Literary History of Persia by Dr. E.G. Brown Part II.
2. She `ul` - Ajam by Shibli Part I, II & III.

PERSIAN**B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18****SEMESTER -IV****Paper : II****Marks : 100****Time : 3 Hrs.**

History of Persian Literature

1. Ereteqaye Zaban-o-Adabiyat-e-Farsi be Ahde Moghal dar Hind.

Books Recommended :

1. Literary History of Persia by Dr. E.G. Brown Part II.
2. She `ul` - Ajam by Shibli Part I, II & III.

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ARABIC**B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18****(KEPT IN ABEYANCE)**

FRENCH**B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18****SEMESTER-III****3rd Semester : APPLIED GRAMMAR AND DRAMA**

Max. Marks	: 100
Theory	: 90 marks
Internal Assessment	: 10 marks
Time	: 3 Hours

a)Drama

Comprehension, explanation and literary appreciation of the prescribed textbook. 50 Marks

Courses of Reading :

Molière , Le Bourgeois Gentilhomme—(Edition Bordas).

Grammar :

40 Marks

1. Applied Grammer . 15 Marks
2. Essay in French, subject or theme to be taken from the given text. 10 Marks
3. Precis or analysis of a given text. 15 Marks

N.B. 1. The latest syllabus will be followed and question paper should be of B.A.II (Hons.) level.

2. Choice in questions should be given.

For the information of private candidates:

1. The theory paper would be proportionately marked out of 100 as there is no internal assessment.

FRENCH
B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18
SEMESTER-IV

4th Semester : PROSE, APPLIED GRAMMAR & VIVA-VOCE

Max. Marks	: 100
Theory	: 60 marks
Internal Assessment	: 10 marks
Time	: 3 Hours

Applied Grammar: 25 Marks

Prose : 35 Marks

La Symphonie Pastorale, André Gide,
 Comprehension, explanation and literary appreciation of the prescribed text.

Courses of Reading :

La Symphonie Pastorale, André Gide, (Edition Bordas) ou Nouveaux Classiques Larousse.

La Grammaire pour bien écrire, Bescherelle, Hatier, 1987.

Viva-Voce : 30 Marks

- | | |
|--|----------|
| (a) Dictation of an unseen passage of about 200 words based on the Vocabulary and grammar covered upto B.A.II. | 10 Marks |
| (b) Oral questions and answers on a given text (unseen). | 10 Marks |
| (c) General questions and reading. | 10 Marks |

- N.B. : 1. All unseen passages shall be based on the vocabulary and grammar covered till the end of 3rd and 4th Semester courses.
 2. All questions are to be asked and answered in French.
 3. The latest syllabus must be followed.
 4. Choice in questions must be given.
 5. Question paper will be set according to B.A.II (Hons.) level.

For the information of private candidate :

1. Viva is compulsory.
 2. The theory paper would be marked proportionately out of 70 as there is no internal assessment.
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HINDI

बी.ए. (आनर्स) 2017-18 (द्वितीय वर्ष)

सेमेस्टर-तीन

पूर्णांक : 90+10=100

समय : 3 घण्टे

1. कवितावली : तुलसीदास (केवल सुन्दरकाण्ड)
 (क) दोनों काव्यकृतियों में से 12-12 अंकों की 4 व्याख्याएँ पूछी जाएँगी जिनमें से 2 व्याख्याएँ करनी होंगी। सन्दर्भ सहित व्याख्या के साथ-साथ काव्य-सौन्दर्य भी स्पष्ट करना होगा। अंक-24
- (ख) दोनों काव्य कृतियों में से 6 समीक्षात्मक प्रश्न पूछे जाएँगे जिनमें से 18-18 अंकों के तीन प्रश्न करने होंगे। अंक-54
 विशेष : प्रत्येक काव्य कृति में से एक प्रश्न करना अनिवार्य होगा।
3. राष्ट्रीय भाषा हिन्दी : स्वरूप एवं महत्त्व अंक-12
4. आंतरिक मूल्यांकन अंक : 10

HINDI**बी.ए. (आनर्स) 2017-18****सेमेस्टर-चार****पूर्णांक : 90+10= 100****समय : 3 घण्टे****1. लहर : जयशंकर प्रसाद**

क) लहर में से 12-12 अंकों की 2 व्याख्याएँ पूछी जाएँगी जिनमें से एक पद्यांश की सप्रसंग व्याख्या करनी होगी।

अंक-12

काव्य-सौन्दर्य भी स्पष्ट करना होगा।

ख) लहर काव्य कृति में से दो समीक्षात्मक प्रश्न पूछे जाएँगे। जिनमें से 16 अंक का एक प्रश्न करना होगा।

अंक-16**2. अंग्रेजी से हिन्दी अनुवाद****अंक-20****3. निबन्ध लेखन****अंक-10****4. टिप्पण तथा प्रारूपण सम्बन्धी नियमों का सामान्य ज्ञान****अंक-10****5. जन संचार-रेडियो, दूरदर्शन एवं समाचार पत्रों के लिए लेखन की विशिष्ट विधि****अंक-10****6. हिन्दी के उपसर्ग-प्रत्यय अर्थ व प्रयोग तथा शब्द शोध****अंक-12****आन्तरिक मूल्यांकन****अंक-10**

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ਪੰਜਾਬੀ
ਬੀ ਏ (ਆਨਰਜ਼) ਭਾਗ ਦੂਜਾ (2017-18) ਦੇ ਇਮਤਿਹਾਨ ਲਈ
ਦਸੰਬਰ 2017 ਦੇ ਇਮਤਿਹਾਨ ਲਈ

ਪਾਠਕ੍ਰਮ ਅਤੇ ਕੋਰਸ
ਪੇਪਰ - I

ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਸਾਹਿਤ

ਕੁੱਲ ਅੰਕ : 50
ਪ੍ਰਾਪਤ ਅੰਕ : 45

05 Internal Assessment
Time : 3 Hours

ਭਾਗ ਪਹਿਲਾ

ਆਧੁਨਿਕਤਾ, ਆਧੁਨਿਕ ਸੰਵੇਦਨਾ, ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਸਾਹਿਤ

1. ਆਧੁਨਿਕਤਾ : ਪਰਿਭਾਸ਼ਾ ਤੇ ਸਰੂਪ
2. ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਸੰਵੇਦਨਾ : ਪ੍ਰਕਿਰਤੀ ਅਤੇ ਲੱਛਣ
3. ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਪ੍ਰਮੁੱਖ ਝੁਕਾਅ : ਪ੍ਰਗਤੀਵਾਦੀ, ਪ੍ਰਯੋਗਸ਼ੀਲ
(ਤਿੰਨਾਂ ਵਿਚੋਂ ਦੋ) (ਅੰਕ : 20)

ਭਾਗ ਦੂਜਾ

ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਪ੍ਰਮੁੱਖ ਰੂਪਾਕਾਰ

ਪੰਜਾਬੀ ਨਾਵਲ, ਕਵਿਤਾ, ਕਹਾਣੀ, ਸਵੈ-ਜੀਵਨੀ, ਨਾਟਕ
(ਦੋ ਵਿਚੋਂ ਇਕ) (ਅੰਕ : 10)

ਭਾਗ ਤੀਜਾ

ਮੇਰੀ ਚੋਣਵੀਂ ਕਵਿਤਾ : ਪ੍ਰੋ ਮੋਹਨ ਸਿੰਘ
ਆਰਸੀ ਪਬਲੀਕੇਸ਼ਨ, ਦਿੱਲੀ

(ਵਿਸ਼ਾ- ਵਸਤੂ, ਕਾਵਿ-ਜੁਗਤਾਂ, ਕਾਵਿ-ਭਾਸ਼ਾ, ਕਾਵਿ-ਕਲਾ ਬਾਰੇ ਸਵਾਲ ਪੁੱਛੇ ਜਾਣਗੇ
(ਤਿੰਨਾਂ ਵਿਚੋਂ ਦੋ) (ਅੰਕ : 15)

ਪੰਜਾਬੀ
B.A. II (SEMESTER III) ਆਨਰਜ਼
ਪਾਠਕ੍ਰਮ ਅਤੇ ਕੋਰਸ
ਪੇਪਰ - II

ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਸਾਹਿਤ

ਕੁੱਲ ਅੰਕ : 50

05 Internal Assessment

ਪ੍ਰਾਪਤ ਅੰਕ : 45

Time : 3 Hours

ਭਾਗ ਪਹਿਲਾ

1. ਮੱਧਕਾਲ - ਪਰਿਭਾਸ਼ਾ ਤੇ ਸਰੂਪ
2. ਮੱਧਕਾਲੀ ਸੰਵੇਦਨਾ ਤੇ ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਸਾਹਿਤ
3. ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਪ੍ਰਮੁੱਖ ਝੁਕਾਅ : ਗੁਰਮਤਿ ਕਾਵਿ, ਸੂਫੀ ਕਾਵਿ
(ਤਿੰਨਾਂ ਵਿਚੋਂ ਦੋ)

(ਅੰਕ : 20)

ਭਾਗ ਦੂਜਾ

ਵਾਰ ਤੇ ਜੰਗਨਾਮਾ, ਜਨਮਸਾਖੀ, ਕਾਫੀ, ਬਾਰੂਮਾਂਹ
(ਦੋ ਵਿਚੋਂ ਇਕ)

(ਅੰਕ : 10)

ਭਾਗ ਤੀਜਾ

ਪੂਰਨ ਭਗਤ : ਕਾਦਰਯਾਰ
(ਵਿਸ਼ਾ-ਵਸਤੂ, ਕਾਵਿ-ਜੁਗਤਾਂ, ਕਾਵਿਸਭਾਸ਼ਾ, ਕਾਵਿ-ਕਲਾ ਬਾਰੇ ਸਵਾਲ ਪੁੱਛੇ ਜਾਣਗੇ)
(ਤਿੰਨਾਂ ਵਿਚੋਂ ਦੋ)

(ਅੰਕ : 15)

B.A. II (SEMESTER IV) ਆਨਰਜ਼
ਅਪ੍ਰੈਲ / ਮਈ 2017 ਦੇ ਇਮਤਿਹਾਨ ਲਈ
ਪਾਠਕ੍ਰਮ ਅਤੇ ਕੋਰਸ
ਪੇਪਰ -III
ਪੰਜਾਬੀ ਸੰਵੇਦਨਾ ਦਾ ਸਾਹਿਤ

ਕੁੱਲ ਅੰਕ : 50
 ਪ੍ਰਾਪਤ ਅੰਕ : 45

05 Internal Assessment
 Time : 3 Hours

ਭਾਗ ਪਹਿਲਾ

1. ਪੰਜਾਬੀ ਸੰਵੇਦਨਾ : ਪਰਿਭਾਸ਼ਾ ਤੇ ਸਰੂਪ
2. ਪੰਜਾਬੀ ਸੰਵੇਦਨਾ ਦਾ ਸਾਹਿਤ
3. ਪੰਜਾਬ ਦਾ ਬਟਵਾਰਾ : ਕਹਾਣੀ ਸਾਹਿਤ ਦੇ ਪ੍ਰਸੰਗ ਵਿੱਚ
(ਤਿੰਨਾਂ ਵਿਚੋਂ ਦੋ)

(ਅੰਕ : 20)

ਭਾਗ ਦੂਜਾ

ਪੰਜਾਬੀ ਸੰਵੇਦਨਾ ਦੇ ਪ੍ਰਮੁੱਖ ਸਾਹਿਤਕਾਰ : ਰਜਿੰਦਰ ਸਿੰਘ ਬੇਦੀ, ਭੀਸ਼ਮ ਸਾਹਨੀ, ਖੁਸ਼ਵੰਤ ਸਿੰਘ, ਅਛਲ ਅਹਿਸਨ ਰੰਧਾਵਾ
(ਦੋ ਵਿਚੋਂ ਇਕ)

(ਅੰਕ : 10)

ਭਾਗ ਤੀਜਾ

ਮੰਟੋ ਦੀਆਂ ਕਹਾਣੀਆਂ : ਸੰਪਾਦਕ - ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼
 ਪ੍ਰਮੁੱਖ ਪੰਜ ਕਹਾਣੀਆਂ : ਟੋਭਾ ਟੇਕ ਸਿੰਘ
 ਬੋਅ
 ਬਾਪੂ ਗੋਪੀ ਨਾਥ
 ਟੇਟਵਾਲ ਦਾ ਕੁੱਤਾ
 ਧੂਆਂ

(ਵਿਸ਼ਾ ਸ਼ਵਸਤੂ, ਬਿਰਤਾਂਤਕਾਰੀ ਤੇ ਕਹਾਣੀ-ਕਲਾ ਸੰਬੰਧੀ ਸਵਾਲ ਪੁੱਛੇ ਜਾਣਗੇ)
(ਤਿੰਨਾਂ ਵਿਚੋਂ ਦੋ)

(ਅੰਕ : 15)

B.A. II (SEMESTER IV) ਆਨਰਜ਼

ਪਾਠਕ੍ਰਮ ਅਤੇ ਕੋਰਸ ਪੇਪਰ-IV ਭਾਰਤੀ ਸੰਵੇਦਨਾ ਅਤੇ ਸਾਹਿਤ

ਕੁੱਲ ਅੰਕ : 50

ਪ੍ਰਾਪਤ ਅੰਕ : 45

05 Internal Assessment

Time : 3 Hours

ਭਾਗ ਪਹਿਲਾ

1. ਭਾਰਤੀ ਸੰਵੇਦਨਾ : ਪਰਿਭਾਸ਼ਾ ਤੇ ਸਰੂਪ
2. ਭਾਰਤੀ ਸੰਵੇਦਨਾ ਦਾ ਸਾਹਿਤ
3. ਭਾਰਤੀ ਸੰਵੇਦਨਾ ਦੀ ਸਾਹਿਤਕ ਸਿਰਜਣਕਾਰੀ
(ਤਿੰਨਾਂ ਵਿਚੋਂ ਦੋ)

(ਅੰਕ : 20)

ਭਾਗ ਦੂਜਾ

ਮੁਨਸ਼ੀ ਪ੍ਰੇਮ ਚੰਦ, ਰਬਿੰਦਰ ਨਾਥ ਟੈਗੋਰ
ਮੁਲਕ ਰਾਜ ਅਨੰਦ, ਗਿਰੀਸ਼ ਕਰਨਾਰਡ
(ਦੋ ਵਿਚੋਂ ਇਕ)

(ਅੰਕ : 10)

ਭਾਗ ਤੀਜਾ

ਸੰਸਕਾਰ (ਨਾਵਲ) : ਯੂ ਆਰ ਅਨੰਤਮੂਰਤੀ (ਅਨੁਵਾਦਕ)
ਭਾਰਤੀ ਸਾਹਿਤ ਅਕਾਦਮੀ, ਦਿੱਲੀ
(ਵਿਸ਼ਾ-ਵਸਤੂ, ਬਿਰਤਾਂਤਕਾਰੀ ਤੇ ਨਾਵਲ-ਕਲਾ ਸੰਬੰਧੀ ਸਵਾਲ ਪੁੱਛੇ ਜਾਣਗੇ)
(ਤਿੰਨਾਂ ਵਿਚੋਂ ਦੋ)

(ਅੰਕ : 15)

GERMAN**B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18****SEMESTER –III**

Summary	Max. Marks	: 100 marks(Total)
	Paper-I (Theory)	: 90 marks
	Internal Assessment	: 10 marks
	Time	: 3 hours

Paper-I (Theory) : 90 marks (Total)

Note : Use of dictionary is allowed.

- i. Characterization /Literary questions (2 out of 3) on the prescribed novel “Der Richter und sein Henker” (Dürrenmatt) : 60 Marks
- ii. Questions on text comprehension from the prescribed text-book “Lagune-2” Chapters 1-17 upto page 87 (5 out of 6 questions to be attempted) : 30 Marks

Internal Assessment : 10 marks (Total)

- Continous Evaluation
- Attendance

Note :

1. The mode of evaluation for Internal Assessment is to be followed as per University guidelines.
2. For private candidates, Internal Assessment will be calculated proportionately to the marks obtained by the candidate in written examination.

Prescribed Textbooks:

- i. “Lagune-2” Kursbuch (2006 Edition) by Hartmut Aufderstraße a.o. Chapters 1-17 upto page 87.
- ii. “Der Richter und sein Henker” (Dürrenmatt)

Supplementary book:

- i. “Lagune-2” Arbeitsbuch by Hartmut Aufderstraße a.o. Chapters 1-17

Summary

Max. Marks	: 100 marks(Total)
Paper-2 (Theory)	: 90 marks
Internal Assessment	: 10 marks
Time	: 3 hours

PAPER-II : ESSAY AND TRANSLATION(Theory): 90 marks

Note : Use of dictionary is allowed

- | | | | |
|------|---|---|----------|
| i. | Translation of an unseen text/s from German into English. | : | 50 marks |
| ii. | Translation of an unseen text/s from English into German | : | 20 Marks |
| iii. | Essay writing in German (about 250 words) | : | 20 Marks |
| | i. Ein Traum | | |
| | ii. Eine Ferienreise | | |
| | iii. Essen und Trinken | | |
| | iv. Heutige Mode und Kleidung | | |
| | v. Ein Fest (indisch/deutsch) | | |

Internal Assessment : 10 marks (Total)

- Continous Evaluation
- Attendance

Note :

1. The mode of evaluation for internal assessment is to be followed as per University guidelines.
2. For private candidates, Internal Assessmet will be calculatated proportionately to the marks obtained by the candidate in written examination.

Prescribed Textbook:

- i. Deutsche Texte zum Übersetzen (Hueber Verlag)

GERMAN

SEMESTER –IV

Summary

Max. Marks : 100 marks(Total)
 Paper-I (Theory) : 90 marks
 Internal Assessment : 10 marks
 Time : 3 hours

Paper-I (Theory) : 90 marks (Total)

Note : Use of dictionary is allowed.

- i. Characterization /Literary questions (2 out of 3) on the prescribed drama “Biedermann und die Brandstifter” (Max Frisch) : 60 Marks
- ii. Questions on text comprehension from the prescribed text-book “Lagune-2” Chapters 18-34 (5 out of 6 questions to be attempted) : 30 Marks

Internal Assessment : 10 marks (Total)

- Continuous Evaluation
- Attendance

Note :

1. The mode of evaluation for Internal Assessment is to be followed as per University guidelines.
2. For private candidates, Internal Assessment will be calculated proportionately to the marks obtained by the candidate in written examination.

Prescribed Textbooks:

- i. “Lagune-2” Kursbuch (2006 Edition) by Hartmut Aufderstraße a.o. Chapters 18-34.
- ii. “Biedermann und die Brandstifter” (Max Frisch)

Supplementary book:

- i. “Lagune-2” Arbeitsbuch by Hartmut Aufderstraße a.o. Chapters 18-34.

Max. Marks : 100 marks(Total)
 Paper-I (Theory) : 90 marks
 Internal Assessment : 10 marks
 Time : 3 hours

PAPER-II : ESSAY AND TRANSLATION(Theory) : 90 marks

Note : Use of dictionary is allowed

- | | | | |
|------|---|---|----------|
| i. | Translation of an unseen text/s from German into English. | : | 50 marks |
| ii. | Translation of an unseen text/s from English into German | : | 20 Marks |
| iii. | Essay writing in German (about 250 words) | : | 20 Marks |
| | i. Der Klimawandel | | |
| | ii. Auf dem Markt | | |
| | iii. Medien und Netzwerk | | |
| | iv. Heutige Frau | | |
| | v. Jugend und Gesellschaft | | |

Internal Assessment : 10 marks (Total)

- Continous Evaluation
- Attendance

Note :

1. The mode of evaluation for Internal Assessment is to be followed as per University guidelines.
2. For private candidates, Internal Assessment will be calculated proportionately to the marks obtained by the candidate in written examination.

Prescribed Textbooks:

- i. Deutsche Texte zum Übersetzen (Hueber Verlag)

Supplementary book:

- i. "Lagune-2" Kursbuch & Arbeitsbuch by Hartmut Aufderstraße a.o.

DEFENCE & STRATEGIC STUDIES

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER-III

Outlines of Tests, Syllabi and Courses of Reading

Note : There will be one theory paper of 90 marks. The internal assessment will be of 10 marks. The theory paper will have one compulsory short answer type question containing 15 questions of 2 marks each covering the entire syllabus. The candidates will be required to attempt any 10 short answer type questions. In addition, there will be four sections of the question paper. The candidate will be required to attempt one question from each of these sections carrying 17½ marks each.

PAPER : AREA STUDIES–PAKISTAN -I

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Total Teaching Periods : 75

SECTION-I

1. Military Geography of Pakistan : Its strategic importance, economic and industrial resources.
2. People and their characteristics.

SECTION-II

3. Outlines of history leading to the Birth of Pakistan.
4. Political Developments in Pakistan since 1947.
5. Role of Military in Pakistan's Politics.

SECTION-III

6. Foreign Policy of Pakistan (Basic Determinants).
7. Foreign Policy of Pakistan with regard to U.S.A. & Russia.

SECTION-IV

8. Pakistan's Foreign relations with its neighbours with particular reference to Afghanistan, India and Iran.

Books Recommended :

1. Akhtar, Jamna Das, *Political Conspiracies in Pakistan*, Delhi : Punjabi Pustak Bhandar, 1969
2. Britannica., *The New Encyclopedia Britannica*, Chicago, II : Encyclopedia Britannica, Inc, 2005.
3. Burke, S.M., *Pakistan's Foreign Policy : An Historical Analysis*. [S.I.: s.n. Print]
4. Callerd, Keith B., *Pakistan – A Political Study*, London : Allen & Unwin, 1957.
5. Chopra, Surendra, *Perspectives on Pakistan's Foreign Policy*, Amritsar: Guru Nanak Dev University Press, 1983.
6. Cohen, Stephen P., *The Pakistan Army*, Berkeley: University of California Press, 1984.
7. Johnson, Allan G., *Privilege, Power, and Difference*, Boston, Mass: McGraw- Hill, 2006.
8. Khaliq, Sheikh Abdul, *Pakistan—Peace and War*, London : Regency Press, 1973.
9. Moon, Penderel, *Divide and Quit*, Delhi: Oxford University Press, 1998.
10. Sahni, Naresh Chander, *Political Struggle In Pakistan*, Jullundur City: New Academic Pub. Co., 1969, Print.
11. Sayeed, Khalid B., *Pakistan, The Formative Phase, 1857-1948*, London: Oxford University Press, 1968.
12. Sidhu, K.S., *Pakistan: Khetri Adhyayan*; Publication Bureau, Punjabi University Patiala, 1987.
13. Stephens, Ian. *Pakistan: New York* : Praeger, 1963.
14. Tayyeb Ali, and A Tayyeb. *Pakistan*. London [etc.] Oxford University Press, 1966.
15. Tinker, Hugh. *India and Pakistan*. New York: Frederick. A. Praeger, 1968.
16. Williams, L.F. Rushbrook. *The State of Pakistan*. London: Faber, 1966.
17. Ziring, Lawrence. *Pakistan In The Twentieth Century*, Karachi [u.a.]: Oxford University Press, 1998.
18. Ziring Lawrence, *The Ayub Khan Era*, Karachi: Paramount Publishing, 2009.

DEFENCE & STRATEGIC STUDIES**SEMESTER-IV****Outlines of Tests, Syllabi and Courses of Reading**

Note : There will be one theory paper of 90 marks. The internal assessment will be of 10 marks. The theory paper will have one compulsory short answer type question containing 15 questions of 2 marks each covering the entire syllabus. The candidates will be required to attempt any 10 short answer type questions. In addition, there will be four sections of the question paper. The candidate will be required to attempt one question from each of these sections carrying 17½ marks each.

PAPER : AREA STUDIES–PAKISTAN-II

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Total Teaching Periods : 75

SECTION-I

1. Jammu and Kashmir Campaign 1947-48 : Causes, operations in brief and effects.
2. Indo-Pak War 1965 : Causes, operations in brief and effects.

SECTION-II

3. Indo-Pak War 1971 : Causes, operations in brief and effects.
4. 1999-Kargil War .

SECTION-III

5. Defence Potential of Pakistan.
6. Armed Forces of Pakistan.

SECTION-IV

7. Nuclear Policy of Pakistan.
8. Terrorism in Pakistan

Books Recommended :

1. Ayoob, Mohammed, and K. Subrahmanyam. *The Liberation War*, The University of Michigan: S.Chand, 1972.
2. Brines, Russell. *The Indo-Pakistani Conflict*, London: Pall Mall P., 1968.

3. Costa, Benedict. *Dismemberment of Pakistan*, Ludhiana: Kalyani Publisher, 1972.
4. Dasgupta, C. *War and Diplomacy In Kashmir, 1947-48*. New Delhi: Sage, 2002.
5. Feldman, Herbert. *Revolution In Pakistan*. London: Oxford U.P., 1967, Print.
6. Feldman, Herbert. *The End and The Beginning*. London: Oxford University Press, 1975.
7. Gupta, K.R., *India-Pakistan Relations with Special Refernce to Kashmir*, New Delhi: Atlantic Publishers & Distributors, 2003.
8. Hackett, James T., *The Military Balance 2011*. Oxfordshire: Routledge, 2011.
9. Johri, Sita Ram. *The Indo-Pak Conflict of 1965*. Lucknow: Himalaya Publications, 1967.
10. Kaul, Brij Mohan. *Confrontation With Pakistan*, Delhi: Vikas Publicaitons, 1971.
11. Khaliq, Sheikh Abdul, *Pakistan, Peace and War*, London: Regency Press, 1973.
12. Lachhman Singh., *Indian Sword Strikes In East Pakistan*. New Delhi: Vikas, 1979.
13. Mankekar, D. R. *Pakistan Cut To Size*, New Delhi: Indian Book Co, 1972. Print.
14. Mankekar, D.R. *Twenty two Fateful Days*. Bombay: Manaktalas, 1967. Print.
15. Nath, Rajendra. *Military Leadership In India*. New Delhi, India: Lancers Books, 1990.
16. Palit, D.K. *The Lightning Campaign*. New Delhi: Thomson Press (India), 1972.
17. Sahni, Naresh Chander, *Political Struggle in Pakistan*, Jullundur City: New Academic Pub. Co, 1969.
18. Sen. Lionel Protip. *Slender Was The Thread: Kashmir Confrontations, 1947-48*, Bombay: Orient Longmans, 1969.
19. Sethi, Surinder Singh. *The Decisive War: Emergence of a New Nation*. New Delhi: Sagar Publications, 1972.
20. Sidhu, K.S. *Pakistan: Khetri Adhyayan*: Publication Bureau, Punjabi University Patiala, 1987.
21. Sinha, S.K. *Operations Rescue*, New Delhi: Vision Books, 1977.
22. Ziring, Lawrence. *The Ayub Khan Era*. Karachi: Paramount Publishing, 2009.

HISTORY

SYLLABUS OF B.A. (HONOURS) SEMESTER III/IV, 2017-18

Note : The Honours programme outlined below is intended to encourage an in depth study of some aspects of society and culture in broad periods and significant epochs in Indian History, and wherever possible, to also provide a comparative perspective. The programme intends to supplement and complement the general course, adding specialized study.

Any two papers, one in Semester III and one in Semester IV according to the following :

Semester III

- (i) Social and Cultural Trends in Ancient India.

OR

- (ii) Social and Cultural Trends in Medieval India.

Semester IV

- (ii) Social and Cultural Trends in Medieval India.

OR

- (iii) Social and Cultural Trends in Modern India.

Note: Candidates CANNOT OPT FOR PAPER (ii) in BOTH Semesters.

- (i) **SOCIAL AND CULTURAL TRENDS IN ANCIENT INDIA:**

INSTRUCTIONS FOR THE PAPER –SETTER AND CANDIDATES

1. The syllabus has been divided into four Units.
There shall be 9 questions in all. The first question is compulsory and shall be short answer type containing 15 short questions spread over the whole syllabus to be answered in about 25 to 30 words each. The candidates are required to attempt any 9 short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain 4 units. Each Unit shall have two essay type questions and the candidate shall be given internal choice of attempting one question from each Unit-IV in all. Each question will carry 18 marks.
2. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.
The paper-setter must put note (2) in the question paper.

Explanation:

1. Each essay type question would cover about one-third or one-half of a topic detailed in the syllabus.
2. The paper-setter would avoid repetition between different types of question within one question paper.

Paper- SOCIAL AND CULTURAL TRENDS IN ANCIENT INDIA

Max. Marks	:	100
Theory	:	90
Internal Assessment	:	10
Time	:	3 Hours

Objectives: To introduce the students to the history of the ancient period in Indian history.

Pedagogy: Lectures, library work and discussions.

UNIT I

1. Social Institutions: Varna, Jati, Ashrama and Samskara
2. Marginalized Sections of the Society: Shudras and slaves.

UNIT II

3. Women: Status and rights
4. Education: system of learning, Principal centres,

UNIT III

3. Early Religions : Harappan and Vedic
4. Protest Movements: Jainism and Buddhism

UNIT IV

5. Puranic Religions: Vaishnavism, Shaivism and Shaktism
6. Significant developments in art and architecture.
 - (a) Styles of Temple Architecture: Nagara, Dravida and Vesara
 - (b) Sculpture: Mauryan, Mathura, Gandhara and Gupta
 - (c) Painting: Ajanta caves.

Recommended readings:

1. P.N.Prabhu, *Hindu Social Organisation*, Popular Prakashan, Bombay, 1979.
2. R.S.Sharma, *Surdas in Ancient India*, Motilal Banarasidas, Delhi, 1980.
3. K.Roy, Ed. *Women in Early Indian Societies*, Manohar, New Delhi,1999.
4. A.S. Altekar, *Education in Ancient India*, The Indian Book shop, Benaras, 1937.
5. S. Ratnagar, *Understanding Harappa*, Tulika, New Delhi, 2001.
6. A.L. Basham, *The Wonder That Was India*, Rupa, Calcutta, 1992.
7. R.G. Bhandarkar, *Vaishnavism, Shaivism and Minor Religious Systems*, Indological Book House, Varanasi, 1965.
8. P.Brown, *History of Indian Architecture*, Vol. I Taraporevala, Bombay 1965.
9. S.K. Saraswati, *Survey of Indian Sculpture*, Munshiram Manoharlal, New Delhi, 1975.
10. D.Barrett & B Grey, *Indian Painting* Skira, Lausanne, 1963.

(ii) SOCIAL AND CULTURAL TRENDS IN MEDIEVAL INDIA:**INSTRUCTIONS FOR THE PAPER –SETTER AND CANDIDATES:**

The syllabus has been divided into four Units.

There shall be 9 questions in all. The first question is compulsory and shall be short answer type containing 15 short questions spread over the whole syllabus to be answered in about 25 to 30 words each. The candidates are required to attempt any 9 short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain 4 units. Each Unit shall have two essay type questions and the candidate shall be given internal choice of attempting one question from each Unit-IV in all. Each question will carry 18 marks.

1. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

The paper-setter must put note (2) in the question paper.

2. Each essay type question would cover about one-third or one-half of a topic detailed in the syllabus.
3. The paper-setter would avoid repetition between different types of question within one question paper.

Paper II: SOCIAL AND CULTURAL TRENDS IN MEDIEVAL INDIA

Max. Marks	:	100
Theory	:	90
Internal Assessment	:	10
Time	:	3 Hours

Objectives: To introduce the students to the history of the ancient period in Indian history.
Pedagogy: Lectures, library work and discussions.

UNIT I

1. Social Conditions in the Delhi Sultanate: Nobles, theologians, slaves and other social groups; position of women; social customs and manners.
2. Devotional Movement: Vaishnavism in Bengal, the Gangetic Plain and Rajputana; the teachings and impact of Kabir and Guru Nanak

UNIT II

3. Mystical Dimensions of Islam: Organisation of the Chishti and Suhrawardi orders, with reference to their beliefs and practices.
4. Landmarks in Persian Historiography: The historical works of Ziauddin Barani and Abul Fazl.

UNIT III

5. State Intervention in the Socio-Religious Sphere: Akbar's liberal policy; his *Ibadat Khana* debates, the *mahzar* and breach with orthodox ulama; introduction of *Tauhid-i-Ilahi* and social reforms
6. Muslim Revivalist Movements: Salient features of the Mahdawi movement; socio-religious ideas of Sheikh Ahmad Sirhindi and their impact.

UNIT IV

7. Development of Literature: the devotional writings of Tulsidas, Ravidas and Namdev; the contribution of Malik Muhammad Jaisi; Abdur Rahim Khan-i-Khanan and Ras Khan.
8. Fine Arts in Mughal India: the development of architecture, painting and music during the sixteenth and seventeenth centuries.

Recommended Readings:

1. *K.M. Ashraf: Life and Conditions of the People of Hindustan*, Second Edition, Munshiram Manoharlal, New Delhi, 1970.
2. Satish Chandra: *Medieval India: From Sultanate to the Mughals*, Parts I & II, Haranand Publications (Rep.), New Delhi, 2003.
3. Peter Hardy: *Historians of Medieval India: Studies in Indo-Muslim Historical Writing*, First Indian Edition, Munshiram Manoharlal, New Delhi 1997.
4. Harbans Mukhia : *Historians and Historiography During the Reign of Akbar*, Vikas Publishing House, New Delhi 1976.
5. Khaliq Ahmad Nizami: *Religion and Politics in India During the Thirteenth Century*, New Edition, Oxford University Press, Delhi, 2001.
6. S.A.A. Razvi: *The Wonder That was India*, Part II, Twelfth Impression, Rupa and Company, New Delhi, 2002.
7. Mohammad Yasin: *A Social History of Islamic India*, Second Revised Edition, Munshiram Manoharlal, New Delhi, 1974

III. SOCIAL AND CULTURAL TRENDS IN MODERN INDIA

INSTRUCTIONS FOR THE PAPER –SETTER AND CANDIDATES:

The syllabus has been divided into four Units.

There shall be 9 questions in all. The first question is compulsory and shall be short answer type containing 15 short questions spread over the whole syllabus to be answered in about 25 to 30 words each. The candidates are required to attempt any 9 short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain 4 units. Each Unit shall have two essay type questions and the candidate shall be given internal choice of attempting one question from each Unit-IV in all. Each question will carry 18 marks.

1. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

The paper-setter must put note (2) in the question paper.

2. Each essay type question would cover about one-third or one-half of a topic detailed in the syllabus.
3. The paper-setter would avoid repetition between different types of question within one question paper.

Paper: SOCIAL AND CULTURAL TRENDS IN MODERN INDIA

Max. Marks	:	100
Theory	:	90
Internal Assessment	:	10
Time	:	3 Hours

Objectives: To introduce the students to the history of the ancient period in Indian history.

Pedagogy: Lectures, library work and discussions.

UNIT I

1. Socio-Cultural Trends in Early 19th Century: Religion, education and literature
2. Women Education: Aligarh Girls School; Kanya Maha Vidyalaya.

UNIT II

3. Socio-Religious Reform Movements in Punjab and North- West: The Arya Samaj; Singh Sabhas and the Ahmadiyas
4. Socio-Religious Awakening in the Central Belt and Maharashtra: The Manav Dharma Sabha; the Prathana Samaj; the Rahnumai Mazdayesan Sabha (among Parsis)

UNIT III

5. Cultural Reorientation in the South: Annie Besant and the Theosophical Movement
6. The Marriage Reform Efforts: Legislative measures for the abolition of Sati and Female infanticide; contribution of reformers towards the promotion of widow-remarriage

UNIT IV

7. The Social Protest Movements: Role of Jyotiba Phule in Maharashtra; Swami Narayana Guru in Kerala; Mangoo Ram and the Ad Dharm Movement in Punjab.
8. The Literary Trends: Development of literature in Hindi; Bengali and Marathi languages.

Recommended Readings:

1. Kenneth W., Jones: *The New Cambridge History of India: Socio Religious Reform Movements in British India* (Cambridge, 1989).
2. R.C.Majumdar and Others (ed.): *British Paramountcy and Indian Renaissance*, Part II, Bhartiya Vidya Bhavan Series, Vol. X.
3. Robert D, Baird (ed.): *Religion in Modern India*, Manohar, New Delhi, 1981.
4. Gail Minault: *Secluded Scholars: Women's Education and Muslim Social Reform in Colonial India* New Delhi, O.U.P.1998.
5. Geraldine Forbes: *Women in Modern India*, Foundation Books, New Delhi, 1996.
6. Tara Chand : *History of the Freedom Movement in India*, Vol.II, New Delhi, 1967, Publication Division, G.O.I.
7. Mark Jurgensmeyer: *Religious Rebels in the Punjab*, Delhi, Ajanta, 1988.

POLITICAL SCIENCE

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

Outlines of Test

Semester-III	Option (i)	:	International Relations 1917-1945
			OR
	Option (ii)	:	Colonialism and Nationalism in Modern India
Semester-IV	Option (i)	:	Western Political Thought
			OR
	Option (ii)	:	Comparative Politics

Syllabus and Courses of Reading :

Semester-III

OPTION (I) : INTERNATIONAL RELATIONS 1917-1945

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hrs.

Objectives :

The essential concern of the course is with the period between the Bolshevik Revolution and the end of the Second World War. However, to facilitate better understanding of the developments during this period, it is very essential that the teacher familiarizes the students with the major currents of international politics immediately preceding the First World War as well as during the course of that war. Needless to say, no question will be asked on the period up to the Bolshevik Revolution.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be 9 questions in all. The first question shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 10 to 20 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks each. It shall carry 18 marks and shall be a compulsory question. Rest of the paper shall contain 4 units. Each unit shall have two questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all of 18 marks each.

Course Content :

Unit-I : *Nature of International Relations before and after World War-I :*

- (a) Imperial confrontation & Concern for peace.
- (b) Peace treaties & rise of International Organisation-League of Nation.

Unit-II : *Rise of Nationalism :*

- (a) National Upsurge
- (b) Search for colonies

Unit-III : *European Politics and the Post-War Settlement :*

- (a) French quest for security and the German urge for equality.
- (b) Britain and the European power system.

Unit-IV: *Origins of the Second World War, & International Organisation (United Nations) :*

- (a) Alliances and counter-alliances.
- (b) Failure of the League of Nations & Emergence of U.N.
- (d) American Ambivalence.

Note : Questions to be asked on the Genesis itself and not on post-1945 developments related to the United Nations.

Suggested Readings :

1. Carr, E.H. : International Relations Between the Two World Wars (1919-1939), (London : Macmillan Press, 1973).
2. Northedge, F.S. : A Hundred Years of International Relations (London : Duchworth, 1971).
3. William Shirer : The Rise and Fall of the Third Reich, A History of Nazi Germany (London : Secker and Warburg, 1960).
4. Keswani, K.B. : International Relations : 1900 to Present Day (Bombay : Himalaya Publishing House, 2004).
5. Quicky Wright : A Study of War (Chicago : University of Chicago Press, 1942).
6. Goodrich, L.M., and Edward Hambro : Charter of the United Nations-Commentary and Documents (London: London Institute fo World Affairs, 1949).
7. Richard Little and Michael Smith (eds.) : *Perspective in World Politics (London: Routledge, 2006).*
8. Chris Brown : *Understanding International Relations (London, Palgrave, 2001).*

OR**OPTION (ii) COLONIALISM AND NATIONALISM IN MODERN INDIA**

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hrs.

Objectives :

The paper aims at enabling the students about the nature and evolution of the Indian National Movement and constitutional development in colonial India.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be 9 questions in all. The first question shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 10 to 20 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks each. It shall carry 18 marks and shall be a compulsory question. Rest of the paper shall contain 4 units. Each unit shall have two questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all of 18 marks each.

Unit-I : *Historical Foundations of National Movement :*

- (a) Socio-Religious reform movements.
 - (i) Arya Samaj
 - (ii) Brahma Samaj
 - (iii) Singh Sabha Movement
 - (iv) Tama Krishan Mission

- Unit-II :**
- (a) Origin and growth of Indian National Congress.
 - (b) Moderates and Extremists—Debates over objectives, ideology, strategy, social basis.
 - (c) Revolutionary Terrorism.

Unit-III : *Gandhi and Nationalist Movement in India :*

- (a) Gandhi : Political strategy and new techniques of struggle.
- (b) Non-Cooperation, Civil Disobedience and Quit India Movements.

Unit-IV : Landmarks in the devolution of power with special reference to Government of India Acts of

- (i) 1909
- (ii) 1919
- (iii) 1935
- (iv) Indian Independence Act 1947.

Suggested Readings :

1. Sumit Sarkar : Modern India (Madras : Macmillan, 1995).
2. Bipan Chandra : Essays on Colonialism (Delhi : Orient Longman, 2000).
3. Thomas Pantham et al (ed.) : Modern Indian Political Thought (Delhi : Sage, 1986).
4. Gail Omvedt : Dalit Visions –The Tract of the Times (Delhi : Orient Longman, 2002).
5. Radha Kumar : History of Doing (Delhi : Kali for Women, 1995).
6. Paul Brass : The Politics of India Since Independence (Delhi : Foundation Books, 1992).
7. V.R. Mehta and Thomas Pantham, ed. : Political Ideas in Modern India, Thematic Exploration (Delhi : Sage, 2006).

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POLITICAL SCIENCE Semester-IV

OPTION (i) WESTERN POLITICAL THOUGHT

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hrs.

Objectives :

This paper aims to introduce to the students the major themes of western political thought. This will be done by undertaking an indepth study of the key thinkers of this tradition.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be 9 questions in all. The first question shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 10 to 20 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks each. It shall carry 18 marks and shall be a compulsory question. Rest of the paper shall contain 4 units. Each unit shall have two questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all of 18 marks each.

Unit-I	:	<i>Plato</i> : The Republic	- Justice - Philosopher-King - Educations - Communism of wives & property
Unit-II	:	<i>Plato</i> : The Statesman and the Laws	- Ideal State - Second Best State
Unit-III	:	<i>Aristotle</i> : The Politics	- Inequality-Slavery, Women - Nature of the State - Classification of Constitutions - Revolution
Unit-IV	:	<i>Machiavelli</i> : The Prince	- Machiavelli as a Modern Political Thinker. - Morality and Politics. - Power and Statecraft.

Suggested Readings :

1. Sabine, G.H. : *A History of Political Theory* (Bombay : Oxford & IBH, 1973).
2. Dunning, W.A. : *A History of Political Theories*, 3 Vols. (Allahabad : Central, 1973).
3. Sait, E.M. (ed.) : *Masters of Political Thought*, 3 Vols. (London : George and Harap, 1947).
4. William Ebenstein : *Great Political Thinkers : Plato to Present*, 1966 (New Delhi : OUP, 2000).

Reference Books :

1. Ernest Barker : *Greek Political Theory : Plato and His Predecessors* (London : Methuen, 1978).
2. Mulgan, R. : *Aristotle's Political Theory* (Oxford : Clarendon, 1977).
3. Plamenatz, John : *Man and Society*, 2 Vols. (New York : Longman, Latest Edition).
4. Quentin Skinner : *Machiavelli* (Oxford : OUP, 1981).
5. Raphael, D.D. : *Hobbes : Morals and Politics* (London : George Allen, 1978).
6. Hall, J.C. : *Rousseau : Introduction to His Political Philosophy* (London : Macmillan, 1971).
7. David Maclellan : *Marx : Fontana Modern Masters Series* (London : Fontana, 1986).

OR

OPTION (ii) C O M P A R A T I V E P O L I T I C S

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hrs.

Objectives :

The objective of the course is to familiarize students with recent debates and theories concerning advanced industrial as well as developing societies and this will be undertaken in a comparative framework.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be 9 questions in all. The first question shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 10 to 20 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks each. It shall carry 18 marks and shall be a compulsory question. Rest of the paper shall contain 4 **units**. Each unit shall have two questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all of 18 marks each.

Unit-I : *Approaches to Comparative Politics :*

- (a) Political Sociology.
- (b) Political Economy.

Unit-II : *Theories of Development :*

- (a) Modernisation and Development Theories.
- (b) Alternative Third World perspective on development.

Unit-III : *Political Participation and Representation :*

- (a) Political Parties.
- (b) Interest Groups and Pressure Groups.
- (c) Political Elite.

Unit-IV : (a) Theories of State : Liberal, Marxist.

- (b) Civil Society and New Social Movements.

Suggested Readings :

1. Andrew Heywood : *Politics* (London : Macmillan, 1997).
2. Mary Mank Sworth and Mourice Kogan (ed.) : *The Encyclopaedia of Government and Politics* (London : Routledge, 1992).
3. Rod Hague, Martin Harrop and Shaun Breslin : *Comparative Government and Politics : An Introduction* (London : Macmillan, 1998).
4. Gabriel Almond, G. Bingham Powell, Kaare Strom and Russel J. Dalton : *Comparative Politics Today* (Delhi : Pearson Education, 2005).
5. Ronald H. Chilcote : *Theories of Comparative Politics : The Search for a Paradigm Reconsidered* (Boulder : Westview Press, 1994).

ECONOMICS

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER-III

The candidates are required to study one paper out of the following three papers :

- I Economics of Agriculture.
- II History of Economic Thought.
- III Economics of Population.

Paper-I : ECONOMICS OF AGRICULTURE

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks of each. It shall carry 18 marks and shall be **Compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

Unit-I

Economics of Agriculture : Its nature and scope, Interdependence between agriculture and industry. Nature and problems of agricultural development in developing countries.

Unit-II

Transforming Traditional Agriculture : Ranis & Fei, Schultz and Meller's Models, Lewis model of unlimited supplies of labour.

Unit-III

Land reforms and system of farming. Farm size and productivity relationship. Agricultural price policy, Agricultural taxation (All these topics should deal with special reference to India).

Unit-IV

New agricultural strategy and Green Revolution. Problems of small farmers and agricultural labourers. Agricultural credit, marketable and marketed surplus. Surplus and its utilization. (All these topics would deal with special reference to India).

Recommended Readings:

1. Eicher, C. & Witt, L. (1970) : Agriculture in Economic Development, Vera & Co., Bombay
2. Frankel, Francis R. (1971) : India's Green Revolution-Economic Gains and Political Costs, Oxford University Press, Bombay
3. Joshi, P.C. (1975) : :Land Reforms in India, Allied, Bombay, Part II, Sections I & II
4. Khusro, A.M. (1968) : Readings in Agricultural Development, Allied, Bombay, Articles by : B.S. Minhas & T.N. Srinivasan, V.M. Dandekar, M.L. Dantwala, A.N. Khusro, T. Bergman, V.K.R.V. Rao.
5. Meller, J.W. (1966) : The Economics of Agricultural Development, Vera & Co., Bombay
6. Misra, S.K. & Puri, V.K. (2014) : Indian Economy, Himalaya Publishing House, Bombay
7. Schultz, T.W. (1970) : Transforming Traditional Agriculture, Lyall Book Depot, Ludhiana
8. Singh, Amarjit & Sadhu, A.N. (1986) : Agricultural Problems in India, Himalaya Publishing House, Bombay
9. Soni,R.N. (1992) : Leading Issues in Agricultural Economics, Vishal Publisher, Jalandhar.
10. Todaro, Michael P. (1987) : Economic Development in the Third World, Orient Longman, New Delhi
11. Wadhva, Charan D. (1973) : Some Problems of India's Economic Policy, Tata McGraw Hills, Bombay, Part II: Articles-B,C,D, F and G

Supplementary Readings:

1. Sameeksha Trust, Bombay : Various Issues : Economic and Political Weekly.
2. Indian Society of Agricultural Economics, Bombay : Various Issues : Indian Journal of Agricultural Economics.

Paper -II : HISTORY OF ECONOMIC THOUGHT

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks of each. It shall carry 18 marks and shall be **Compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

Unit-I

Pre-Classical Economic Thought : Mercantilism : Mercantilist ideas, regulations of economic life, leading theory of Mercantilist school, Physiocracy : ideas with special reference to Quesnay and Turgot.

Unit-II

Classical and Marxian Political Economy : The classical tradition : Adam Smith, Ricardo, J. S. Mill and Karl Marx on value, distribution and development.

Unit-III

Reaction Against Classicism : Socialist and Nationalist thinkers, Sismondi, Saint-Simon, Robert Brown and Fourier, Subjective School : Menger, Weiser and Bohm Bewark.

Unit-IV

Neo-Classical Economics : Main features.

Marshall : Scope of Economics, theory of firm, time-element, partial equilibrium analysis.

Keynes: Concept of effective demand, consumption, investment, inflationary gap.

Recommended Readings:

1. Blaug , M. (1968) : Economic Theory in Retrospect, Richard D. Irwin Inc. Illinois.
2. Gide & Rist (1964) : A History of Economic Doctrine, George G. Harper & Co. Ltd., London
3. Sweezy , P. M. (1991) : The Theory of Capitalist Development, K. P. Bagchi & Co., Calcutta,
4. Roll, Eric (1993) : History of Economic Thought, Oxford University Press, Calcutta..

Supplementary Readings :

1. Ghosh , B. N. & Ghosh, Rama (1988) : Concise History of Economic Thought, Himalaya Publishing House, Delhi .
2. Paul , R.R. (1979) : Classical Political Economy, Kalyani Publishers, Delhi..
3. Schumpeter , J.A. (1961) : History of Economic Analysis (Selected Portions), George Allen & Unwin, London,

Paper-III: Economics of Population

Max. Marks	: 100
Theory	: 90 marks
Internal Assessment	: 10 marks
Time	: 3 hours

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks of each. It shall carry 18 marks and shall be **Compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

UNIT – I

Theories of Population: Malthus, optimum.
Demographic transition theory .
Population and Economic Development.

UNIT – II

Population Structure and Characteristics: Impact of Population growth on the age and gender structure
Fertility: Concepts of fertility transition. Measurement of fertility .
Mortality: Components and Measurement, Infant Mortality in India.

UNIT – III

Migration: Concepts, causes and consequences (economic and demographic) of migration.
Migration in India: Causes and Trends, Rural-Urban, Male-Female.
Urbanization: Concepts, Trends of Urbanization in India.

UNIT – IV

Growth and Structure of Indian Population.
Literacy: Literacy transition in India, pattern of literacy and literacy differentials in India.
Estimation of Population in India: Census, sampling and vital registration methods.
Population Policy in India since Independence.

Essential Readings:

- Aggarwal, A. S. N. (1972) : India's Population Problem Tata McGraw Hills Co., Bombay.
- Becker, G. (1960) : An Economic Analysis of Fertility in Demographic Change and Economic Change in Developed Countries (edited by National Bureau of Economic Research), Princeton University Press, Princeton.
- Boserup, E. (1981) : Population and Technological Change University of Chicago Press, Chicago.
- Bouge, D. J. (1971) : Principles of Demography, John Wiley, New York.
- Bose, Ashish (1978) : India's Urbanization, Tata McGraw Hills Publishing Co. Ltd., New Delhi.
- Coale, A. and E. Hoover (1958) : Population Growth and Economic Development in Low Income Countries: A Case Study of India's Prospects. Princeton University, Press, Princeton.
- Chenery, H. and T.N. Srinivasan (eds.) (1989) : Handbook of Development Economics, Vol. 1 & 2, Elsevier, Amsterdam.
- Chandna, R. C. (2000) : A Geography of Population: Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi.
- Cox, Peter R. (1979) : Demography, Vikas Publishing House, New Delhi
- Easterlin, R. A. (1968) : Population, Labour Force and Long Swings in Economic Growth: National Bureau of Economic Research, New York.
- Ghosh, B. N. (ed.) (1987) : Studies in Population and Economic Development, Deep and Deep Publications, New Delhi
- John R. Weeks (2002) : Population : An Introduction to Concepts and Issues (7th edition), Wadsworth Publishing Company, New York.
- Leibenstein, H. (1957) : Economic Backwardness and Economic Growth, New York, John Wiley and Sons
- Govt. of India : Census Report, 2001.

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ECONOMICS

Semester-IV

The candidates are required to study one paper out of the following three papers :

- I Industrial Economics.
- II Economics of Public Enterprises.
- III Theory of Statistics.

Paper-I : INDUSTRIAL ECONOMICS

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks of each. It shall carry 18 marks and shall be **Compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

Unit-I

Scope and methods of Industrial Economics; Basic concepts of firm, industry and market; Organisational forms and alternative motives of the firms; Industrial structure and economic development.

Unit-II

Market Structure : Sellers concentration, product differentiation, conditions of entry and economies of scale, market structure and profitability.

Growth of Firms : Vertical integration, diversification, mergers and innovation; constraints on growth-demand, financial and managerial.

Unit-III

Theory of industrial location, contribution of Weber and Sargent Florence, centralized vs. balanced regional development, industrial concentration and dispersal in India.

Unit-IV

Industrial policy since independence, Industrial development under plans and reasons for deceleration of industrial growth, Growth of State industrialization in India.

Recommended Readings :

1. Barthwal, R. R. (2010) : Industrial Economics : An Introductory Text Book, New Age International Publisher (P.) Ltd., New Delhi.
2. Datt , Rudar & Sundharam K. P. M. (2012) : Indian Economy , S. Chand & Company.
3. Devine , P. J. et al. (1974) : An Introduction of Industrial Economics, George Allen & Unwin Ltd.,London.
4. Howe , W. Steward (1978) : Industrial Economics : An Applied Approach, The Macmillan Press Ltd.
5. Kuchhal, S. C. (1989) : Industrial Economy of India , Allahabad, Chaitanya Publishing House.

Supplementary Readings :

1. Ahluwalia , Ishar Judge (1985) : Industrial Growth in India : Stagnation Since Mid Sixties, Oxford University Press, Delhi.
2. Penrose, E. T. (1995) : The Theory of Growth of Firm, Oxford, Basil Blackwell.
3. Richardson, Harry W. (1969) : Elements of Regional Economics, Penguin Education.
4. Sivayya & Das (1978) : Indian Industrial Economy, S. Chand & Co., New Delhi
5. Smith, David M. (1971) : Industrial Location : An Economic Geographical Analysis, John Wiley & Sons Inc.

Paper II : ECONOMICS OF PUBLIC ENTERPRISES

Max. Marks	: 100
Theory	: 90 Marks
Internal Assessment	: 10 Marks
Time	: 3 Hours

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks of each. It shall carry 18 marks and shall be **Compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

Unit-I

Concepts : Role of public sector in socio-economic development, Rationale of public sector—multiple objectives of public enterprises and clash and complementarity in objectives. Historical perspective of public sector in India. Organisation of public enterprises – various forms and role.

Unit-II

Role of public sector financial institutions in the financing of public enterprises. Problems of management of working capital – Management of inventory, credit and cash financing of working capital.

Unit-III

Pricing in Public Sector : Basis and types of pricing policies, pricing practices, machinery of price fixation. Accountability and profitability of public sector – Causes of poor financial performance of public sector in India.

Unit-IV

Sources of funds of public enterprises – Debt and equity, Industrial relations and its importance, Industrial disputes : causes, effects and their settlements.

Recommended Readings :

1. Narain , Laxmi : Principles and Practices of Public Enterprises Management, S. Chand & Co.,New Delhi. (1980)
2. Narain , Laxmi : Public Enterprises in India, S. Chand & Co., New Delhi. (1982)
3. Institute of Public Enterprises (1967) : Organisation in Public Enterprises, Tripathi, Bombay.
4. Institute of Public Enterprises (latest edition) : Pricing and Investment in Public Enterprises, Oxford and IBH Publishing Co., New Delhi.

Supplementary Readings :

1. Bhalla , G. S. (1968) : Financial Administration of Nationalised Industry in U.K. and India, Meenakshi, Meerut.
2. Gupta, K. R. (1978) : Issues in Public Enterprises, S. Chand & Co., New Delhi.

Paper- III : THEORY OF STATISTICS

Max. Marks	: 100
Theory	: 90 Marks
Internal Assessment	: 10 Marks
Time	: 3 Hours

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks of each. It shall carry 18 marks and shall be **Compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

UNIT - I

Moments & Expectation: Concept of random variables, Moments, Mathematical expectation, Moment Generating Function, Characteristic Function.

Regression and Correlation: Multiple, Partial Regression and Correlation, Fitting of multiple regression by least squares technique

Growth Curves: Properties, methods of estimation and applications of parabolic, geometric, exponential, modified exponential, Gompertz and logistic growth curves.

UNIT - II

Probability: Addition and Multiplication Theorems, Conditional Probability, Bays Theorem, Chebychev's Inequality, Central limit theorem

Probability Distribution: General Characteristics and Applications of Binomial, Poisson and Normal Distribution.

UNIT - III

Sampling & Sampling Distribution: Concept of sampling distribution, Types & Techniques of Sampling, Statistic vs Parameter.

Estimation: Point Estimation and Interval Estimation, Properties of Point Estimates, Maximum Likelihood Estimates.

Statistical Hypothesis: Two -tailed and one-tailed tests, Types I and II Errors, Level of significance, Critical Region.

UNIT - IV

Large and small samples: Tests of significance based on Normal, 't' 'F' and 'Z' distributions. Testing the significance of means, proportions, correlation and regression coefficients and their interpretation. Elementary Knowledge of Analysis of Variance (one-way and two -way classification) and Analysis of Covariance.

Non-Parametric Tests: Chi-square test and sign test.

Quality Control: Elementary Knowledge of quality Control and its simple application.

RECOMMENDED READINGS

1. Croxton, F.E. & Cowden, D.J. (latest edition) : Applied General Statistics, Prentice Hall London and Prentice Hall of India.
2. Gupta , S.C. & Kapoor, V.K. (1996) : Fundamentals of Applied Statistics, Sultan Chand & Sons, New Delhi
3. Gupta, S.P. (1980) : Statistical Methods, Sultan Chand & Sons, New Delhi
4. Kapoor, J.N. & H.C.Saxena (1976) : Mathematical Statistics, S. Chand & Co .Pvt. Ltd., New Delhi
5. Mills, F.C. (1955) : Statistical Methods, Henry Hold & Co, New York
6. Speigal, M.R. (1961) : Theory and Problems of Statistics
7. Wonnacott , T. & Wonnacott, R. (1977) : Introductory Statistics for Business and Economics, John Wiley & Sons.
8. Yule, G.U. & Kendall, M.G. (1950) : An Introduction to Theory of Statistics (for theory of attributes)

SUPPLEMENTARY READINGS

1. Carmal, P.H. (latest edition) : Applied Statistics for Economics, Sir Issac Pitman and Sons Ltd., London
2. Chou, Ya-Lun (1975) : Statistical Analysis, Hold, Rinehart and Winston, New York.
3. Freund, J.E. (1964) : Mathematical Statistics, Prentice Hall
4. Freund,J.E. & William, F.J. (1979) : Modern Business Statistics, Prentice Hall, Englewood
5. Grant, R.L. (1996) : Statistical Quality Control, McGraw Hill Book
6. Hoel, P.G. (2007) : Elementary Statistics, John Wiley & Sons.
7. Mood, A.M. & Graybill, F.A.(1963) : Introduction to the Theory of Statistics McGraw Hill.
8. Yamane, Taro (1970) : Statistics: An Introductory Analysis, Harper and Rew, New York.

SOCIOLOGY

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER –III

SOCIAL THOUGHT (Compulsory)

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

- Note*
1. For written paper, the students will be required to attempt **five** questions in all. Question No. 1 will be **compulsory** and cover the entire syllabus. In addition to it, students will attempt **four** essay type questions, one from each of the four units.
 2. Question No. 1 will be compulsory comprising of short answer type questions. It will consist of 12 short answer type questions of 2 marks each, out of which the students are required to attempt 9 short answer type questions ($9 \times 2 = 18$ marks).
 3. On an average, 15 hours are to be devoted to each unit.
 4. Question Nos. II to IX will be long answer questions, two questions from each unit with internal choice, consisting of 18 marks each ($4 \times 18 = 72$ marks).

Objective:

This paper intends to familiarize the students with the contributions of major thinkers in classical Sociology and their continuing relevance to its contemporary concerns. This paper offers the Honours students with an understanding of the development of Sociology as a discipline, with a focus upon classical thinkers.

Course Content :

UNIT-I

Auguste Comte : Laws of Three Stages, Hierarchy of Sciences, Positivism.

UNIT-II

Emile Durkheim : Social facts and division of labour, social solidarity; suicide and religion.

UNIT-III

Max Weber : Social action, class, status and power, types of authority; Protestant ethic and the spirit of capitalism.

UNIT-IV

Karl Marx : Historical materialism; dialectical materialism; class conflict, capitalism and theory of social change.

Essential Readings:

1. Coser, L.A. (1997) : *Masters of Sociological Thought, New York : Harcourt Brace Jovonovich*
2. Collins, Randall (1977) : *Theoretical Sociology, Jaipur : Rawat Publications.*
3. Raymond, Aron (1982) : *Main Currents in Sociological Thought, Vols. I & II, Harmondsworth: Penguin Books.*
4. Timasheff, N.S.(1967) : *Sociological Theory : Its Nature and Growth, New York : Random House.*
5. Zeitlin, I.M.(1987) : *Ideology and the Development of Sociological Theory, New Jersey : Prentice Hall.*
6. Stones Reb (ed) (2007) : *Key Sociological Thinkers Palgrave, NY.: Macmillon*
7. John A Hughes, W Sharrock Peter T. Martin(2004) : *Understanding Classical Sociology Sage, Thousand Oak*
8. Bert N Adams & R.A. Sydie (2002) : *Classical Sociological Theory, Sage, New Delhi*
9. Anthony Giddens & Philip W Sutton (2007) : *Sociology: Introductory Readings Maldon: Polity Press*

Further Readings :

- 1 Harlambos, M. (1984) : *Sociology, Themes and Perspectives, Delhi : Oxford University Press.*
2. Lemert, C. (ed.) (2004) : *Social Theory – The Multicultural & Classical Readings, Jaipur : Rawat Publications.*
3. Marx & Engles(1967) : *The Communist Manifesto, Harmondsworth : Penguin Books.*
4. Morrison, Ken, Marx, Durkheim, Weber (1995) : *Formation of Modern Social Thought, London : Sage,*
5. Sorokin, P. (1978) : *Contemporary Sociological Theories, Ludhiana : Kalyani Publishers.*
6. Judge, paramjit S, (2012) : *Foundations of Classical Theory, New Delhi, Pearson*
7. Kundu, Abhijit, (2012) : *Sociological Theory, New Delhi, Pearson*

SOCIOLOGY**SEMESTER-IV****SOCIAL PSYCHOLOGY**

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

1. For written paper, the students will be required to attempt **five** questions in all. Question No. 1 will be **compulsory** and cover the entire syllabus. In addition to it, students will attempt **four** essay type questions, one from each of the four units.
2. Question No. 1 will be compulsory comprising of short answer type questions. It will consist of 12 short answer type questions of 2 marks each, out of which the students are required to attempt 9 short answer type questions ($9 \times 2 = 18$ marks).
3. On an average, 15 hours are to be devoted to each unit.
4. Question Nos. II to IX will be long answer questions, two questions from each unit with internal choice, consisting of 18 marks each ($4 \times 18 = 72$ marks).

Objective:

This paper exposes the honours students in Sociology to the related field - Social Psychology. The purpose of this paper is to introduce the basic concepts in Social Psychology, which have a bearing on the Social-Psychological understanding of social interaction, social groups, public opinion and leadership qualities. This course prepares the students to study social phenomena from social-psychological perspectives.

Course Content :**UNIT-I**

Introduction – Nature, Scope, Application and Relationship of Social Psychology with Sociology.

UNIT-II

Perception, Motivation, Learning, Attitudes and their Measurement.

UNIT-III

Social Groups – Groups and Classification. Collective Behaviour : Crowd, Audience, Mob and their differences.

UNIT-IV

Propaganda and Public Opinion.

Leadership – Emergence, type and functions of leaders, leadership qualities.

Essential Readings:

1. *Curtis, Jack H. (1960)* : *Social Psychology, New York : McGraw Hill.*
2. *Fraser, C. & Burchell, B. (2001)* : *Introducing Social Psychology, Cambridge : Polity Press.*
3. *Kuppuswamy, B. (1980)* : *Social Psychology, Bombay, Asia Pub. House.*
4. *Krech, D. & Cretchfield, Richards (1948)* : *Theory & Problems of Social Psychology, New York : McGraw Hill, 1948.*
5. *Lindgren, H. Clay (1974)* : *An Introduction to Social Psychology, 2nd ed., New Delhi : Wiley Eastern.*
6. *Linde Smith, Strauss, A.R., Denzin, A.L. & Norman, D.(1988)* : *Social Psychology, New Jersey : Prentice Hall.*
7. *Perry, J.B. & Pugh, M.D.(1978)* : *Collective Behaviour : Response to Social Stress, Minnisotta : West Publishing Co.*

Further Readings

1. *Baron, Robert A, Branscombe Nyla R., Byrne Donn, Bhardwaj Gopa (2012)* : *Social Psychology, New Delhi, Pearson*
2. *Taylor, Shelley E., Pepla, Letitia Anne, Sears David O, (2006)* : *Social Psychology, New Delhi, Pearson*
3. *Patiwal, Suprithy, (2002)* : *Jaipur, RBSA Publication*

PHILOSOPHY

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER – III

**Paper : CONTEMPORARY WESTERN PHILOSOPHY & CONTEMPORARY INDIAN THOUGHT
AND CULTURE**

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Aims and Objectives :

The aim of this paper is to acquaint students with the theories of different western contemporary philosophers and the problems of language, perception, meaning and truth, science and God; and to familiarize the students with Indian thought and culture according to Contemporary Indian thinkers.

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

The syllabus has been divided into four units.

There shall be 9 questions in all. The first question shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks of each. It shall carry 18 marks and shall be compulsory question. Rest of the paper shall contain 4 units. Each unit shall have two questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

Unit-I

1. Idealism (Bradley).
2. Realism – Common Sense & Critical Realism (Moore, Russell & Putnam)

Unit-II

1. Language, Meaning & Truth.
2. Philosophy, Science & Religion.
3. Existentialism : Theistic and Atheistic Approaches.

Unit-III

1. Mahatma Gandhi & Tilak.
2. Ambedkar & M.N. Roy

Unit-IV

1. Sri Aurobindo
2. Swami Dayanand Saraswati, Swami Vivekananda.
3. Tagore

Essential Readings :

1. Inquiry into Meaning & Truth by Russell, Harper Collins, 1980.
2. Modern Indian Thought by V.S. Narvane, Asia, 1967.
3. Philosophy in the 20th Century by A.J. Ayer, London, Unwin, 1982.

Suggested Readings :

1. Contemporary Philosophy : Studies of Logical Positivism and Existentialism by F.C. Copleston, Continuum Intl. Pub. Group, 2003.
2. Religion of Man by Rabindranath Tagore., Macmillian Publishers, New York, 1931.
3. Srimad Bhagwad Gita Rahasya or Karma Yoga Sastra by B.G. Tilak, Manohar Book Pub., 2002, Delhi.

PHILOSOPHY
SEMESTER – IV

Paper: STUDY OF A SPECIAL PHILOSOPHER

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Aims and Objectives:

The aim of this paper is to make students study a philosopher indepth amongst the options offered.

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. The first question shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions i.e. 2 marks of each. It shall carry 18 marks and shall be compulsory question. Rest of the paper shall contain **4** units. Each unit shall have two questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

One out of the following Philosophers :

Option (i) : PLATO

- Unit-I** : Virtues : Wisdom, Courage, Temperance and Justice, Justice and Happiness : Is the just life happier than the unjust one
- Unit-II** : The meaning and purpose of education.
- Unit-III** : Nature of knowledge and its relation to sensation.
- Unit-IV** : Language and its relation to the world : Do names picture the objects named ?

OR

Option (ii) : ARISTOTLE

- Unit-I** : Form and Matter.
- Unit-II** : Aristotle's Ten Categories.
- Unit-III** : Four Causes and Change.
- Unit-IV** : Identity of Thought and Truth in the Active Reason.

OR

Option (iii) : IMMANUEL KANT

- Unit-I** : A –priori and A –posteriori judgements.
Unit-II : Nature of Space and Time.
Unit-III : Function of Categories and Significance of Antinomies.
Unit-IV : Refutation on the various proofs for the existence of God.

OR

Option (iv) : UPANISHADS

(Chandogya, Mandukya and Isa)

- Unit-I** : Mandukya’s Treatment of ‘Aum’. Symbol of Immanent and Transcendent aspects of Atman.
Unit-II : Philosophy of Being as instructed by Uddalaka Aruni in Chandogya Upanishad.
Unit-III : Nature of Atman in Isa Upanishad.
Unit-IV : Views of Upanishads on Brahman, Soul and World.

OR

Option (v) : SARTRE : Being and Nothingness

- Unit-I** : Being-in-itself and Being-for-itself.
Unit-II : Facticity.
Unit-III : Freedom, responsibility and badfaith.
Unit-IV : Being for Others, Existence of Others, the problem of embodiment.

OR

Option (vi) : NAGARJUNA

- Unit-I** : Concept of Sunya.
Unit-II : Sunyata and Pratiyasamutpada.
Unit-III : Logic and Reality.
Unit-IV : Dialectical System.

OR

Option (vii) : SAMKARA

- Unit-I** : Theory of Causation.
Unit-II : Prakriti as a Ultimate Cause.
Unit-III : Parinamavada Vs. Vivartavada.
Unit-IV : Refutation of Prakritikaranavada.

OR**Option (viii) : PATANJALI**

- Unit-I** : Language and meaning.
Unit-II : Word-meaning relationship.
Unit-III : Purpose of grammar.
Unit-IV : Sabda as a Pramana.

Essential Readings :

1. Aristotle-Metaphysics Ed. & Tr. By John Washington and with an introduction by Sir David Ross (London : Dentsons, 1956).
2. Being & Nothingness by J.P. Sartre, Washington Square Press, 1993.
3. Cambridge Companion to Sartre ed. By Christina Howells, Cambridge University Press, 1992.
4. Cratylus in Plato's Dialogues, Plato, D.N. Sedley, Cambridge University Press, 2003, Cambridge, U.K..
5. Kant-Critique of Pure Reason : Norman Kemp Smith (Tr.) (London, Macmillan, 1952).
6. Nagarjuna-Madhyamika Karika, Stcherbatsky Theo : Conception of Buddhist Nirvana Delhi : Bharatiya Vidya Prakashan, 2003.
7. Patanjali : Mahabhasya, Chaps. I & II Gita Press, Gorakhpur, 1927
8. Plato-Republic, Theatetus, Cratylus In : B. Jowett (Tr.) Plato's Dialogues (New York : Random, 1937).
9. Republic, Hackett Publishing Company, Indian Polish, 1992, U.S.A.
10. Samkara, Brahmasutrabhasya : Tarka Pada (First four Sutras, Thibaut, Sacred Books of the East, Delhi, Motilal Banarasi Dass, 1956).
11. Theatetus, Plato, Robin H. Waterfield, Penguin Books, London, 2004.

Suggested Readings :

1. A Critical History of Greek Philosophy by W.T. Stace, Macmillan India Ltd., 1982.
2. PLATO by J.C.B. Gosling, Routledge & Kegan Paul, London, 1973.
3. Sartre, Jean Paul, Between Existentialism and Marxism (Translated by) John Mathews, Verso, New York, 2005.
4. Stephen Priest (Ed.), Jean Paul Sartre, Basic Writings, Routledge, London, 2007.
5. The Philosophy of Plato by Rupert C. Lodge, Routledge & Kegan Paul, London, 1956.
6. The Philosophy of Sankara's Advaita Vedanta, S.K. Chattopadhyaya, Sarop of Sons, 2000.

PSYCHOLOGY

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER-III

PAPER : SOCIAL PSYCHOLOGY

Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Objectives :

- (I) Social Psychology course emphasizes the relationship between society and individuals. It also enables the students in understanding group dynamics, role of attitudes and leadership behaviour in the society.
- (II) Pedagogy of the Course Work :
- 80 % Lectures (including expert lectures).
 - 20 % assignments, discussion and seminars and tests.

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

There shall be 9 questions in all. Five questions are required to be attempted. The first question shall be Short Answer type containing 12 short questions spread over the whole syllabus and the students are required to attempt nine short answer type questions in about 25 - 30 words each. Each short question will carry 2 marks, totalling 18 marks, and shall be compulsory question. Rest of the paper shall contain 4 Units. Each Unit shall have two essay type questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit –4 in all.

Unit I : *Introduction* : Nature of Social Psychology, Methods of Research in Social Psychology.

Unit II : *Attitudes* : Concepts, Formation of Attitudes, Theories of Attitude Change; Measurement of Attitudes.

Unit III : *Leadership* : Functions of Leaders, Theories of Leadership (Trait Theories, Behavioural Theories, Fiedler's Contingency Model).

Unit IV : Applications of Social Psychology: Pro Social behavior, Bulling, Ragging.

PSYCHOLOGY

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER IV

Paper : RECENT PERSPECTIVES OF PSYCHOLOGY

Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Objectives :

- (I) This course aims at helping the students to appreciate the basic assumptions, principles and historical roots of modern scientific psychology. It will also help them to understand main theoretical perspective in psychology.
- (II) Pedagogy of the Course Work :
- 80 % Lectures (including expert lectures).
20 % assignments, discussion and seminars and tests.

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

There shall be 9 questions in all. Five questions are required to be attempted. The first question shall be Short Answer type containing 12 short questions spread over the whole syllabus and the students are required to attempt nine short answer type questions in about 25 - 30 words each. Each short question will carry 2 marks, totaling 18 marks, and shall be compulsory question. Rest of the paper shall contain 4 Units. Each Unit shall have two essay type questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit –4 in all.

Unit- I : *Emotional Intelligence* : Concept and Theories (Goleman, Salovey and Meyer).

Unit-II: *Spirituality and Well Being* : Concept, Measurement and Relationship with Well Being.

Unit-III: *Stress and Coronary Heart Disease;* Concept, Symptoms, Role of Stress in Coronary Heart Disease.

Unit-IV: *Positive Emotions and Mental Health:* Forgiveness, Gratitude and Mental Health.

Books Recommended :**Suggested Readings**

1. Crompton, W.C. (2005): An Introduction to Positive Psychology. Singapore: Thomson.
2. Snyder, C.R. and Lopez, S.J. (2005): Handbook of Positive Psychology. New York: Oxford University Press.
3. Brannon, L. and Feist, J. (2007): Introduction to Health Psychology. New Delhi. Thomson – Wadsworth.
4. Cohen, L.M., M.C. Chargue, D.E. and Colins, F.J.: The Health Psychology Handbook. New Delhi: Sage Publications.
5. Mohan, J. (2003) : Psychosocial Correlates of Coronary Artery Disease: A Monograph. New Delhi: Friends Publishers.
5. Mohan, J. and Sehgal , M. (2006) : Health Psychology. New Delhi: Abhijeet Publications.
7. Pestonjee, D.M. (2006): Stress and Coping: The Indian Experience. New Delhi: Sage Publications.

Reference Books:

1. Carr, A.(2004): Positive Psychology; The Science of Happiness and Human Strengths. New York: Brunner –Routledge.
2. Linley, P.A. and Joseph, S. (2004) : Positive Psychology in Practice. New York John Wiley and Sons.
3. Peterson, C. (2006): Positive Psychology. New York: Oxford University Press.
4. Friedman –Di, Mateo (1989): Health Psychology. New York: Prentice Hall.
5. Kaplan, R.M., Sallis, J.E. and Patterson, T.L. (1993): Health and Human Behaviour. New York: McGraw Hill.
6. Sarafino, P.E. (1998): Health Psychology: Biopsychosocial Interactions. New Delhi: John Wiley and Sons.
7. Taylor, S.E. (2006) : Health Psychology. New Delhi: John Wiley and Sons.
8. White, P. (2005): Biopsychosocial Medicine: An Integrated Approach to Understanding Illness, New Delhi: Oxford University Press.

GEOGRAPHY

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER-III

Paper-I : THE NATURE OF GEOGRAPHY

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Objectives :

1. To introduce the students to the philosophical and methodological foundations of the subject and its place in the world of knowledge.
2. To familiarise them with the major landmarks in development of geographic thought at different periods of time.

Course Content :

UNIT-I

- Nature and Development of Geography as a Discipline.
- Contribution of Eratosthenes, Ptolemy, Humboldt, Ritter and Darwin.

UNIT-II

Concepts in Geography:

- (i) Spatial Distribution (ii) Man-Environment Relationship (iii) Areal Differentiation and (iv) Spatial Organisation.

UNIT-III

Approaches:

Empirical/Theoretical, Systematic / Regional, Behavioural.

UNIT-IV

Schools of Thought:

Determinism, Possibilism, Neo Determinism, Humanism, Radicalism.

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The students shall attempt any 10 parts in about 25-30 words each. Each part will carry 2 marks (total 20 marks).
 2. The whole syllabus will be divided into 4 units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit and each question will carry 17.5 marks. These will be in addition to the compulsory question at Serial Number 1.
 3. Internal assessment will be based on (i) class tests, (5%), (ii) academic activities; Seminar, Project, Assignment (3%), and (iii) attendance (2%).

List of Readings

Essential Readings :

1. Husain, Majid. : *Evolution of Geographical Thought*, Rawat, Jaipur, 2001.
2. Martin, G.J. : *All Possible Worlds – A History of Geographical Ideas*, Oxford University Press, U.K., 2005.

Further Readings :

1. Adhikari, Sudeepa : *Fundamentals of Geographic Thought*, Chaitanya, Allahabad, 2004.
2. Dikshit, R.D. : *Geographical Thought : A Contextual History of Ideas*, Prentice Hall, New Delhi, 2000.
3. Hartshorne, Richard : *Perspectives on the Nature of Geography*, Rand, McNally and Co., Chicago, 1959.
4. Minshull, R. : *The Changing Nature of Geography*, Hutchinson University Library, London, 1970.

Pedagogy :

- Students of geography may be encouraged to interact with their counterparts from other disciplines and discuss the nature of the subject.
- The students may be encouraged to collect information on any theme amenable to geographical interpretation.

GEOGRAPHY

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER IV

Any one of the following optional courses :

Option (i) : POPULATION GEOGRAPHY (An Elementary Course)

OR

Option (ii) : URBAN GEOGRAPHY (An Elementary Course)

Option (i) : POPULATION GEOGRAPHY (An Elementary Course)

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Objectives :

The course is meant to provide an understanding of spatial and structural dimensions of population and the emerging issues. The course is further aimed at familiarising the students with global and regional level problems and also equip them for comprehending the Indian situation.

Course Content :

UNIT-I

Nature and scope of population geography, factors affecting distribution of population; present world pattern of population distribution. Density of population – various types of densities and their significance; broad spatial patterns of density of population in the world.

UNIT-II

Growth of population – Determinants of population growth; trends of population growth in developed and developing countries of the world.

Migration – Types, causes and consequences.

UNIT-III

Sex composition – Its determinants and world patterns.

Occupational structure – A comparative study of developed and developing countries.

Literacy–its determinants and world patterns.

UNIT-IV

Urbanization – Definition, process of urbanization; comparative study of urbanization in developed and developing countries.

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The students shall attempt any 10 parts in about 25-30 words each. Each part will carry 2 marks (total 20 marks).
 2. The whole syllabus will be divided into 4 units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit and each question will carry 17.5 marks. These will be in addition to the compulsory question at Serial Number 1.
 3. Special credit will be given to suitable use of maps.
 4. Internal assessment will be based on (i) class tests, (5%), (ii) academic activities; Seminar, Project, Assignment (3%), and (iii) attendance (2%).

List of Readings:

Essential Readings :

1. Chandna, R.C. : *A Geography of Population*, Kalyani Publishers, Delhi, 1996.
2. Clarke, J.I. : *Population Geography*, Pergamon Press, Oxford, Latest Edition.

Further Readings :

1. Chandna, R.C. : *Jansankhya Bhoogol*, Kalyani Publishers, New Delhi, 1996.
2. Crook, N. : *Principles of Population and Development*, Pergamon, New York, 1997.
3. Jones, H.R. : *Population Geography*, Harper and Row, London, 1981.
4. Sundaram, K.V. & Nangia, S. (Eds.) : *Population Geography*, Heritage, New Delhi, 1986.
5. Trewartha, G.T. : *The Less Developed Realm – A Population Geography*, McGraw-Hill, New York, 1972.
6. Trewartha, G.T. : *The More Developed Realm : A Geography of its Population*, Pergamon Press, Oxford, 1979.

Pedagogy :

1. Use maps and atlases.
2. Students should be encouraged to read Population Clock.
3. Consult census publications.
4. Organised field work.
5. Organise discussions on population issues.

Option (ii) : URBAN GEOGRAPHY (An Elementary Course)

Max. Marks	: 100
Theory	: 90 Marks
Internal Assessment	: 10 Marks
Time	: 3 Hours

Objectives:

1. To understand the process of urbanization and origin, growth and classification of urban settlements with relevant theories and models.
2. To examine the changing economic base and structure of the contemporary cities.
3. To relate urbanisation process and the evolution of the urban system.
4. To examine the contemporary urban issues and suggest new urban planning and urban policy

Course Content :**UNIT-I**

Definition, nature and scope of urban geography.

Definition of urban places.

Evolution of City through Historical Times : Ancient, medieval, modern.

UNIT-II

Site and situation of cities : Definition, importance, types.

Size and spacing of cities.

Ecological Processes : Centripetal and centrifugal forces, types of ecological processes.

UNIT-III

Internal structure of cities : Theories of internal structure and their evaluation, concentric zone theory, sector theory, multiple nuclei theory.

UNIT-IV

City – Region relations.

Umland of Cities : Definition, bases of demarcation, attributes.

Rural –Urban Fringe : Attributes and demarcation.

- Note :**
1. The compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The students shall attempt any 10 parts in about 25-30 words each. Each part will carry 2 marks (total 20 marks).
 2. The whole syllabus will be divided into 4 units. Eight questions will be set out of the whole syllabus, 2 from each Unit. The students will be required to attempt one question from each unit and each question will carry 17.5 marks. These will be in addition to the compulsory question at Serial Number 1.
 3. Internal assessment will be based on (i) class tests, (5%), (ii) academic activities; Seminar, Project, Assignment (3%), and (iii) attendance (2%).

List of Readings**Essential Readings:**

1. Carter, Harold : *The Study of Urban Geography*, Edward Arnold, London, Latest Edition.
2. Krishan, Gopal : *Nagar Bhugol*, Punjab State University Text Book Board, Chandigarh, 1974.
3. Mayer, H.M. and Kohn, L.F. (Eds.) : *Readings in Urban Geography*, University of Chicago Press, Chicago, 1964.

Further Readings :

1. Johnson, H.J. : *Urban Geography : An Introductory Analysis*, Pergamon Press, London, 1972.
2. Knox, Paul : *Urban Social Geography : An Introduction*, Longman, London, 1982.
3. Verma, LN : *Urban Geography* : Rawat Publications
4. Sidhartha K & Mukherjee S : *Cities Urbanization and Urban systems* Kisalaya Publications Pvt. Ltd., 2013.
5. Ramachandran, K : *Urbanisation and Urban Systems in India* Oxford University, Press, 1992.

Pedagogy :

- Awareness of data sources such as from Census of India, Town Planning organizations, and their applications to understand and evaluate the spatial patterns and the processes of urbanization should be highlighted in the class. This needs to be in form of selected case studies.
- Study of urban morphology and urban functions with special reference to selected towns need to be encouraged.
- Atlases and maps of NATMO and Census should be consulted and students should be given opportunity to participate in group discussions.

PUBLIC ADMINISTRATION
SEMESTER -III

PAPER- I: ADMINISTRATIVE THOUGHT

Max. Marks:	100
Theory:	90 Marks
Internal assessment:	10 Marks
Time:	3 Hours

Objective of the Paper:

The objective of the paper is to give the student an understanding of select ancient, classical, neo-classical and modern administrative thinkers and their contribution to administration .

INSTRUCTIONS FOR PAPER-SETTERS AND CANDIDATES

- For Private/University School of Open Learning (USOL) students, who have not been assessed earlier for the internal assessment, the marks secured by them in the paper will proportionately be increased in lieu of the internal assessment.

The Paper-Setter must put a note in question paper in this regard.

- The candidate shall attempt 5 questions in all (one compulsory and one each from four units). The first compulsory question shall comprise of 12 short-answer type questions, covering the whole syllabus, to be answered in 25-30 words each, out of which the candidate would be required to attempt any 9. Each question will carry 2 marks. Rest of the paper shall contain 4 units, each unit having two questions, out of which the candidate would be required to attempt one. Each question will carry 18 marks.

Unit-I

Kautilya, M.K.Gandhi and Woodrow Wilson

Unit-II

Frederick W. Taylor, Henri Fayol, Luther Gulick and L.B.Urwick

Unit-III

Max Weber, Elton Mayo and M.P.Follet

Unit-IV

Herbert A. Simon, Abraham Maslow and Fred W. Riggs

Essential Readings

- Bertram, M. Gross.(1964).*The Managing of Organisations: The Administrative Struggle* .London: Mac Millan Publishers.
- Fred W, Rigg.(1964).*Administration in Developing Countries* .Boston Houghton.
- George, C.S.(1974).*History of Management Thought*.New Delhi: Prentice Hall.
- Hooja, R & Arora, R. K. (2007).*Administrative Theories* .Jaipur: Rawat Publicaion.
- Katariya,S.(2011). *Administrative Thinkers* .New Delhi: National Publishing House Jaipur.
- Maheshwari ,S.R.(2003) . *Administrative Thinkers* .New Delhi: MacMillan.
- Prasad & Prasad.(2007). *Administrative Thinkers* .New Delhi: Sterling Publishers,Reprint.
- Sapru, R.K.(1996).*Theories of administration* .New Delhi: S. Chand.
- Simon, A. Herbert.(1976). 3rd Ed. *Administrative Behaviour: A Study of Decision Making Process in Administrative Organisation* . New York: Macmillan.
- Sudha , G.S.(2004). *Management of History Thinkers*.Jaipur : R.B.S.A. Publishers .

Further Reading

- Barnard, C. (1974).*The Functions of the Executive* . London: Oxford University Press.
- Pugh, D. S. (1984). 2nd Ed. *Organisation Theory* .Harmondsworth :Penguin Books.
- Rabin, J. & Others.(2007). 3rd Ed.*Handbook of Public Administration*. New York: Marcel Dekker.
- Silverman, D.(1970).*The Theory of Organisation* . London: Heinemann.

PUBLIC ADMINISTRATION

SEMESTER-IV

PAPER- II: The candidates have to select one out of the following three options:

Option (i) : Agricultural Administration in India

Option (ii) : Industrial Administration in India

Option (iii) : Police Administration

Option (iv) : Public Policy and Analysis

PAPER-II – Option (i): AGRICULTURAL ADMINISTRATION IN INDIA

Max. Marks:	100
Theory:	90 Marks
Internal assessment:	10 Marks
Time:	3 Hours

Objective of the Paper:

The objective of the paper is to give the student an in-depth knowledge about the role of agriculture in the economic development of the country, role of technology in agricultural development, marketing of agricultural produce. It would also give understanding about the agricultural policies of the government and introduce the student to certain related issues like agricultural finance, agricultural education, research, and extension.

INSTRUCTIONS FOR PAPER-SETTERS AND CANDIDATES

- For Private/University School of Open Learning (USOL) students, who have not been assessed earlier for the internal assessment, the marks secured by them in the paper will proportionately be increased in lieu of the internal assessment.

The Paper-Setter must put a note in question paper in this regard.

- The candidate shall attempt 5 questions in all (one compulsory and one each from four units). The first compulsory question shall comprise of 12 short-answer type questions, covering the whole syllabus, to be answered in 25-30 words each, out of which the candidate would be required to attempt any 9. Each question will carry 2 marks. Rest of the paper shall contain 4 units, each unit having two questions, out of which the candidate would be required to attempt one. Each question will carry 18 marks.

Unit-I

Role of Agriculture in Economic Development
Problems of Agricultural Development
Agriculture Policy

Unit-II

Agriculture Development under Five-Year Plans
Centre-State Relations in Agriculture
Agriculture Administration at the Central and State Levels

Unit-III

New Technology for the Development of Agriculture
Marketing of Agriculture Produce
Agriculture Finance and Rural Indebtedness

Unit-IV

Role of NABARD in Agricultural Development
Agricultural Education and Research
World Trade Organisation and Agriculture

Essential Readings

Chaudhary, P. (1972). *Readings in Indian Agricultural Development*. London: George Allen & Unwin.
Ghosh, R.N.(1977). *Agriculture in Economic Development with Special Reference to Punjab*. New Delhi: Vikas.
Mahajan, V.S. (1990). *Agriculture and Rural Economy in India*. New Delhi: Deep & Deep Publications.
Rao, C.H. Hanumantha.(1975). *Technological Change and Distribution of Gains in Indian Agriculture*. Delhi: Macmillan.

Further Readings

Government of India. (2007-2012). 11th Five Year Plan.
Government of India.(1976) . *National Commission on Agriculture (Reports)* .New Delhi: Manager of Publications.
Government of India.(Recent Year). *Economy Survey*. Ministry of Finance, Economic Division.
N.C.A.E.R. (1974). *Credit Recruitment for Agriculture*. New Delhi.
Planning Commission. 12th Plan Approach Paper

PAPER-II – Option (ii): INDUSTRIAL ADMINISTRATION IN INDIA

Max. Marks:	100
Theory:	90 Marks
Internal assessment:	10 Marks
Time:	3 Hours

Objective of the Paper: The objective of the paper is to give the student an insight and rationale into the concept of Industrialization, role of Public Enterprises in industrial development and the concepts of privatization and disinvestment. It would also give an understanding about the industrial policies of the government and introduce the student to certain related issues like industrial pollution, industrial sickness, and industrial dispersal.

INSTRUCTIONS FOR PAPER-SETTERS AND CANDIDATES

- For Private/University School of Open Learning (USOL) students, who have not been assessed earlier for the internal assessment, the marks secured by them in the paper will proportionately be increased in lieu of the internal assessment.

The Paper-Setter must put a note in question paper in this regard.

- The candidate shall attempt 5 questions in all (one compulsory and one each from four units). The first compulsory question shall comprise of 12 short-answer type questions, covering the whole syllabus, to be answered in 25-30 words each, out of which the candidate would be required to attempt any 9. Each question will carry 2 marks. Rest of the paper shall contain 4 units, each unit having two questions, out of which the candidate would be required to attempt one. Each question will carry 18 marks.

UNIT-I

Industrialization – Meaning, Objectives and Rationale
 Role of Industry in Economic Development
 Problems of Industrialization in India

UNIT-II

Industrial Policy Resolution of 1948 and 1956
 New Industrial Policy of 1991
 Industrial Finance – Sources, Problems and Remedies

UNIT-III

Role of Public Enterprises in Industrial Development of India
 Privatization – Meaning, Methods, Merits and Demerits
 Disinvestment – Meaning, Methods, Merits and Demerits

UNIT-IV

Industrial Pollution – Meaning, Types and its Impact on Environment
 Industrial Sickness – Meaning, Extent and Magnitude, Causes and Remedies
 Industrial Dispersal – Meaning and Policy Measures

Essential Readings

Aggarwal, A.N. (2001). *Indian Economy*. New Delhi : Vikas Publishing House.
 Dutt,R. (2009).*Indian Economy* .New Delhi: S.Chand&Company Private Limited.
 Kuchhal,S.C.(1983).*Industrial Economy of India*.Allahabad : Chaitnaya Publishing House.
 Marathe,S.S.(1986).*Regulation and Development: The Indian Policy Experience of Controls over Industry* .New Delhi: Sage Publications.

Further Readings

- Dhar,P.K.(2007).*Indian Economy : Its Growing Dimensions*.New Delhi: Kalyani Publishers.
- Govt. of India.(2002). *Planning Commission:10th Five Year Plan 2002-2007* .New Delhi: Planning Commission.
- Government of India.*Economic Survey* (Recent Years) Ministry of Finance, Economic Division.
- Sivayya, K.V., & Dass, V.B.M. (2004).*Indian Industrial Economy* . New Delhi: S.Chand & Company Private Limited.

PAPER-II – Option (iii): Police Administration

Max. Marks:	100
Theory:	90 Marks
Internal assessment:	10 Marks
Time:	3 Hours

Objective of the Paper:

The objective of the paper is to give the student an in-depth understanding about the evolution of police system in India, need and importance of police in society, personnel aspects of police administration like recruitment, training, promotion, service conditions etc. It would also give an understanding about the expectations of the public from police and introduce the student to certain related issues like community policing, e-governance in police, attitudinal change in police services etc.

INSTRUCTIONS FOR PAPER-SETTERS AND CANDIDATES

- For Private/University School of Open Learning (USOL) students, who have not been assessed earlier for the internal assessment, the marks secured by them in the paper will proportionately be increased in lieu of the internal assessment.

The Paper-Setter must put a note in question paper in this regard.

- The candidate shall attempt 5 questions in all (one compulsory and one each from four units). The first compulsory question shall comprise of 12 short-answer type questions, covering the whole syllabus, to be answered in 25-30 words each, out of which the candidate would be required to attempt any 9. Each question will carry 2 marks. Rest of the paper shall contain 4 units, each unit having two questions, out of which the candidate would be required to attempt one. Each question will carry 18 marks.

Unit-I

Meaning and significance of Police Administration
 Evolution of Police Administration in India
 Police Reforms in India

Unit-II

Organization and functions of Union Ministry of Home Affairs
Police Administration at State level
Police Administration at District level

Unit-III

Police Personnel Administration in India: Recruitment and Training of Police Personnel at Centre (IPS) and State level (SPS)
Service conditions and Discipline in Police Services

Unit-IV

The Concept and Need of Community Policing.
Concept & Importance of E-Governance in Police.
Attitudinal Change in Police: Concept, Significance and Methods.

Essential Readings

- Chaturvedi, J.C. (2006). *Police Administration and Investigation of Crime*. New Delhi: Isha Books.
- Ghosh, S.K. & Rustamji, K.F.M. (1993,1994,1995). *Encyclopaedia of Police in India*, Vol. I-III. New Delhi: Light and Life Publishers.
- Gupta, A. (2007). *The Police in British India 1861-1947*. New Delhi: Bureau of Police Research and Development.
- James, V.D. (1998). *National Police Commission: Issues For Rethinking*. New Delhi: APH Publishing Corporation.
- Muthuswamy, P. (1989). *Swamy's Manual on Disciplinary Proceedings*. Chennai: Swamy Publishers Ltd.
- Stahl, O. G. (1975). *Public Personnel Administration*. New Delhi: Oxford & IBH Publishing Co.

PAPER-II-Option (iv) : Public Policy and Analysis

Max. Marks:	100
Theory:	90 Marks
Internal assessment:	10 Marks
Time:	3 Hours

Objective of the Paper:

The purpose of this course is to provide students an understanding of the basic concepts of public policy and the environment in which it operates .It attempts to help students understand and gain insights into the various stages in policy process with special reference to the social, political and administrative environment prevailing in India.

INSTRUCTIONS FOR PAPER-SETTERS AND CANDIDATES

For Private/University School of Open Learning (USOL) students, who have not been assessed earlier for the internal assessment, the marks secured by them in the paper will proportionately be increased in lieu of the internal assessment.

The Paper-Setter must put a note in question paper in this regard.

The candidate shall attempt 5 questions in all (one compulsory and one each from four units). The first compulsory question shall comprise of 12 short-answer type questions, covering the whole syllabus, to be answered in 25-30 words each, out of which the candidate would be required to attempt any 9. Each question will carry 2 marks. Rest of the paper shall contain 4 units, each unit having two questions, out of which the candidate would be required to attempt one. Each question will carry 18 marks.

Unit I

Public Policy - Meaning, Significance and Types
Distinction between Policy, Planning , Decision making and Goals; Policy Cycle
Policy Analysis- Meaning, Significance; Approaches to Policy Analysis

Unit-II

Public Policy Formulation:Models of Policy-Making:Incremental, Rational, Institutional
Role of Legislature, Executive, Judiciary, Political Parties in policy formulation

Unit-III

Public Policy Implementation :
Role of Executive, Legislature, Bureaucracy and Judiciary in Policy Implementation
Major problems in policy implementation

Unit IV

Policy Monitoring and Evaluation ; Criteria for Evaluation;
Problems in Policy Evaluation

Essential Readings

Birkland, Thomas A. (2005) .An introduction to the Policy Process: Theories , Concepts and Models of Public Policy Making M.E.Sharpe

Dye , Thomas (2002) Understanding Public Policy (New Delhi:Pearson Education Singapore (P) Ltd.,

Henry, Nicholas (2015) Public Administration and Public Affairs,(New Jersey:Prentice Hall,Twelfth Edition,

Mathur , Kuldeep (2013) .Public Policy and Politics in India:How Institutions Matter? (Oxford,

Manon, Vineetha (2014) Public Policy and Administration,Wisdom Press , New Delhi,

Sapru, R.K. Public Policy: Art and Craft of Policy Analysis (New Delhi: Prentice Hall of India, learning 2nd Edition.)

Furthur Readings

Anderson, J. E. (2005). *Public Policy Making (6th ed.)*. New York:Houghton Mifflin Co.

Ayyar, V. R.V. (2009). *Public Policy Making in India*.New Delhi:Pearson.

Frank. F, Miller, G. J., & Sidney, M.S. (2007).*Handbook of Public Policy Analysis Theory, Politics and Methods*, Boca Raton, Florida: CRC Press.

Nagel . S.S. (1991) . *Public Policy:Goals, Means and Methods*. New York: St. Martin Press.

Rabin J., Hildreth, W., & Miller, G. (2007).*Handbook of Public Administration (3rd ed.)*.Florida: Taylor & Francis Group.

ANCIENT INDIAN HISTORY, CULTURE & ARCHAEOLOGY

B.A. (HONOURS) SECOND YEAR (SEMESTER SYSTEM) EXAMINATION, 2017-18

SEMESTER-III

Note : The students shall have to opt for one paper for Semester III examination out of the following two papers :

OUTLINES OF TEST

- Paper I : Social ideas and social life from the earliest times to 1000 A.D.
 Paper-II : Economic ideas & economic life from the earliest times to 1000 A.D.

Paper-I : SOCIAL IDEAS AND SOCIAL LIFE FROM THE EARLIEST TIMES TO 1000 A.D.

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Objective :

- The primary objective of this paper is to acquaint the students with the origin and development of social institutions and ideas so peculiar to Indian society. It will also made a survey of the social life of the people in ancient India.
- Pedagogy of the Course Work :**
The students should be given an idea of the chronology and contents of the sources mentioned above. The changing pattern in social life should also be highlighted.

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions. It shall carry 18 marks i.e. 2 marks of each and shall be **compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

UNIT-I

- Sources: Vedic Literature, Epics, *Manu Smriti* and *Kamsutra* of Vatsayayana.
- Four Purusharthas; Sixteen Samsakaras.

UNIT-II

- Origin and development of caste system.
- Slavery in ancient India.
- Stages of life—four ashramas.

Unit-III

6. Family life, law of inheritance.
7. Development of education in Ancient India.
8. Dress, ornaments, foods and drinks.

Unit-IV

9. Position of women in ancient India.
10. Institution of marriage.

Essential Readings :

1. Altekar, A.S. : *The Position of Women in Hindu Civilization*, Motilal Banarsidass, Delhi, 1991.
2. Altekar, A.S. : *Education in Ancient India*, rpt. Gyan Publishing House, New Delhi, 2009.
3. Banerji, S.C. : *Society in Ancient India*, D.K. Print World, New Delhi, 1997.
4. Basham, A.L. ed. : *Cultural History of India*, Oxford University Press, New, Delhi, 1957.
5. Chanana, D.R. : *Slavery in Ancient India, as depicted in Pali and Sanskrit Texts*, New Age Printing Press, Delhi, 1960.
6. Ghurye, G.S. : *Caste and Class in India*, Popular Prakashan, Bombay, 1950.
7. Majumdar, B.P. : *Social and Economic History of North India*, Budh Prakashan, Calcutta, 1960.
8. Mookerjee, R.K. : *Ancient Indian Education*, 3rd ed. Cosmo Publications, London, 1960.
9. Sharma, B.N. : *Social Life in Northern India*, Munshiram Manoharlal, Delhi, 1966.

Paper-II : ECONOMIC IDEAS & ECONOMIC LIFE FROM THE EARLIEST TIMES TO 1000 A. D.

Max. Marks	: 100
Theory	: 90 Marks
Internal Assessment	: 10 Marks
Time	: 3 Hours

Objective :

1. The main objective of this paper is to familiarize the students with economic ideas as contained in the secular and non-secular literature of our country. It will also make a survey of the economic life in ancient India to help the students to understand economic problems of the people.
2. **Pedagogy of the Course Work :**
The students should be given an idea of the chronology, authorship and contents of the sources mentioned above. The changing condition of agriculture, industries, and trade and commerce should also be highlighted.

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions. It shall carry 18 marks i.e. 2 marks of each and shall be **compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

UNIT-I:

1. Sources : Vedic literature, Epics, *Arthashastra* of Kautilya and *Nitisara* of Kamandaka.
2. Agriculture in ancient India, ownership of land.

UNIT-II:

3. Taxation.
4. Industries and industrial products in ancient India.

UNIT-III:

5. Types of labour and wages.
6. Introduction and development of coinage.

Unit-IV

7. Trade and Commerce in ancient India.
8. Guild System.
9. Trade routes and transport.

Essential Readings :

1. Chakraborty, S.N. : *A Study of Ancient Indian Numismatics*, Bhartiya Publishing House, Varanasi, 1963.
2. Gopal, Lallanji : *Economic Life in Northern India (700 to 1200 A.D.)* Motilal Banarsidass, Delhi, 1965.
3. Maity, S.K. : *Economic Life in North India in the Gupta Period*, Motilal Banarsidass, Calcutta, 1970.
4. Majumdar, B.P. : *Social and Economic History of North India*, Firma KLM, Calcutta, 1960.
5. Majumdar, R.C. : *Corporate Life in Ancient India*, Firma KLM, Calcutta, 1922.
6. Moti Chandra : *Sarthavaha*, Shakti Malik Abhinav Publishers, Patna, 1953.
7. Moti Chandra : *Trade and Trade Routes in Ancient India*, Shakti Malik Abhinav Publishers, Delhi, 1977.
8. Saletore, R.N. : *Early Indian Economic History*, N.M. Tripathi Publishers, Bombay, 1973.

ANCIENT INDIAN HISTORY, CULTURE & ARCHAEOLOGY

SEMESTER-IV

Note : The students shall have to opt for one paper for Semester - IV examination out of the following two papers :

OUTLINES OF TEST

Paper-III : Political ideas and institutions from the earliest times to 1000 A.D.

Paper-IV : History of Art and Architecture (Earliest times to C. 1000 A.D.)

Paper-III : POLITICAL IDEAS AND INSTITUTIONS FROM THE EARLIEST TIMES TO 1000 A.D.

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Objective :

1. The emphasis of this paper will be on the development of political ideas as enshrined in our secular and non-secular literature. It will also make a study of the administrative systems during various periods focusing on the ideologies of the kings.
2. **Pedagogy of the Course Work :**
The students are expected to know the broad rules laid down by the lawgivers and have knowledge of the administrative organization in different periods. They should be familiarized with the changing patterns of administrative set up at different times.

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions. It shall carry 18 marks i.e. 2 marks of each and shall be **compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

UNIT-I:

1. Sources : Vedic literature, Epics, the *Arthashastra* of Kautilya, *Smritis* of Manu and Yajnavalkya.
2. Political Institutions : State, King, Council of Ministers and Foreign Relations.

UNIT-II:

3. Administrative organization during the Vedic period.
4. Administrative Organisation under the Mauryas.

UNIT-III:

5. Administrative Organisation under the Kushanas.
6. Administrative Organisation under the Guptas.

UNIT-IV:

7. Administrative Organisation under the Pushyabhutis.
8. Administrative Organisation under the Cholas.

Essential Readings :

1. Altekar, A.S. : *State and Government in Ancient India*, Motilal Banarsidass, Delhi, 1958.
2. Devhuti, D. : *Harsha, A Political Study*, Oxford University Press, New Delhi, 2001.
3. Dikshitar, V.R.R. : *Hindu Administrative Institutions*, University of Madras, Madras, 1929.
4. Ghoshal, U.N. : *A History of Indian Political Ideas*, Oxford University Press, London, 1959.
5. Goyal, S.R. : *History of Imperial Guptas*, Central Book Depot, Allahabad, 1968.
6. Jayaswal, K.P. : *Hindu Polity*, Chowkhamba Sanskrit Pratisthan, Banglore, 1967, 2005.
7. Mukherjee, B.N. : *Rise and Fall of the Kushanas*, Firma KLM, Calcutta, 1988.
8. Prasad, Beni : *State in Ancient India*, Central Book Depot, Allahabad, 1974.
9. Satya Shrava : *The Sakas in India*, Motilal Banarsidass, New Delhi, 1981.
10. Sharma, R.S. : *Some Aspects of Political Ideas and Institutions in Ancient India*, Motilal Banarsidass, Delhi, 2001.
11. Shastri K.A.N. : *The Cholas, Madras, 1975; Chola Vansha*, New Delhi, 1979 (In Hindi).
12. Thapar, Romila : *The Mauryas Revisited*, K.P. Bagchi and Company, Calcutta, 1988.
13. Thapar, Romila : *Ashoka and the Decline of the Mauryas*, 2nd ed. Oxford University Press, New Delhi, 1977.

Paper VII: HISTORY OF ART AND ARCHITECTURE (EARLIEST TIMES TO C. 1000 A.D.)

Total Marks	:	100
Theory	:	90
Internal Assessment	:	10
Total	:	3 Hours

Objectives :

The main objective of the paper is to acquaint the students with the architecture of ancient Buddhist and Hindu monuments, stone and bronze sculptures, that form an integral part of ancient history and heritage, for comprehensive understanding of the subject.

- Note :*
1. The paper setter is required to set 9 questions in all.
 2. The candidates are required to attempt five questions in all.
 3. All questions shall carry equal marks.
 4. The first question shall be short answer type containing 15 short questions spread over the entire syllabus. The candidates are required to attempt 9 short questions in about 25 to 30 words each. It shall carry 18 marks and shall be a **compulsory** question.
 5. The rest of the paper shall contain 4 Units. The entire syllabus has been divided into 4 Units. Each unit shall have two questions and the candidate shall be given internal choice i.e. the candidate shall attempt one question from each Unit i.e. 4 in all, of 18 marks each.

UNIT-I :

- (a) Harappan architecture
- (b) Harappan sculptures.

UNIT-II :

- (a) Stupa Architecture – Sanchi and Amaravati Stupas
- (b) Rock-cut Architecture– Lomas Rishi, Ajanta and Ellora Caves

UNIT-III:**Temple Architecture :**

- (a) Gupta temples.
- (b) *Nagara style temples* – Chandella.
- (c) *Dravida style temples* – Chola.
- (d) *Vesara style temples* – Chalukya.

UNIT-IV:**Sculpture**

- (a) Early Period – Mauryan, Sunga and Kushanas.
- (b) Gupta and Early Medieval – Gupta, Pala and Chola.

Pedagogy of the Course Work :

Besides giving an outline of the history and salient features of the topics enumerated in the syllabus, students should be thoroughly acquainted with important monuments and images in stone and bronze of each period. Important schools of art should also be taught. Constant help of visual aids like slides and transparencies should form integral part of teaching. Field work trips to museums and sites of monuments should be undertaken.

Essential Readings :

1. Agrawala, P.K. : *Gupta Temple Architecture*, Prithvi Prakashan, Varanasi, 1968.
2. Agrawala, V.S. : *Gupta Art*, U.P Historical Society, Lucknow, 1948.
3. Agrawala, V. S. : *Indian Art*, Prithvi Prakashan, Varanasi, 1965.
4. Brown, Percy : *Indian Architecture (Buddhist and Hindu Period)*, D.B. Taraporevala Sons, Bombay, 1971.
5. Dehejia, Vidya : *Early Buddhist Rock Temples : A Chronological Study*, Thomson and Hudson Ltd., London, 1972.
6. Gangoly, O.C. : *South Indian Bronzes*, Nababharat Publishers, Calcutta, 1978.
7. Harle, J.C. : *Gupta Sculpture*, Munshiram Manoharlal, New Delhi, 1996.
8. Huntington, S. : *The Art of Ancient India (Buddhist, Hindu, Jain)*, Weather Hill, Tokyo, 1985.
9. Kramrisch, Stella : *Indian Sculpture, 2 Vols.*, Motilal Banarasidas, Delhi, 1981.
10. Krishna Deva : *Temples of North India*, National Book Trust India, New Delhi, 2000
11. Ray, Niharranjan : *Maurya and Sunga Art*, Indian Studies, Calcutta, 1965.
12. Rowland, R. : *The Art and Architecture of India*, Penguin Books, London, 1953.
13. Saraswati, S.K. : *Survey of Indian Sculpture, 2nd ed.*, Munshiram Manoharlal, New Delhi, 1975.
14. Srinivasan, K.R. : *Temples of South India*, National Book Trust, India, New Delhi, 1998.

POLICE ADMINISTRATION

B.A. (HONOURS) 3rd Semester EXAMINATION, 2017-18

SEMESTER-III

Semester III : Police Administration and Crime

(A) Course Objectives:

The objective of this course is to introduce to the students, the Concept, Characteristics, and Causes of Crime. The endeavour also is to discuss the special forms of crime. Towards the end the students will be imparted knowledge relating to the role of Police in controlling crime.

(B) Pedagogy of the Course Work:

90 per cent of the Course Content would be delivered through Lecture Method and rest 10 per cent would comprise of :

- i. Internal Test-5%;
- ii. Academic activities (Seminar, Project, Assignment)-3%;
- iii. Attendance-2%

(C) Instructions for Paper Setters and Candidates:

- The maximum marks for the paper will be 100. The question paper will be of 90 marks and internal assessment of 10 marks.
- Time allowed will be 3 hours.
- There shall be 9 questions in all.
- The first question shall be compulsory and be short answer type containing 12 short questions spread over the whole syllabus and to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions carrying 2 marks (9x2 = 18 marks).
- Rest of the paper shall contain 4 units. Each unit shall have two questions and the candidates shall be given internal choice i.e. the candidates shall have two questions and the candidates shall attempt one question from each unit i.e. four questions in all. Each question will carry 18 marks (4x18 = 72 marks).

(D) Course Content:

Unit – I

Crime: Concept, Characteristics and Classification.

Causative factors of Crime.

Crime Statistics in India: Sources and Problems.

Unit- II

Organized Crime: Meaning, Characteristics and Types.

White Collar Crime: Meaning, Elements and Types.

Cyber Crime: Meaning, Causes and Types.

Unit- III

Crime Against Women: Concept, Incidence and Remedies.

Juvenile Delinquency: Meaning, Causes and Treatment.

Youth and Crime: Meaning, Characteristics and Trends.

Unit- IV

Drug related Crimes: Concept, Extent and Remedial Measures.

Custodial Crime: Concept, Extent and Remedial Measures.

Role of Police in Crime Control.

Essential Readings

1. Paranjpe, N.V. : Criminology and Penology, Central law Publication, Allahabad, 2008.
2. Ahuja, R. : Criminology, Rawat Publication, Jaipur, 2008
3. Siddique, Ahmad : Criminology- Problems and Perspectives, Eastern Books Co., Lucknow, 1993
4. Singh Deipa, Singh K P : Criminology, Penology and Victimology, The Bright Law House, New Delhi, 2013

Further Readings

1. Gandhirajan, C. K : Organized Crime, A.P.H. Publishing Corp., New Delhi, 2004
2. Venugopal, Rao : Facets of Crime in India, Allied Publishers Private Limited, Bombay, 1967
3. Abadinsky, Howard : Organized Crime, Wordsworth- Thomson Learning Academy Resources Centre, C.A., 2003

POLICE ADMINISTRATION

B.A. (HONOURS) 4th Semester EXAMINATION, 2017-18

SEMESTER-IV

Paper : Correctional Administration

(A) Course Objectives:

The Prime objective of this course is to familiarize the students with the meaning, nature , scope and principle of correctional administration. In addition the efforts are made to discuss with the students, Prison administration along with the alternative non-institutional methods of Probation and Parole elaborately.

(B) Pedagogy of the Course Work:

90 per cent of the Course Content would be delivered through Lecture Method and rest 10 per cent would comprise of :

- i. Internal Test-5%;
- ii. Academic activities (Seminar, Project, Assignment)-3%;
- iii. Attendance-2%

(C) Instructions for Paper Setters and Candidates:

- The maximum marks for the paper will be 100. The question paper will be of 90 marks and internal assessment of 10 marks.
- Time allowed will be 3 hours.
- There shall be 9 questions in all.
- The first question shall be compulsory and be short answer type containing 12 short questions spread over the whole syllabus and to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions carrying 2 marks (9x2 = 18 marks).
- Rest of the paper shall contain 4 units. Each unit shall have two questions and the candidates shall be given internal choice i.e. the candidates shall have two questions and the candidates shall attempt one question from each unit i.e. four questions in all. Each question will carry 18 marks (4x18 = 72marks)

Unit- I

Meaning, Nature and Scope of Correctional Administration.

Punishment: Concept and Theories.

Forms of Punishment.

Unit- II

Probation: Concept and Development.

Parole: Concept and Development.

Prison: Concept and Origin.

Unit- III

Statutory Prisons in India.

Classification of Prisons in India.

Problems of Prisons in India.

Unit-IV

Prison Reforms in India.

Open Prisons: Concept, Origin and Advantages.

Prisons and Human Rights.

Essential Readings

1. Paranjpe, N.V. : Criminology and Penology, Central Law Publication, Allahabad, 2008
2. Ahuja, R. : Criminology, Rawat Publication, Jaipur, 2008
3. Abadinsky, Howard : Organized Crime, Wordsworth- Thomson Learning Academy Resources Centre, C.A., 2003
4. Davies, Martin : Prisoners of Society: Attitudes and After-Care.
5. Singh Deipa, Singh K P : Criminology, Penology and Victimology, The Bright Law House, New Delhi, 2013

Further Readings

1. Abadinsky, Howard : Organized Crime, Wordsworth- Thomson Learning Academy Resources Centre, C.A. 2003
2. Hassine, Victor : Life without Parole: Living in Prison Today, Roxbury Publishing Company, California, 2004.
3. Carrbine, Eamonn. et.al. : Criminology: A Sociological Introduction, Routledge, London, 2005.
4. Pollock, Joycein M. : Prisons and Prison Life : Costs and Consequences, Roxbury Publishing Company, California, 2004.
5. Pachauri, S.K : Prisoners and Human Rights, A.P.H. Publishing Corporation, New Delhi, 1999.
6. Paluch (Jr.), James A. : A Life for a Life-Life Imprisonment: America's Other Death Penalty, Edited by Bernard, Thomas J. & Johnson, Robert, Roxbury Publishing Company, California, 2004.
7. Sharma, S.D. : Creative Activities and the Law: Human Rights Approach, Deep & Deep Publications, 2007.

MUSIC (VOCAL AND INSTRUMENTAL)**B.A. (HONOURS) SECOND YEAR EXAMINATION, 2017-18****SEMESTER-III****General Instructions:-**

- 1) In case of the private candidates, there will be no internal assessment and the marks obtained in the external assessment of the practical examination shall be proportionately increased.
- 2) Harmonium will not be allowed as accompaniment in vocal music, but harmonium can be used while singing Alankars.
- 3) While sending the syllabus to paper-setter in theory, the syllabus prescribed for the practical paper also to be sent.
- 4) There will be ten questions in five units. The candidates will be required to attempt any five questions selecting at least one from each unit.
- 5) Separate Practical paper shall be set for each session from the syllabus prescribed for Practical Paper- B.
- 6) There should not be more than eight students in a batch for practical examination.
- 7) There would be upto ten students in one section in practical class

Paper-A: THEORY (3 Hours duration) : 45 marks
(Duration 45 minutes 06 practical+ 02 Theory periods per week)

Paper-B: PRACTICAL (20 minutes duration) : 45 marks

- | | | |
|--------------|-----------|------------|
| (i) | Viva | : 35 marks |
| (ii) | Harmonium | : 05 marks |
| (iii) | Tabla | : 05 marks |

Internal Assessment (Theory + Practical) (05 +05) : 10 marks

Total : 100 marks

PAPER-A: THEORY (Duration 45 minutes, 02 Theory periods per week)

UNIT-I

1. Concept and characteristics of Raga Dhyam.
2. Role of computer to promote Indian Classical Music
3. A study of Jati Lakshan

UNIT-II

1. Detailed Study of Ghranas of the following:
 - (a) Khayal Gayan
 - (b) Sitar Vadan.
2. A study of the following:-
Thumri, Maseetkhani, Razakhani Gat, Trivat
3. Brief Knowledge of the following:-
Nada, Swara, Shruti, Nyas, Vadi, Laya & Tala.

UNIT-III

1. Brief biographical sketches and contributions towards music of the following Musicians:
 - (a) Ustad Mushtaq Ali Khan.
 - (b) Ustad Alladiya Khan
 - (c) Ustad Alaudin Khan

UNIT-IV

1. Shudha Vikrat Swaas of Bharat and Sharangdev
2. Study of Shruti, Chaturarna or Bharat and Sharmgdev
3. Importance of Laya and Tala

UNIT-V

1. Description and Comparative study of Detailed and Non-detailed Ragas :-
 - (a) Detailed Ragas :-Hamir, Darbari
 - (b) Non-detailed Ragas :-Adana, Kamod
2. Notation of Detailed Ragas and Talas
 - A)
 - i) Notation of Khayal/Gat
 - ii) Notation of Tala prescribed in the syllabus
Dhmar, Adachantal, Deepchandi
 - B) Objective type questions

Paper-II: Practical (Choice & Viva)

45 Marks

Internal Assessment : 05 Marks
Time : 45 Minutes

(a) Choice (Solo performance)	:	22.5 Marks
(b) Practical Test	:	22.5 Marks
(i) Tuning	:	5 Marks
(ii) Capacity to play Talas on Tabla	:	2.5 Marks
(iii) Capacity to play Harmonium	:	2.5 Marks
(iv) Viva	:	12.5 Marks

Part-A: (CHOICE OF THE CANDIDATE)

(a) A candidate has to demonstrate in the Raga of his/her choice from the prescribed ragas with detailed elaborations:

(i) A Vilambit Khayal	:	7.5 marks
(ii) A Drut Khayal	:	5 marks

OR

(i) A Vilambit Gat	:	7.5 marks
(ii) A Drut Gat	:	5 marks

(b) One Dhrupad with different Layakaries in any detailed ragas 5 marks

OROne Vilambit Gat in *Chautala* with different layakaries 5 marks

(c) Tarana or one Fast Gat in Ektal 2.5 marks

(d) Any one of the following : 2.5 marks
Bhav-Geet, Bhajan, Shabad or Dhun**Part-B: (VIVA)**

(a) List of Detailed Ragas:

- (i) Darbari.
- (ii) Hamir.

(b) Non-detailed Ragas, description with Aroh, Avroh and pakad in the following Ragas:

- (i) Adana.
- (ii) Kamod.

- (c) Talas : Jhaptal, Ektal and Teental on Tabla.
- (i) One slow Khayal with extempore Alaps and Tanas in any of the detailed Ragas. 7.5 marks
- OR**
- One slow Gat with extempore Alaps and Toras in any of the detailed Ragas.
- (ii) Two fast khayals or two fast gats with elaboration in each of the prescribed Ragas. 5 marks
- (iii) Ability to recite Dhamar, Adachautal and Deepchandi talas in single. 2.5 marks.
- (iv) Tuning of your instrument. 2.5 marks
- (v) Capacity to play on Tabla the Talas prescribed in the course. 2.5 marks
- (vi) Capacity to play on the Harmonium any raga from the choice. 2.5 marks

Books Recommended:

1. Pranav Bharti : Pt. Onkar Nath Thakur
2. Abhinav Geetanjali : Pt. Ramashray Jha
3. Gharanedaar Gayaki : Varman Rao H. Deshpanday
4. Sangeetanjali : Pt. Onkar Nath Thakur
5. Pillars of Hindustani Music : B.R. Deodhar
6. Sangeet swarit : Dr. Ramakant Dwivedi
7. Sangeet Chintan : Dr. Soubhagya Vardhan Brihaspati
8. Bhartiya Sangeet Mein Vaigyanik : Aneeta Gautam
Upakarano ka Prayog
9. Saat Sur aur Sattairs Dayare : Shambu Nath Mishra
10. Raag Parichay : Harish Chandra Srivastav
11. Sangeet Prabodhika : Dr. Gyan Chand

MUSIC (VOCAL AND INSTRUMENTAL)**SEMESTER-IV****General Instructions**

- 1) In case of the private candidates, there will be no internal assessment and the marks obtained in the external assessment of the practical examination shall be proportionately increased.
- 2) Harmonium will not be allowed as accompaniment in vocal music, but harmonium can be used while singing Alankars.
- 3) While sending the syllabus to paper-setter in theory, the syllabus prescribed for the practical paper also to be sent.
- 4) There will be ten questions in five units. The candidates will be required to attempt any five questions selecting at least one from each unit.
- 5) Separate Practical paper shall be set for each session from the syllabus prescribed for Practical Paper- B.
- 6) There should not be more than eight students in a batch for practical examination.
- 7) There would be upto ten students in one section in practical class

Paper-A: THEORY (3 Hours duration)	:	45 marks
(Duration 45 minutes 06 practical+ 02 Theory periods per week)		
Paper-B: PRACTICAL (20 minutes duration)	:	45 marks
(i) Viva	:	35 marks
(ii) Harmonium	:	05 marks
(iii) Tabla	:	05 marks
Internal Assessment (Theory + Practical)	(05 +05) :	10 marks
Total	:	<u>100 marks</u>

PAPER-A: THEORY (Duration 45 minutes, 02 Theory periods per week)**UNIT-I**

1. Detailed study of Gram
2. Detailed study of Murchhna

UNIT-II

3. Role of Electronic Media in Indian Classical Music
4. Music and Fine Arts

UNIT-III

1. Brief biographical sketches and contributions towards music of the following Musicians :
 - (a) Ustad Imdad Khan.
 - (b) Ustad Abdul Karim Khan.
 - (c) Pt. V. G. Jog

UNIT-IV

1. A study of the following:-
Sitarkhani Gat , Dhun, Chaturang, Dadra
2. Brief knowledge of the following with illustrations :-
Vadi, Samvadi, Zamzama, Jod Alap, Gat, Avirbhav & Tirobhav.
3. A study of present raga Lakshan

UNIT-V

1. Notation of Detailed Ragas and Talaas
 - A) i) Notation of Khayal /Gat
 - ii) Notation of Tala prescribed in the syllabus:Tivra, Jhumra, Punjabi Theka
 - B) i) Kedar
 - ii) Des

Paper-B: Practical (Choice & Viva)

45 Marks

Internal Assessment : 05 Marks
Time : 45 Minutes

- | | | |
|--------------------------------------|---|------------|
| (a) Choice (Solo performance) | : | 22.5 Marks |
| (b) Practical Test | : | 22.5 Marks |
| (i) Tuning | : | 5 Marks |
| (ii) Capacity to play Talas on Tabla | : | 2.5 Marks |
| (iii) Capacity to play Harmonium | : | 2.5 Marks |
| (iv) Viva | : | 12.5 Marks |

Part-A: (CHOICE OF THE CANDIDATE)

- (a) A candidate has to demonstrate in the Raga of his/her choice from the prescribed ragas with detailed elaborations:
- (i) A Vilambit Khayal : 7.5 marks
- (ii) A Drut Khayal : 5 marks
- OR**
- (i) A Vilambit Gat : 7.5 marks
- (ii) A Drut Gat : 5 marks
- (c) Tarana or one Fast Gat in Ektal 2.5 marks
- (d) Any one of the following : 2.5 marks
Bhav-Geet, Bhajan, Shabad or Dhun

Part-B: (VIVA)

- (a) List of Detailed Ragas:
(i) Kedar
(ii) Des
- (b) Non-detailed Ragas, description with Aroh, Avroh and pakad in the following Ragas:
(i) Hamir
(ii) Vrindavani Sarang
- (c) Talas : Chartal, Sultal and Tilwada on Tabla.
(i) One slow khayal with extempore Alaps and Tanas in any of the detailed Ragas. 7.5 marks
- OR**
- One slow Gat with extempore Alaps and Toras in any of the detailed Ragas.
- (ii) Two fast khayals or two fast gats with elaboration in each of the prescribed Ragas. 2.5 marks
- (iii) Ability to recite Tivra, Jhoomra, and Punjabi talas in single.
- (iv) Tuning of your instrument. 2.5 marks
- (v) Capacity to play on Tabla the Talas prescribed in the course. 2.5 marks
- (vi) Capacity to play on the Harmonium any raga from the choice. 2.5 marks

Books Recommended:

1. Sangeet swarit : Dr. Ramakant Dwivedi
2. Sangeetanjali : Pt. Onkar Nath Thakur
3. Abhinav Geetanjali : Pt. Ramashray Jha
4. Sanchar Aur Sanchar Madhyam : Dr. Chandra Prakash Mishra
5. Pillars of Hindustani Music : B.R. Deodhar
6. Sangeet Visharad : Basant
7. Raag Parichay : Harish Chandra Srivastav
8. Sangeet Prabodhika : Dr. Parmanand Bansal
9. Raag ka Udbhav Evam Vikas :

HOME SCIENCE

The syllabus of Home Science for B.A./B.Sc. (Honours) Second year has been **KEPT IN ABEYANCE.**

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PHYSICS

B.Sc. (HONOURS) SECOND YEAR (3rd and 4th Semester) EXAMINATION, 2017-18

General Instructions for teachers, students and paper setters:

1. There will be two papers in each of the Semesters III-VI. Each of the papers is allocated 25 marks including 3(three) marks for the Internal Assessment. The teaching hours for each theory paper are prescribed to be 30 hours and Physics Practical and Computational Physics are prescribed to be 60 hours.
2. The number of lectures per week will be three for each theory paper and six for practicals .
3. The examination time for each theory paper as well as Physics practical paper will be three hours.The Computational Physics paper will consist of two parts(a)written examination of one hour duration,and (b)Practical examination of two hours duration . Both the parts carry equal marks.
4. Each theory paper will consist of **seven** questions comprising of three sections .First two sections will comprise of **three** questions from each of Units I and II of syllabus, and the third section will comprise of **one compulsory** question of **ten** short answer type parts covering whole syllabus.The question paper will be set for 44 marks-**All the questions in first and second sections will carry 9(nine) marks each and the compulsory question will carry 8 marks**. Student will attempt two questions from each of the first two sections and any eight parts of the compulsory question.**After evaluation of the answer books out of 44 marks, the marks will be given out of 22 marks.**
Computational Physics paper in Semester V will consist of two papers carrying equal marks:
(a)Written examination of one and half hour duration common for all the students appearing in examination.
(b)Practical examination of one and half hours duration Both the parts carry equal marks.
4. The numerical problems/exercises in the question paper should be 25-30%.
5. The use of Non-programmable calculators will be allowed (paper setters should explicitly mention this on the question paper) in the examination centre but these will not be provided by the University/College. Mobile phones and pages are not allowed in the examination hall.

PHYSICS

SEMESTER-III

Paper I : Physics of Vacuum and Low Temperature

Unit I

Basics of Vacuum Techniques: Introduction, classification of vacuum ranges, throughput, Pump speed, speed of exhaust, conductance, ultimate pressure, viscous flow, molecular flow.

Production of Low Pressures: Pump types, Gaede oil-sealed rotating vane pump, Diffusion pump, sputter ion pumps, Gettering, types of getters, Cryogenic pumps.

Measurement of Low Pressures: Types of gauges, McLeod gauge, Pirani gauge, Measurement of ultrahigh vacuum, penning gauge.

Methodology of Vacuum systems: Vacuum system, Materials for vacuum system, cleaning and sealing of vacuum system, Leak detection and its location.

(Book 1 and Book 2)

Unit II

Production and Measurement of Low Temperatures: Various methods for refrigeration, Coefficient of performance, Liquefaction of gases, Joule-Thomson effect, Principle of regenerative cooling, liquefaction of H₂ and He, Liquefaction of nitrogen, Solidification of He. Liquid He II, Thermodynamics of λ -transition, Adiabatic demagnetization, Linde's method, Temperatures below 0.01K, Low temperature thermometry and techniques, Use of liquid air and other liquefied gases.

(Book 3 and Book 4)

Recommended Books:

1. Vacuum Technology: A. Roth (North Holland, 1990).
2. Vacuum Technology: A. Guthrie (John Wiley, 1963).
3. A Treatise on Heat: M.N. Saha and B.N. Srivastava (Indian Press, 1965).
4. Low Temperature Physics: C. Dewitt, B. Dreyfus and P.G. de Gennes (Gordon & Breach, 1962).

Paper II : Electronics

Unit I

Analog Electronics

Circuit Theory: Voltage sources, Current sources, Capacitors, Inductors, Linear circuits, KCL, KVL, Mesh and Node analysis, Level shifting, Thevenin and Norton equivalent circuits, Power and energy relationships in case of R, L and C, Maximum Power Transfer Theorem, Series and parallel connection of mutually coupled coil, Equivalent circuit of transformer. (Book 1)

Transducers : Electrical transducers, Resistive transducers – Resistive position transducer, Strain gauge, Resistance thermometer, Platinum thermometer, Thermistor. Inductive transducers – Differential output transducers, LVDT, Pressure inductive transducer. Capacitive transducers, Piezo electric load cell, Thermocouple transducers.

(Book 2)

Unit II

Digital Electronics

Number systems: Binary, Hexadecimal and octal number systems, Interconversions and Binary arithmetic, 2's complement arithmetic, Binary fractions and negative binary numbers, floating point representations, Codes, Error detecting and correcting codes.

Digital Principles and Logic: Digital signals, Positive and Negative Logic, Basic digital circuits, Basic Gates – NOT, OR, AND; Universal Logic gates: NOR, NAND; Exclusive-OR gate.

Combinational Logic Circuits – Boolean Laws and De Morgan's theorems, Sum of Product method, Product of sums method, Karnaugh map (up to 4 variables).

Sequential circuits: Flip-flops – RS, JK, D, clocked, race-around conditions in JK flip-flop, master slave JK, Shift registers: serial in serial out, serial in parallel out, parallel in parallel out (only up to 4 bits)

(Book 3 and Book 4)

Recommended Books:

1. Circuit theory Fundamentals and Applications : Aram Budak (Prentice-Hall, 1987).
2. Electronic Instrumentation, H.S. Kalsi (Tata McGraw-Hill, 2004).
3. Modern Digital Electronics: R.P. Jain (Tata McGraw Hill, 2010).
4. Digital Principles and Applications : Malvino and Leach (Tata McGraw Hill, 2010).

PHYSICS

SEMESTER-IV

Paper III: Statistics and Numerical Techniques

Unit I

Statistics and Probability: Measures of central tendency, Arithmetic mean, median, mode, Geometric mean, Harmonic mean, Quartiles, deciles and percentiles.

Measures of dispersion : Standard deviation, mean deviation, semi-interquartile range, coefficient of variation, Moments, Skewness and Kurtosis.

Linear Correlation and Regression for Two Variables only.

Conditional probability, probability distributions, Mathematical expectation, Probability and Combinatorial analysis

(Book 1)

Counting Statistics and Error Prediction: Characterization of Data, Binomial, Normal and Poisson distributions and their applications, Estimation of the Precision of a Single Measurement, Measure of consistency of observed fluctuations with expected Statistical fluctuation, chi square, Error Propagation, Distribution of time intervals between successive random events.

(Book 2)

Unit II

Numerical Techniques:

Solution of Algebraic and Transcendental Equations: Bisection Method, Secant Method, Newton-Raphson Method.

Interpolation : Finite difference interpolation with equal intervals, Newton' Forward and Backward Interpolation Formulae, Interpolation with unequally spaced points, Lagrange's interpolation formula, Extrapolation.

Numerical integration by Trapezoidal, Weddle's and Simpson's rules, Romberg integration.

Numerical differentiation by Newtons's forward and backward difference formulae, divided difference formula.

Numerical solution of differential equations, Euler's and Runge-Kutta Method.

Method of least-squares fitting of straight line, parabola and exponential curves, least squares fitting for any non-linear function by iterative method.

(Book 3 and Book 4)

Recommended Books:

1. Schaum's Outlines Statistics: Murry R Spiegel and Larry J Stephens (Tata McGraw Hill Education Pvt. Ltd., 2011)
2. Radiation Detection and Measurement: G.F. Knoll (Wiley, New York) (2000).
3. Numerical Mathematical Analysis, J.B. Scarborough (Oxford Book Co. Kolkata) (1961).
4. Introductory *Methods of Numerical Analysis*, S.S. Sastry. PHI Learning Pvt. Ltd. (2005).
5. A First Course in Computational Physics: P.L. Devries (Wiley, New York) (1994).

Paper IV : Mathematical Physics**Unit I**

Differential Equations : Methods of separation of variables; separation of Helmholtz equation in Cartesian, spherical and cylindrical coordinates. Laplace equation in various coordinate systems, Ordinary and singular points; Examples of partial differential equations in physics, Heat Flow in one and two Dimensions.

Series solution of differential equations - Power series solution about ordinary point and regular singular point.

Special Functions in Physics : Dirac delta function, properties of delta function. Gamma function, factorial notation and applications. Beta function.

(Book 1 and Book 2)

Unit II**Special polynomials in Physics :**

Bessel's differential equation, Bessel functions of first kind, generating function, recurrence formulae, plots, zeros of Bessel functions and orthogonality.

Legendre's equation, Legendre's polynomials, plots, generating functions, recurrence relations, orthogonality, Series expansion of a function in terms of a complete set of Legendre functions, Rodrigues formula.

(Book 1 and Book 2)

Laplace transforms, Applications of Laplace transforms to derivatives and integrals, s-domain interpretation of passive circuit elements R, L and C; Analysis of simple circuits in s-domain, Transfer function, poles and zeros, Stability of circuit.

Recommended Books:

1. Mathematical Physics: P.K. Chatopadhyay (Wiley Eastern, New Delhi, 2005)
2. Mathematical methods for Physicists : G. Arfken and H.J. Weber (Academic Press, San Diego, sixth edition, 2005)
3. Circuit theory Fundamentals and Applications : Aram Budak (Prentice-Hall, 1987).

CHEMISTRY**B.Sc. (HONOURS) SECOND YEAR EXAMINATION, 2017-18****Outlines of Tests****SEMESTER - III**

	<i>Lecture Hours</i>	<i>Marks</i>	
		<i>Theory</i>	<i>Internal Assessment</i>
Paper I : Organic Chemistry-A	20	22	03
Paper II : Analytical Chemistry-A	20	22	03

Paper I : ORGANIC CHEMISTRY-A

Max. Marks	:	25
Theory	:	22
Internal Assessment	:	03
Time	:	3 Hours
Lectures	:	20

OBJECTIVE OF THE COURSE :

To teach the fundamental concept of Chemistry and their applications. The syllabus pertaining to B.Sc. (HONOURS) Semester System in the subject of Chemistry has been upgraded as per provision of the UGC module and demand of the academic environment. The course contents have been revised from time to time as per suggestions of the teachers of the Chemistry working in the Panjab University, Chandigarh and affiliated colleges. The syllabus contents are duly arranged unit wise and contents are included in such a manner so that due importance is given to requisite intellectual and laboratory skills.

Unit-I**Rearrangements and Neighbouring Group Effects I: (05 Lectures)**

Hoffmann, Curtius, Lossen-similarities, advantages and stereochemistry at the migrating group, effect of migrating group on rate of reaction. Baeyer Villiger Rearrangement.

Unit-II**Rearrangements and Neighbouring Group Effects I: (05 Lectures)**

Hydroperoxide rearrangement–migratory aptitude, Brown, Pinacol, Wolff, Stevens, Wittig and Favorskii rearrangements-participation of groups such as $-O-C-R$, halogens, Aryl, and sigma bond, nonclassical carbocation.

Unit-III**Stereochemistry I: (05 Lectures)**

Enantiomeric relationship, Diastereomeric relationship, Prochiral relationship. Conformational relationship in carbocyclic rings other than 5-membered, conformational effects on reactivity. Relationships between ring size and facility of ring closure.

Unit-IV

Stereochemistry II:

(05 Lectures)

Hard Soft Acid Base principles: pka Values. Generation of Carbon Nucleophiles by Deprotonation, Regio selectivity and stereo selectivity in enolate formation, Medium effects, O versus C as site of alkylation, examples of Stork enamine reactions.

Instructions for paper setters and candidates :

- (i) *Examiner will set total of NINE questions comprising TWO questions from each unit and ONE compulsory question of short answer type covering whole syllabi.*
- (ii) *The students are required to attempt FIVE questions in all, ONE question from each unit and the Compulsory question.*
- (iii) *Compulsory question carries six marks and remaining all questions carry four marks each.*

Suggested Books :

1. Morrison, R.T., Boyd, R.N., Organic Chemistry; 6th edition, Pubs: Prentice Hall India Pvt. Ltd., 1992.
2. Carey, F.A., Sundberg, R.J., Advanced Organic Chemistry : 4th edition, 2001.
3. Mukherji, S.M., Singh, S.P., Organic Chemistry; 1st edition, Pubs: New Age International, New Delhi, 1985, Vol. 2.

Paper II : ANALYTICAL CHEMISTRY-A

Max. Marks	:	25
Theory	:	22
Internal Assessment	:	03
Time	:	3 Hours
Lectures	:	20

OBJECTIVE OF THE COURSE :

To teach the fundamental concept of Chemistry and their applications. The syllabus pertaining to B.Sc. (HONOURS) semester System in the subject of Chemistry has been upgraded as per provision of the UGC module and demand of the academic environment. The course contents have been revised from time to time as per suggestions of the teachers of the Chemistry working in the Panjab University, Chandigarh and affiliated colleges. The syllabus contents are duly arranged unit wise and contents are included in such a manner so that due importance is given to requisite intellectual and laboratory skills.

Unit-I

Elementary Concepts I:

(05 Lectures)

Qualitative and quantitative analysis, concepts and importance of quantitative analysis, choice of methods for analysis, sampling and theories of sampling, preparation of samples for analysis, calibration standards, solution concentrations in terms of various conventions, simple equilibrium calculations, calibration of analytical weights and glass wares, significance of calibration, role of instrumental methods of analysis in analytical chemistry.

Unit-II

Elementary Concepts II: (05 Lectures)

Terms of mean, medium, precision and accuracy in chemical analysis, types of errors in analysis, determining accuracy of methods, improving accuracy of analysis, data treatment for series involving relatively few measurements, least square curve fitting, propagation of errors, significant figure convention, standard deviations, confidence limits.

Theory of volumetric and gravimetric methods of analysis, primary and secondary standards, theory of indicators and their selection for titrations, precipitation methods, optimum conditions for precipitation, steps involved in gravimetric analysis, important organic precipitants.

Unit-III

Acid-Base Equilibria : (05 Lectures)

Acids and bases, ionization equilibria for weak monobasic acids, bases and related salts, acid base titration reagents and indicators for neutralization titrations, neutralization titrations for a strong acid with a strong base, polybasic acid with a strong base.

Unit-IV

Oxidation-Reduction Equilibria : (05 Lectures)

Oxidation-reduction reactions, reduction potentials, Nernst equation, oxidation-reduction titrations and curves, oxidation-reduction indicators, applications of oxidation-reduction techniques, determination of water by the Karl Fischer titration method.

INSTRUCTIONS FOR PAPER SETTERS AND CANDIDATES :

- (i) *Examiner will set total of NINE questions comprising TWO questions from each unit and ONE compulsory question of short answer type covering whole syllabi.*
- (ii) *The students are required to attempt FIVE questions in all, ONE question from each unit and the Compulsory question.*
- (iii) *Compulsory question carries six marks and remaining all questions carry four marks each.*

Suggested Books:

1. Skoog, D.A., West, D.M., Saunders, H., Fundamentals of Analytical Chemistry, 8th edition, International, 2004.
2. Khopkar, S.M., Basic Concepts of Analytical Chemistry, 18th edition, Pubs, New Age International, 2002.

CHEMISTRY

B.Sc. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

Outlines of Tests

SEMESTER - IV

		<i>Lecture Hours</i>	<i>Marks</i>	
			<i>Theory</i>	<i>Internal Assessment</i>
Paper III	: Organic Chemistry-B	20	22	03
Paper IV	: Analytical Chemistry-B	20	22	03

Paper III : Organic Chemistry-B

Max. Marks	: 25
Theory	: 22
Internal Assessment	: 03
Time	: 3 Hours
Lectures	: 20

OBJECTIVE OF THE COURSE :

To teach the fundamental concept of Chemistry and their applications. The syllabus pertaining to B.Sc. (HONOURS) semester System in the subject of Chemistry has been upgraded as per provision of the UGC module and demand of the academic environment. The course contents have been revised from time to time as per suggestions of the teachers of the Chemistry working in the Panjab University, Chandigarh and affiliated colleges. The syllabus contents are duly arranged unit wise and contents are included in such a manner so that due importance is given to requisite intellectual and laboratory skills.

Unit-I

Organic Chemistry of Life I: (05 Lectures)

Nucleic Acids : Nucleosides; Pentoses, heterocyclic bases, nucleotide; Purines and phosphate, DNA and RNA Hydrogen bonding and DNA replication (heredity).

Unit-II

Organic Chemistry of Life I: (05 Lectures)

Enzymes, nomenclature of enzymes, characteristics of enzymes, coenzyme A and prosthetic group. Coenzyme derived from niacin and examples of redox reaction with it.

Unit-III

Pericyclic Reactions I : (05 Lectures)

Electrocyclic Reactions: Woodward and Hoffmann rules, correlation diagram for cyclobutene = butadiene interconversion, Frontier orbital theory. Examples of 4, 6 and 8 electron systems, stereochemical modes.

Cycloaddition Reactions : Woodward and Hoffmann rules, Frontier Molecular orbital theory for Diels-Alder reaction.

Unit-IV**Pericyclic Reactions II:**

(05 Lectures)

(4+2) and (2+2) cycloadditions, exo and endo isomers, Examples Bicyclo (2, 2, 1) heptane and Bicyclo (2, 2, 2,) octane systems. Intramolecular Diels Alder reaction.

Sigmatropic Rearrangements: Woodward and Hoffmann rules, Frontier Molecular orbital for 1, 3; 1, 5 and 1, 7 shifts. Examples including vitamin D₂ formation from 7-dehydro cholesterol (Provitamin D₃).

Instructions for paper setters and candidates :

- (i) *Examiner will set total of NINE questions comprising TWO questions from each unit and ONE compulsory question of short answer type covering whole syllabi.*
- (ii) *The students are required to attempt FIVE questions in all, ONE question from each unit and the Compulsory question.*
- (iii) *Compulsory questions carries six marks and remaining all questions carry four marks each.*

Suggested Books :

1. Morrison, R.T., Boyd, R.N., Organic Chemistry; 6th edition, Pubs: Prentice Hall India Pvt. Ltd., 1992.
2. Carey, F.A., Sundberg, R.J., Advanced Organic Chemistry : 4th edition, 2001.
3. Mukherji, S.M., Singh, S.P., Organic Chemistry; 1st edition, Pubs: New Age International, New Delhi, 1985, Vol. 2.

Paper IV : ANALYTICAL CHEMISTRY-B:

Max. Marks	:	25
Theory	:	22
Internal Assessment	:	03
Time	:	3 Hours
Lectures	:	20

OBJECTIVE OF THE COURSE:

To teach the fundamental concept of Chemistry and their applications, The syllabus pertaining to B.Sc. (HONOURS) Semester System in the subject of Chemistry has been upgraded as per provision of the UGC module and demand of the academic environment. The course contents have been revised from time to time as per suggestions of the teachers of the Chemistry working in the Panjab University, Chandigarh and affiliated colleges. The syllabus contents are duly arranged unit wise and contents are included in such a manner so that due importance is given to requisite intellectual and laboratory skills.

Unit- I

Precipitation Equilibria : (05 Lectures)

Solubility of precipitates, effect of competing equilibria on solubility of precipitates, separation of ions by control of concentration of precipitating reagents, effect of electrolyte concentration on solubility product, theory of precipitation titrations. The Vohlard and the Mohr's methods of analysis, adsorption indicators.

Unit-II

Complexation Equilibria : (05 Lectures)

Complexation, formation constants, EDTA equilibria, effect of pH on EDTA equilibria, complexometric titration curves, selection of indicators for complexometric titrations, applications of complexometric equilibria.

Unit-III

Solvent Extraction and Ion-Exchange Separation : (06 Lectures)

Basic concepts of solvent extraction, relationship between distribution coefficient, distribution ratio and per cent extraction, applications of extraction methods in analytical chemistry, ion-exchange processes, ion-exchange-resins, techniques and applications of ion-exchange separation, basic concepts of column and gas chromatography.

Unit-IV

Radioisotope Methodology and its Applications : (04 Lectures)

Radioactive isotopes, radioactive decay rates and half-life periods of radioactive isotopes, sample preparation in radiochemical measurements, background, dead-time and inefficiency corrections in radioactive measurements, isotope dilution method and its applications, radiometric-titrations, neutron activation analysis.

Instructions for paper setters and candidates :

- (i) *Examiner will set total of NINE questions comprising TWO questions from each unit and ONE compulsory question of short answer type covering whole syllabi.*
- (ii) *The students are required to attempt FIVE questions in all, ONE question from each unit and the Compulsory question.*
- (iii) *Compulsory question carries six marks and remaining all questions carry four marks each.*

Suggested Books:

1. Skoog, D.A., West, D.M., Saunders, H., Fundamentals of Analytical Chemistry, 8th edition, International, 2004.
2. Khopkar, S.M., Basic Concepts of Analytical Chemistry, 18th edition, Pubs, New Age International, 2002.

BOTANY**B.Sc. (HONOURS) SECOND YEAR EXAMINATION, 2017-18****Third Semester**

	Time	Theory	Int Assess.	Max Marks
Theory Paper-A : Plant Physiology	3 hrs.	36	04	40
Theory Paper-B : Development of Plants and their Utilization – I	3 hrs.	36	04	40
One practical pertaining to entire syllabus included in both theory papers	3 hrs.	18	02	20

Fourth Semester

Theory Paper-A : Plant Ecology	3 hrs.	36	04	40
Theory Paper-B : Development of Plants and their Utilization – II	3 hrs.	36	04	40
One practical pertaining to entire syllabus included in both theory papers	3 hrs.	18	02	20
	Total			200

- Note :**
- The number of teaching hours for theory and practical per session shall be 60 hrs. and 100 hrs. respectively.
 - There will be a two theory papers (A & B) in each semester. Each paper will consist of nine questions. Question No. 1 will be compulsory and will consist of 12 parts (one mark each) comprising 6 MCQ and the rest 6 parts will be of fill-in the blanks covering the entire syllabus in both the theory papers A & B. The remaining 8 questions in papers A & B shall include two questions from each unit. Candidates shall be required to attempt one question from each Unit. Question No. 1 will carry 12 marks and the rest of 8 questions will be of 6 marks each.

SEMESTER –III

Paper -A : PLANT PHYSIOLOGY

Objective :

The main objective of this paper is to make the students aware about various functions and metabolisms of plants. The course material of this paper would enable the students to understand gradual aspects of growth and development in plants along with concept of photoperiodism, role of hormones and photomorphogenesis.

Teaching Methodology :

Teaching methodology includes series of lectures, making use of charts, transparencies, LCD, models, slides, practical demonstrations, extension lectures from experts, field visits, discussions, quiz competitions etc.

Unit-I

Plant-Water Relations : Water transport processes; diffusion and osmosis; water potential and chemical potential; absorption of water, water transport through xylem; transpiration and its significance; factors affecting transpiration; mechanism of stomatal movement.

Mineral Nutrition : Criteria of essentiality of elements; macro-and micronutrients; role of essential elements; mineral deficiency symptoms and plant disorders; nutrient uptake and transport mechanisms; role of cell membrane, ion pumps and carriers.

Unit-II

Photosynthesis : Historical background and significance; structure of photosynthetic apparatus; photosynthetic pigments; accessory pigments and the photoprotective carotenoids; reaction center complexes; photochemical reactions; electron transport pathways in chloroplast membranes; photophosphorylation; the Calvin cycle; the C₄ carbon cycle; crassulacean acid metabolism; synthesis of starch and sucrose; photorespiration.

Transport of Organic Substances: Transport of photosynthates; source-sink relationships; the mechanism of translocation in the phloem; assimilate partitioning.

UNIT-III

Respiration : Glycolysis; the TCA cycle and its regulation; electron transport in mitochondria; oxidative phosphorylation; pentose phosphate pathway; cyanide-resistant respiration.

Nitrogen Metabolism : Biological nitrogen fixation; reduction of N₂ into ammonia; *nif* genes; regulation of nitrate reductase and nitrogenase; nitrate and ammonium assimilation.

Unit-IV

Growth and Development : General aspects – definitions, phases of growth; kinetics of growth; physiology of seed dormancy and seed germination; concept of photoperiodism; Physiology of flowering; the florigen concept and role of hormones; vernalization; senescence and fruit ripening; importance of respiratory climacteric; discovery, physiological role and mechanism of action of the phytohormones – auxins, cytokinins, gibberellins, abscisic acid and ethylene; photomorphogenesis; discovery of phytochromes and cryptochromes, their role and mechanism of actions; signal transduction – basic concept; plant movements – tropic and nastic; biological clocks.

Suggested Readings :

1. Copleand, R. A. Enzymes: A Practical Introduction to Structure, Mechanism and Data Analysis, VCH Publishers, New York, 1996.
2. Dryer, R.L. and Lata, G.F. Experimental Biochemistry, Oxford University Press, New York, 1989.
3. Galston, A.W. Life Processess In Plants, Scientific American Library, Springer-Verlag, New York USA, 1989.
4. Hooykaas, P.J.J., Hall M.A. and Libbenga, K.R. (eds.) Biochemistry and Molecular Biology of Plant Hormones, Elsevier, Amsterdam, The Netherlands, 1999.
5. Hopkins W.G. Introduction to Plant Physiology : John Wiley and Sons. Inc., New York, USA, 1995.
6. Moore, T.C. Research Experiences in Plant Physiology: A Laboratory Manual, Springer-Verlag, Berlin, 1974.
7. Moore, T.C. Biochemistry and Physiology of Plant Hormones (2nd edition), Springer-Verlag, New York, USA, 1989.
8. Salisbury. F.B. and Ross, C.W. Plant Physiology (4th edition), Wadsworth Pulishing Co., California, USA, 1992.
9. Srivastava, H.N. Plant Physiology, Biochemistry & Biotechnology, Vol. V, Pradeep Publications, Jalandhar, India, 2013.
10. Taiz, L. and Zeiger, E. Plant Physiologyyy (5th edition), Sinauer Associates, Inc., Publishers, Massachusetts, USA, 2010.
11. Wilson, K. and Goulding, K.H. (eds.). A Biologist's Guide to Principles and Techniques of Practical Biochemistry, Edward Arnold, London, U.K., 1986.

Suggested Labortary exercises for Third Semester

1. To study the permeability of plasma membrane using different concentrations of organic solvents.
2. To study the effect of temperature on permeability of plasma membrane.
3. To extract enzymes and study their activity, e.g. amylase, lipase, acid phosphatase, catalase, peroxidase.
4. Effect of the following factors on enzyme activity :
pH, temperature, enzyme and substrate concentration, heavy metals.
5. To extract and separate chloroplast pigments by solvent method and demonstrate fluorescence in chloroplast extracts.
6. To determine the osmotic potential of vascular sap by plasmolytic method.

7. To determine the water potential of given tissue (any tuber).
8. To determine stomatal Index, stomatal frequency and percentage of leaf area open through stomata. Also study the effect of ABA on stomatal closure.
9. Effect of carbon dioxide concentration on the rate of photosynthesis.
10. To demonstrate that oxygen is evolved during photosynthesis.

Paper -B: DEVELOPMENT OF PLANTS AND THEIR UTILIZATION-I

Objective:

This paper deals with internal structure of various plant parts, their growth and development patterns. It gives an insight into plant domestication and role of wild plants in ecosystem functioning.

Teaching Methodology:

Teaching methodology includes series of lectures, making use of charts, transparencies, LCD, Models, slides, practical demonstrations, extension lectures from experts, field visits, discussions, quiz competitions etc. In practicals, students would be provided with fresh/preserved materials for their morphological and anatomical studies making use of microscopes and binoculars and hands-on tools/equipment etc.

UNIT-I

Organization of the Higher Plant Body : The shoot and root systems; variation in habit and longevity; environmental influences.

UNIT-II

Meristems and Development : Shoot apical meristem, root apical meristem, lateral meristems and their functions. Range of form and structure of stem, leaf and root; their tissues and functions.

UNIT-III

Secondary Body of the Plant : Vascular cambium; secondary xylem (basic structure of wood); secondary phloem and periderm.

Unit-IV

Role of Wild Plants in Ecosystem Functioning : A general account.

Domestication of Plants : Primary and secondary centres of diversity; plant introduction.

Suggested Readings :

1. Carlquist, S. Comparative Wood Anatomy : Systematic, Ecological and Evolutionary Aspects of Dicotyledonous Wood, Springer-Verlag, Berlin, 1988.
2. Cutter, E.G. Cell and Tissues, Part I, Edward Arnold, London, 1969.

3. Cutter, E.G. Plant Anatomy: Experiment and Interpretation, Part II, Organs, Edward Arnold, London, 1971.
4. Esau, K. Anatomy of Seed Plants, 2nd Edition, John Wiley and Sons, New York, 1977.
5. Fahn, A. Plant Anatomy, 2nd Edition, Pergamon Press, Oxford, 1974.
6. Fuller, K.W. and Gallon, J.R. Plant Products and New Technology, Clarendon Press, Oxford, New York, 1985.
7. Mauseth, J.D. Plant Anatomy, The Benjamin/Cummings Publishing Company Inc., Menlo Park, California, USA, 1998.
8. Nair, M.N.B. Wood Anatomy and Major Uses of Wood, Faculty of Forestry, University Putra Malaysia, 43400 Serdang, Selangor D.E. Malaysia, 1988.
9. Raghvan, V. Development Biology of Flowering Plants, Springer-Verlag, New York, 2000.
10. Raven, P.H., Evert, R.F. and Eichhorn, S.E. Biology of Plants, 5th Edition, W. H. Freeman and Co., Worth Publishers, New York, 1999.
11. Srivastava, H.N. Structure, Development and Reproduction in Flowering Plants, Vol. IV, Pradeep Publications, Jalandhar, India, 2007.
12. Goyal, J.P., Saini, Aruna. Angiosperms, Structure, Development and Reproduction, Trueman Company, Jalandhar, India, 2006.
13. Singh, V., Pande, P.C and Jain, D.K. Structure, Development and Reproduction in Angiosperms, Rastogi Publications, Meerut, India, 2012.

Suggested Laboratory Exercises :

1. Study in the field of a large variety of herbaceous and perennials, both monocotyledonous and dicotyledonous, aquatic, mesophytic, xeromorphic plants, succulents, climbers, twiners, parasites, and trees with varied canopy architecture. Field diary to be prepared.
2. Morphology and anatomy of stems, roots and leaves using stained hand sections of permanent slides (tapioca, carrot, radish, onion, garlic, turnip, potato, etc.)
3. Study of vascular cambium in stem and root. Secondary growth. Examples of cambial variants and resultant secondary structures.
4. Preparation of world maps to show Vavilov's centres of origin of cultivated plants and Zhukovsky's concept of mega centres.
5. Preparation of maps showing the centres of primary diversity of important economic plants that originated in India and region of cultivation of plants introduced from the New World, Europe, Central Asia, Australia, Malaysia, China.

Guidelines for Botany Practical Examination:

Max. Marks:	20
Practical:	18
Int. Assessment:	2
Time:	3 hrs.

Q.1. Write procedure and precautions for Physiology experiment A. Perform the experiment, record observations calculation if any and results. Show the experiment to the examiner.	5
Q.2. Write illustrated morphological note on specimens B & C.	4
Q.3. Identify slides D & E giving at least two identifying features for each.	4
Q.4. Practical Note book.	2
Q.5. Viva-Voce	3

BOTANY SEMESTER-IV

PAPER-A: PLANT ECOLOGY

Objective: This paper deals with the role of environment in causing structural and functional variations in plants. It provides a broad idea about concept of population, community, ecosystem, ecological succession and role of plant indicators in environment monitoring.

Teaching Methodology: Teaching methodology includes series of lectures, making use of charts, transparencies, LCD, Models, slides, practical demonstrations, extension lectures from experts, field visits, discussions, quiz competitions etc. In practical, students would be provided with fresh/preserved materials for their morphological and anatomical studies making use of microscope and binoculars and hands-on tools/equipment etc.

UNIT- I

Introduction : Holocoenotic nature of environment; limiting factors; ecological amplitude triggering factors (soil, water, atmosphere).

Ecological Adaptations: Concept, ecads, ecotypes and ecoclines; adaptations in relation to soil oligotrophy; adaptive significance of photosynthetic pathways.

Population : Concepts; density and pattern; idealized plant life history; population growth; carrying capacity; population regulation; r and k selection; population interactions.

UNIT- II

Community: Community characteristics and their measurement, species diversity (alpha, beta and gamma), niche.

Ecosystem : Concept, components and organisation, energy flow; ecological efficiencies; cycling of C, N and P; characterization and structure of ecosystem; the biotic and abiotic components, their inter-relationship; the processes within ecosystem, the trophic organisation; autotrophy, heterotrophy, parasitism, detritus, decomposition.

Ecological Succession : Mechanism and types; nature of climax; food chains and food webs; ecological pyramids.

UNIT- III

Flow of Energy and Materials : Flow of energy and materials within ecosystem; models of energy flow; ecosystem productivity; biogeochemical cycles; major types of ecosystems.

UNIT- IV

Plant Indicators and their role in Environmental Monitoring.

Phytogeography : General principles, vegetation of India.

Suggested Readings :

1. Barbour, M.G., Burk, J.H. and Pitts, W.D., Terrestrial Plant Ecology, Benjamin/Cummings, Publications Co., California, 1987.
2. Hill, M.K., Understanding Environmental Pollution, Cambridge University Press, 1997.
3. Kormondy, E.J., Concepts of Ecology, Prentice-Hall of India Pvt. Ltd., New Delhi, 1996.
4. Mackenzie, A. et al., Instant Notes in Ecology, Viva Books Pvt. Ltd., New Delhi, 1999.
5. Misra, R. Ecology Work Book, Oxford & IBH, New Delhi, India, 1968.
6. Moore, P.W. and Chapman, S.B. Methods in Plant Ecology, Blackwell Scientific Publications, 1986.
7. Odum, E.P. Basic Ecology, Saunders, Philadelphia, 1983.
8. Smith, R.K. Ecology and Field Biology, Harper Collins, New York, 1996.
9. Srivastava, H.N. Ecology and Utilization of Plants, Vol.VI Pradeep Publications, Jalandhar, India, 2012.

Suggested Labortary exercises:

1. To study ecological adaptations (morphological and anatomical) in plants (hydrophytes, xerophytes, epiphytes).
2. To determine minimum area of sampling unit (quadrat) for the study of grassland community.
3. To estimate Importance Value Index for grassland species.
4. To prepare maps of India with respect to (i) Major climate zones, (ii) Forest types, and (iii) Bio-geographical regions and to comment on these.

Paper -B : DEVELOPMENT OF PLANTS AND THEIR UTILIZATION – II

Objective :

The course work of this paper deals with utilization of plants. It would provide the students an idea about importance of various plant parts as well as plant wealth such as medicinal, crops and food plants, fibre and oil yielding plants, timber yielding and firewood species.

Teaching Methodology: Teaching methodology includes series of lectures, making use of charts, transparencies, LCD, Models, slides, practical demonstrations, extension lectures from experts, field visits, discussions, quiz competitions etc. In practical, students would be provided with fresh/preserved materials for their morphological and anatomical studies making use of microscope and binoculars and hands-on tools/equipment etc.

UNIT-I

A General account of wheat, rice, maize, sorghum, bajra, potato and sugarcane.

Legumes : Chickpea (Bengal gram), red gram (arhar) – a general account.

UNIT-II

Vegetable Oil Sources : Mustard, groundnut, soyabean and coconut –a brief account.

Plant Fibres : Cotton, jute and coir.

Timber and Firewood Species : A general account of use of following trees:

Tectona, Dalbergia, Albizzia, Eucalyptus, Cedrus, Acacia, Shorea, Terminalia, Mangifera and Azadirachta.

UNIT -III

Medicinal Plants : A brief account of plant drugs and their chief constituents used in indigenous and allopathic systems of medicines viz. *Opium, Rauwolfia, Adhatoda, Emblica officinalis, Terminalia bellirica, Glycyrrhiza, Phyllanthus amarus (P. fraternus), Allium sativum, Atropa belladonna and Aloe barbadense.*

Unit-IV

A brief account of the following:

Natural Rubber : *Hevea brasiliensis*

Essential Oils: *Cymbopogon sp., Eucalyptus, Jasminum, Geranium and Vetiveria.*

Insecticides : *Azadirachta, Artemisia annua, Chrysanthemum cinerarifolium (pyrethrum).*

Dyes : *Curcuma longa (turmeric), Bixa orellana (annatto), Crocus sativus, Butea monosperma (palash), Indigofera (Indigo) and Lawsonia inermis (mehndi).* Extraction of pigments.

Ornamental Plans : Familiarity with seasonal and perennials grown in your locality.

Suggested Reading :

1. Kocchar, S.L., Economic Botany in Tropics, 2nd edition, Macmillan India Ltd., New Delhi, 1988.
2. Lyndon, R.F., Plant Development : The Cellular Basis, Unwin Hyman, London, 1990.
3. Sambamurthy, A.V.S.S. and Subramanyam, N.S., A Textbook of Economic Botany, Wiley Eastern Ltd., New Delhi, 1989.
4. Sharma O.P. Hill's Economic Botany, Tata McGraw Hill Publishing Company Ltd., New Delhi, India, 1996.
5. Simpson, B.B. and Conner-Ogorzaly, M., Economic Botany –Plants in Our World, McGraw Hill, New York, 1986.
6. Srivastava, H.N. Ecology and Utilization of Plants, Vol. VI, Pradeep Publications, Jalandhar, India, 2012.
7. Steevas, T.A. and Sussex, I.M. Patterns in Plant Development, 2nd Edition, Cambridge University Press, Cambridge, 1989.
8. Thoms, P. Trees: Their Natural History Cambridge University Press, Cambridge, 2000.
9. Tippto, O. and Stern, W.L. Humanistic Botany, W.W. Norton, New York, 1977.
10. Vishnu Swarup, Ornamental Horticulture, Macmillan India, Ltd., New Delhi India, 1997.

Suggested Laboratory Exercises

1. Study of vegetative and reproductive morphology and anatomy of wheat, rice, maize, sorghum, bajra, potato and sugarcane. Study of starch grains in these plants (except in sugarcane). Epidermal structure of sugarcane stem and leaves. Tests for sucrose.
2. Study of vegetative and floral morphology, and pod development in chickpea and red gram.
3. Study of structure of oil storing tissues in sectioned seeds of mustard, groundnut and soyabean, and coconut endosperm, using micro-chemical tests.
4. Study of wood anatomy of ring-porous, diffuse porous woods using hand sections or prepared slides. Understanding of wood anatomy using T.S., T.L.S. and R.L.S. in five timber yielding species (*Tectona*, *Dalbergia*, *Albizia*, *Eucalyptus* *Cedrus*, *Acacia*, *Shorea*, *Terminalia*, *Mangifera*, *Azadirachta*, or any other depending on the location of the institution). Preparation of a list of 10 fire wood species in your region and their properties.
5. Study of 10 whole plants (live or from herbarium specimens) used as resources of drugs : (*Opium*, *Rauwolfia*, *Adhatoda*, *Emblica officinalis*, *Terminalia bellirica*, *Glycyrrhiza*, *Phyllanthus amarus* (*P. fraternus*), *Allium sativum*, *Atropa belladonna*, *Aloe barbadense*, or any other important plants of your area.
6. Study of laticiferous system in the stem of *Hevea brasiliensis*, familiarization with whole plants (fresh or herbarium specimens of *Cymbopogon* sp., *Eucalyptus*, *Jasminum*, *Geranium* and *Vetiveria* (or any other local sources of essential oils).
7. Study of *Azadirachta*, *Artemisia annua*, *Chrysanthemum cinerarifolium* (pyrethrum) from live specimens. Sources of dyes : *Curcuma longa* (turmeric), *Bixa orellana* (annatto), *Crocus sativus*, *Butea monosperma* (palash), *Indigo fera* (indigo) and *Lawsonia inermis* (mehndi). Extraction of pigments.
8. Preparation of a list of trees and shrubs used as ornamentals alongwith their popular and scientific names. Seasons of flowering and brief description. Calendar of seasonals grown as bed plants, potted plants, house plants, flowers used for worship or ornamentation. This may be illustrated and presented as a term paper at the time of examination.

Guidelines for Botany Practical Examination

Max. Marks : 20
Practical : 18
Int. Assessment : 2
Time : 3 hrs.

- | | |
|---|---|
| 1. Identify specimen A and write note on its ecological adaptations. | 3 |
| 2. Identify and write illustrated morphological note on specimens B,C & D giving their economic importance. | 6 |
| 3. Identify & write botanical name and family of specimens E & F. | 4 |
| 4. Practical note book. | 2 |
| 5. Vice-Voce . | 3 |

ZOOLOGY

B. Sc. (HONOURS) SECOND YEAR EXAMINATION, 2017-18

SEMESTER-III

PAPER I : ENVIRONMENTAL BIOLOGY-I

Max. Marks	: 40
Theory Exam.	: 36 marks
Internal Assessment	: 4 marks
Time	: 3 hrs.

Note : Nine questions are to be set. Question No.1 is compulsory consisting of short answer type questions covering the whole syllabus. It will have 8 parts of 1 marks each. Two questions are to be set from each Unit. One question is to be attempted from each Unit. In all, Five questions are to be attempted including compulsory one. 50% of the questions are to be split up into 2-4 sub-parts.

UNIT-I

1. **Environment :** Introduction and components.
1. **Ecological Concepts :** Ecosystem: Types food chains, food web, energy flow.

UNIT-II

3. **Biogeochemical cycles**
4. **Ecological succession**

UNIT-III

5. **Pollution: Types** - Air, water, land, thermal and noise pollution.
 - (a) *Sources of Pollution :* Sewage, industrial wastes, silt, fertilizers, detergents, oils, pesticides, smoke, exhaust gases from automobiles, smog, acid rains, radioactive elements etc.
 - (b) *Pollution in India:* Major polluted rivers and their sources of pollution, air pollution in major cities.
 - (c) *Hazards of Pollution :* Effects of pollution on plants and animals.

UNIT-IV

6. (a) *Control of Pollution:* Primary, secondary and tertiary treatment, standards for the quality of drinking water.
 - (b) Bioremediation

Suggested Readings :

1. Odum, E.P. : *Fundamentals of Ecology*, W.B. Saunders Co., Philadelphia, 1971.
2. Melanby, K. : *The Biology of Pollution : Studies in Biology*, No. 38, Edward Arnold (Publishers) Ltd., 41, Bedford Square, London, 1980.
3. Louis, K. : *River Pollution*, Butterworths, 1969.
4. Dix, H.M. : *Environmental Pollution, Atmosphere, Land, Water and Noise*, (Institution of Environmental Science) Wiley, 1981.
5. Mani, M.S. : *Ecology and Biogeography of India*, Dr. W. Junk B.V. Publishers, The Hague, 1974 .
6. Kendeigh, S.C. : *Ecology with Special Reference to Animals and Man*, New Jersey, Prentice Hall Inc, 1974.

Paper II : MOLECULAR BIOLOGY-I

Max. Marks	: 40
Theory Exam.	: 36 marks
Internal Assessment	: 4 marks
Time	: 3 hrs.

Note : Nine questions are to be set. Question No.1 is compulsory consisting of short answer type questions covering the whole syllabus. It will have 8 parts of 1 mark each. Two questions are to be set from each Unit. One question is to be attempted from each Unit. In all, Five questions are to be attempted including compulsory one. 50% of the questions are to be split up into 2-4 sub-parts.

UNIT-I

1. **Introduction** : Scope and historical account from molecules to cells, prokaryotes to eukaryotes, unicellular to multicellular.
2. **Biomolecules : Micro and Macro molecules.** Structure and function of carbohydrates, lipids, proteins and nucleic acids.

UNIT-II

3. **Carbohydrates** : Classification, structure of cellulose and glycogen.
4. **Lipids** : Classification, structure of ganglioside and steroids.

UNIT-III

5. **Proteins** : Classification, structure of amino acids, primary, secondary and tertiary structure of proteins, structure of hemoglobin and lysozyme.

UNIT-IV

6. **Nucleic Acids** : DNA. What genes are made of ? Detailed structure of DNA Molecule, replication, RNA - various types, transcription, translation and involvement of RNAs in protein synthesis.

Books Recommended :

- 1 Alberts, B. Bray, D., Lewis, J., Raff, M., Robert, K. and Watson, J.D. : *Molecular Biology of the Cell*, Garland Publications, New York, 1983.
- 2 DeRobertis, E.M.F. Jr. : *Essentials of Cell and Molecular Biology*, Halt-Saunders, Japan, 1981.
- 3 DeRobertis, E.D.P. and DeRobertis, E.M.F. : *Cell and Molecular Biology*, 8th Edition, Halt Saunders, Tokyo, 1987.
- 4 Gardner, E.J., Simmons, M.J. and Snustad, D.P. : *Principles of Genetics*, John Wiley and Sons, New York, 2004.
- 5 Power, C.B. : *Cell Biology*, Himalayan Publishing House, Bombay, 1981.
- 6 Schleif, R. : *Genetics and Molecular Biology*, Addison-Wesley, Reading U.K., 1986.
- 7 Villee, C.A., Selomon, E.P. and Davis, P.W. : *Biology*, Saunders College Publishing, New York, 1985.
- 8 Watson, J.D. : *Molecular Biology of the Gene*, 4th Edition, Vols. I & II, Narosa Book, New Delhi, 1987.
- 9 Barry, J.M. : *Molecular Biology, Genes and Chemical Control of Living Cells*, Prentice Hall Inc., New Jersey, 1964.

PRACTICALS**SEMESTER-III****Practical's based on both theory papers.**

1. Estimation of D.O. of the given water sample (normal and polluted).
2. Estimation of total alkalinity of water sample (normal and polluted).
3. Estimation of chlorine of water sample (normal and polluted).
4. Estimation of Hardness of water sample (normal and polluted).
5. Estimation of NO₃ of water sample (normal and polluted).
6. Estimation of PO₄ of water sample (normal and polluted).

7. Analysis of the variations in protein contents in different organs of an animal procured from slaughter house.
8. Analysis of the species variations in amino acids requirements.
9. Demonstration of carbohydrate and proteins in a cell (Cytochemically).
10. Prepare a Project on national parks/sanctuaries/biosphere reserves.

The scheme for the conduct of Practical Examination.

Based on Theory Papers I & II of B.Sc. (Honours) III Semester

Max. Marks	:	20
Practical Exam.	:	18 marks
Internal Assessment	:	2 marks

- I. Analyze the variations in protein contents in the organs of a given specimen. Write the procedure and show the reading to the examiner. (3)
- II. Determine the physico-chemical factors (A) in given water sample from a lake. Write the procedures followed. (3)
- III. Demonstrate cytochemically carbohydrates/protein in an eukaryotic cell. Write the procedure and show the preparation to the examiner. (3)
- IV. Write a note on the project..... (2)
- V. Viva-Voce. (3)
- VI. Note Book and Charts. (4)

ZOOLOGY**B. Sc. (HONOURS) SECOND YEAR EXAMINATION, 2017-18****SEMESTER-IV****PAPER I : ENVIRONMENTAL BIOLOGY-II****PAPER II: MOLECULAR BIOLOGY-II**

Max. Marks	:	40
Theory Exam.	:	36 marks
Internal Assessment	:	4 marks
Time	:	3 hrs.

Note : Nine questions are to be set. Question No.1 is compulsory consisting of short answer type questions covering the whole syllabus. It will have 8 parts of 1 marks each. Two questions are to be set from each Unit. One question is to be attempted from each Unit. In all, Five questions are to be attempted including compulsory one. 50% of the questions are to be split up into 2-4 sub-parts.

PAPER I : ENVIRONMENTAL BIOLOGY-II**UNIT-I**

1. **Biodiversity Conservation :** (In-situ, Ex-situ)
2. **IUCN Red List Categories :** Critically Endangered, Endangered, Vulnerable, Rare, Least Concern.

UNIT-II

3. **National Conservation Projects**
4. **National Biodiversity Act and Wild life Act**

UNIT-III

5. **Ecology of Conservation :**
 - (a) *Conservation of Natural Resources:* Water, land and minerals.
 - (b) *Aquaculture:* Pisciculture and management of ponds, extensive & intensive and integrated fish culture.

UNIT-IV

6.
 - (a) *Forest Ecology :* Forest statistics of India, conservation of forests, management of forests for timber productions.
 - (b) *Agriculture :* Weed control, crop rotation, green revolution, checking of soil erosion.
 - (c) *Dedensertification :* Measures to control the advance of desert.

Suggested Readings :

1. Odum, E.P. : *Fundamentals of Ecology*, W.B. Saunders Co., Philadelphia, 1971.
2. Melanby, K. : *The Biology of Pollution : Studies in Biology*, No. 38, Edward Arnold (Publishers) Ltd., 41, Bedford Square, London, 1980.
3. Louis, K. : *River Pollution*, Butterworths, 1969.
4. Dix, H.M. : *Environmental Pollution, Atmosphere, Land, Water and Noise*, (Institution of Environmental Science) Wiley, 1981.
5. Mani, M.S. : *Ecology and Biogeography of India*, Dr. W. Junk B.V. Publishers, The Hague, 1974 .
6. Kendeigh, S.C. : *Ecology with Special Reference to Animals and Man*, New Jersey, Prentice Hall Inc, 1974.

Paper II : MOLECULAR BIOLOGY-II**UNIT-I**

1. **Mutations** : Types of mutations, physical and chemical mutagens and their mode of action on DNA.
2. **Bioenergetics** : Types of energy and their transformation, first and second law of thermodynamics.

UNIT-II

3. Factors governing chemical reactions, generation and function of ATP, biocatalysts; role of enzymes in cellular reactions. Types of major enzymes, Apoptosis.
4. **Regulation of Gene Expression** : Concept of operon, induction and repression in Prokaryotes, gene regulation in eukaryotes.

UNIT-III

5. **Molecules of Cellular Defence** : Structure and function of antibody, major histocompatibility antigens, HLA system. Genetic basis of antibody diversity.

UNIT-IV

6. **Molecular Basis of Inborn Errors of Metabolism** : Genetic basis of carbohydrates and amino acid metabolism, galactosemia and Phenylketonuria.
7. **Recombinant DNA** : Restriction endonucleases, Plasmids, cloning of DNA, use of recombinant DNA technology.

Books Recommended :

- 1 Alberts, B. Bray, D., Lewis, J., Raff, M., Robert, K. and Watson, J.D. : *Molecular Biology of the Cell*, Garland Publications, New York, 1983.
- 2 DeRobertis, E.M.F. Jr. : *Essentials of Cell and Molecular Biology*, Halt-Saunders, Japan, 1981.
- 3 DeRobertis, E.D.P. and DeRobertis, E.M.F. : *Cell and Molecular Biology*, 8th Edition, Halt Saunders, Tokyo, 1987.
- 4 Gardner, E.J., Simmons, M.J. and Snustad, D.P. : *Principles of Genetics*, John Wiley and Sons, New York, 2004.
- 5 Power, C.B. : *Cell Biology*, Himalayan Publishing House, Bombay, 1981.
- 6 Schleif, R. : *Genetics and Molecular Biology*, Addison-Wesley, Reading U.K., 1986.
- 7 Villee, C.A., Selomon, E.P. and Davis, P.W. : *Biology*, Saunders College Publishing, New York, 1985.
- 8 Watson, J.D. : *Molecular Biology of the Gene*, 4th Edition, Vols. I & II, Narosa Book, New Delhi, 1987.
- 9 Barry, J.M. : *Molecular Biology, Genes and Chemical Control of Living Cells*, Prentice Hall Inc., New Jersey, 1964.

PRACTICALS**SEMESTER-IV****Practical's based on both theory papers.**

1. Biota of pond water and sewage/industrial effluent.
2. Effect of light and gravity on organism.
3. Study of littoral, limnetic, profundal communities.
4. Study of nucleic acids in tissues (Cytochemically).
5. Idea about viruses and bacteria through charts etc.
6. Preparation and study of onion root tip chromosomes.

The scheme for the conduct of Practical Examination.

Based on Theory Papers I & II of B.Sc. (Honours) IV Semester

Max. Marks	:	20
Practical Exam.	:	18 marks
Internal Assessment	:	2marks

- I. Record biota in the given sewage samples. Draw labeled sketches & demonstrate these to the examiner. (3)
- II. Examine water sample for biotic communities from particular zone of lake, sketch and demonstrate. (3)
- III. Identify the given chart/diagram. Write a brief note on it. (2)
- IV. Study the effect of on the given animal. Write the procedure followed. (2)
- V. Make a chromosomes preparations of the onion root tip. Draw a label diagram of any stage of mitosis and show it to the Examiner. (3)
- VI. Viva-Voce. (2)
- VII. Note Book and Charts. (3)
