

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

SYLLABI

AND THE

STRUCTURAL OUTL

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Outlines of Tests, Syllabi and Courses of Reading in the subject of :

| | | |
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**STRUCTURAL OUTLINE OF THE B.A./B.SC. (GENERAL AND HONOURS) DEGREE COURSE
IN THE 10+2+3 SYSTEM OF EDUCATION FOR FIRST YEAR 2012 EXAMINATION
(ALREADY HELD) SECOND YEAR 2013 EXAMINATION**

The new B.A./B.Sc. (General & Honours) course (at + 3 stage) in the 10+2+3 system of education has been structured keeping in view certain basic guidelines as under :--

1. (i) The scheme should provide a broad-based, interrelated and comprehensive programme of study, built upon the + 2 stage, which ultimately may act as a sound foundation for postgraduate education, participation in competitive examinations, and joining professional courses like those in Law, Education, etc.
 - (ii) It is so structured and organised that it is in conformity with the needs of the country in the present context. Apart from providing good general education, it should have an applied component as part of the course work so that it creates awareness of the practical problems facing the society and generates employability of the youth in diverse spheres of activity.
 - (iii) It is so designed and formulated that it provides flexibility and relative freedom of choice of courses to the students according to their special interests and capabilities.
 - (iv) It is based on intensive teacher–student interaction.
2. The B.A./B.Sc. courses have been so structured and revised that they are comparable both in content and quality.
 3. To cope with the fast increasing knowledge in each discipline, it has been considered
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(ii) STRUCTURAL OUTLINE OF THE B.A./B.SC. (GENERAL/HONOURS) DEGREE COURSE
IN THE 10+2+3 SYSTEM OF EDUCATION

B.A. (General)

The B.A. (General) programme of study shall consist of 24 credits, each credit having a value of 100 marks. A subject studied for the whole academic year shall carry 2 credits. All the theory papers and practicals irrespective of their credit value shall be studied throughout the academic year.

The detail of the subjects to be studied shall be as under :

1st Year 2012 Examination (already held)

COMPULSORY

(a) Punjabi – Two Papers

OR

*History & Culture of Punjab –One Paper

{ 1 Credit
1 Credit }

These papers constitute one subject in each year.

(b) English

1 Credit

ELECTIVE

+ Any three elective subjects of two credits each including languages and elective vocational subject (To be studied in selected colleges). 6 Credits

Total : 8 Credits

****Environment Education : 50 marks**

2nd Year 2013 Examination

Same as in the 1st year

Note :

1. In subjects having practicals, the theory papers and practicals together will be of 2 credit value. The candidate will have to pass in theory and practical/s separately.
2. Each paper of one credit shall be allocated 3 hours of teaching per week during each academic year. However, for subjects having practicals, three hours of teaching will be allocated to each theory paper and two hours for a practical per week or as per requirement of the subject concerned.

*For B.A./B.Sc. History and Culture of Punjab is allowed as an option in lieu of Punjabi (compulsory) to those students who had

STRUCTURAL OUTLINE OF THE B.A./B.SC. (GENERAL/HONOURS) DEGREE COURSE (iii)
IN THE 10+2+3 SYSTEM OF EDUCATION

3. B.A. (General) degree holders shall be eligible for admission to the Master's course in any of the elective subjects studied by them during all the three years of the programme of study, earning six credits in each, provided they fulfil the eligibility conditions.
4. A student would offer any science subject, including Mathematics, only if he has passed that subject in the qualifying examination or qualifies in the subject as a deficient/additional subject from the concerned Board/University/Council in the Supplementary Examination subsequent to the admission.

(iv) STRUCTURAL OUTLINE OF THE B.A./B.SC. (GENERAL/HONOURS) DEGREE COURSE IN THE
10+2+3 SYSTEM OF EDUCATION

Note :

1. The two credits allocated to an elective subject, to be studied in an academic year as spelled out above, shall be covered in two theory papers and a practical or practicals as per requirements of the subject concerned.

(vi) **GUIDELINES REGARDING CONTINUOUS ASSESSMENT OF REGULAR STUDENTS
OF B.A./B.SC./B.COM./B.C.A. COURSES**

IMPORTANT NOTE

(i) In order to incorporate an element of continuous assessment of students, the Colleges will conduct two mandatory House Tests in theory papers – one in the month of September/October and the other in December/January every year.

(ii) (a) For September Test, there will be only one paper of one hour's duration in each subject, and for December Test, there will be paper/s on the pattern of annual examination conducted by the University.

There will be a Special Test for those students who could not fulfil the conditions of eligibility. It will not be held to provide an opportunity to all students to improve their earlier score. Those students who are exempted by the Principal of the College from appearing in the House Test/s in September and/or December/January will also be allowed to appear in the Special Test; this Test will determine their eligibility for admission to the examination as well as their score for Internal Assessment.

(b) With a view to meet the grievance of students, if any, on account of scores obtained by them, the answer-books will be shown to them. Difference of opinion on the issue, if any, will be sorted out with the help of respective Heads of departments as well as the Principal of the College.

(iii) Whereas the September House Test will carry weightage of 40 per cent, the December House Test

Paper-II : 18th and 19th century literature

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

Texts :

1. Oliver Goldsmith *She Stoops to Conquer.*
2. S. T. Coleridge The following poems :
 - (a) *Kubla Khan.*
 - (b)

B.A. (HONOURS) /B.SC.(HONOURS) SECOND YEAR SYLLABUS

URDU

B.A. (HONOURS) 2ND YEAR EXAMINATION, 2013

PERSIAN

B.A. (HONOURS) 2ND YEAR EXAMINATION, 2013

(Two specialized

B.A. (HONOURS) /B.SC.(HONOURS) SECOND YEAR SYLLABUS

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ch , - ~~Wkul Zf}rht o"ZijH~~ 2013

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~~ivkkl %90\$10 = 100~~

*fjrh iB;p;E**ivllet %90\$10= 100**le; %3 ?kVs*

1. *vax h l sfghh eavugh* *val %16*
2. *ucUk&yflu* *val %16*
3. *AVi.krFk i k i.k l aah fu; ehdk l ekJ Klu* *val %18*
4. *jkVh HkK fgthj Lo: i vlf eglo* *val %10*
5. *tul plj %jM h njn 'E rFk l eplj i=ladsfy, yflu dh fol'KV
fol'k* *val %20*
6. *fgth dsmil xjiB; j vEzo iz k rFk 'kn&'lk* *val %10*
7. *vkfjd eV; lulu* *val %10*

I gk d i h rda %

1. *AVi. h i k i.k rFk i @ i Bu&Hh kulFk froj h, oafot; dy JSB/ ok h izlk' kulubZ
inYyA*
2. *AVi. h i k i.k rFk i @ i Bu&vle izlk' kfl gy , oameki fr jk plhs/ i h k'ej
izlk' kul ubZ inYyA*
3. *iplj ek; e&jk'k'; le 'leVgfj; k k l h gR v dlnel/ i pdy h p. Mx<A*
4. *Q logkjd fgth&vle izlk' kfl gyA*

gā kph

pha Jā (nkBo~) Gkr dñ k (2013) d/fJwfsj kB bJh

ggo gfj bk l gā kph eftsk

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fbysh l 90

fJNoBb n; ? wN l 10

; wK l 3 xN/

gkmeḡ ns/e'b;

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2. ; z; h l j kŪw
3. S/oḷsk l nfwḡk gḷsw, nko; h gḷfbŪo~ , ukdBh u'ē, fdzbh

: fBN ns/Ehw

1. fsBK fBoXkfos gḷ sek ftuā fsB NfNnk dh ftjkoe 10%3 &30 nē
nkb'ubk, ftfdnkoEh B/j oē gḷ se ftuāfJe gḷB bk~wh
eoBk j?
2. fsBK gḷ sek ftuā SN ; yḡ gŪB (n'm ft'ūāS) ns/j o 6%5 &30 nē
gḷ se ft'ūā d' gḷBK d/Tḷso dD/bk~wh j B.
3. fsBK gḷ sek ftuā n'm t'v/gŪBK ft'ūāfsB d/Tḷso (j oē 3%10 &30 nē
gḷ se ftuā xN' xN' d' gḷB bk~wh gḷS/ i kDr/, pkeh d'
gḷB fsBK gḷ sek ftuāfesā th gḷS/i k ; ed/j B).

ggo dñ k l BkNe ns/r bg

eñb næ l 100

fbysh l 90

fJNoBb n; ? wñ l 10

; wK l 3 xN/

gkmeñ ns/e'b;

1. BkNe l foúfsnk dk eh oýhJ/BK, vka nkswi hs, fBT{pñe egBh, i bXo
2. Bktb l em/yVe f; x, okw ; oñ nDyh, b'erhs gñkÙB, ; oj d
3. ej kDh ; rñj l ukdo j mbk pñk, ; ÿts eb wkb, u/sBk gñkÙB, gñ kph GtB, bñXnkDk

: fBN ns/Ehw

1. fsBK fBoXkfos gñ sek ftuñ fsB NñNnk dh ftj koe 10%3 &30 næ
nkbùBk
2. fsBK gñ sek ftuñ SN\$; yg gñB (ne65%)6(3)

GERMAN**B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013****PAPER-I**

| | | |
|---|---|----------|
| Max. Marks | : | 100 |
| Theory | : | 90 Marks |
| Internal Assessment (For regular students) | : | 10 Marks |
| Time | : | 3 Hours |

Note :

1. The question paper shall be set in German.
2. The mode of evaluation for Internal Assessment is to be followed as per University Guidelines.

Details of Theory Examination :

1. Literary question on the prescribed novel. : 30 Marks
2. Literary question on the prescribed drama. : 30 Marks
3. A text for comprehension and interpretation from the textbook : 30 Marks
(Moderne Welt I)

Total : 90 Marks

Courses of Reading :**Prescribed Text Books :**

1. *Der Richter und Sein Henker* by Friedrich Dürrenmatt.
2. *Biedermann und die Brandstifter* by Max Frisch.
3. *Moderne Welt I Deutsch für Fortgeschrittene* by Heinz Griesbach (Max Hueber Verlag München).

Chapters :

1. *Fünftausend Sprachen.*
2. *Die demokratische Ordnung der Bundesrepublik Deutschland*
- 3.

4. *Die Pflichten des Arbeitgebers*
5. *Die Pflichten des Arbeitnehmers*
6. *Stimulierte Bedürfnisse*
7. *Die heutige Jugend*
8. *Welche Bedeutung hat die Jugend als Alterklasse*
9. *Aus dir wird ja sowieso nichts*
10. *Ich will nicht selbständig werden*

PAPER-II : ESSAY AND TRANSLATION

| | | |
|---|---|----------|
| Max. Marks | : | 100 |
| Theory | : | 90 Marks |
| Internal Assessment (For regular students) | : | 10 Marks |
| Time | : | 3 Hours |

Note :

1. The question paper shall be set in German.
2. The mode of evaluation for Internal Assessment is to be followed as per University Guidelines.

Details of Theory Examination:

- | | | |
|---|----------|-----------------|
| 1. Translation of an unseen text/texts from German into English. | : | 40 marks |
| 2. Translation of an unseen text/texts from English into German | : | 20 Marks |
| 3. Essay writing in German (The structure of present day German Society : The family, the social role of women, youth problems, the workers, education, mass media, environment etc.) | : | 30 marks |
| Total | : | 90 marks |

DEFENCE & STRATEGIC STUDIES

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013

Outlines of Tests, Syllabi and Courses of Readings

Note : There will be two theory papers I and II, carrying 90 marks each. Each theory paper will have one compulsory short answer type question containing 15 question

Books Recommended :

1. Akhtar, Jamna Das : Political Conspiracies in Pakistan.
2. Burke, S.M. : Pakistan's Foreign Policy.
3. Callerd, K.B. : Pakistan – A Political Study.
4. Cohen : The Pakistan Army.
5. Chopra, Surendra (Ed.) (i) : Perspectives on Pakistan's Foreign Policy.
6. Encyclopaedia Britannica.
7. Hugh, Tinker : India and Pakistan.
8. Khan, M.A. : Generals in Pakistan.
9. Khaliq, S.A. : Pakistan—Peace and War.
10. Khalid, B. Sayyad : Pakistan : Formative Phase (1857-1948).
11. Laporto Robert Jr. : Power and Privilege.
12. Moon Penomal : Fe and Ait.

5. Fakin, Rn.C : Political lrole in Pakistan.

: PakistaRhelri Augcyen (Ponta:

7. Fteughenes ra Pakistan.

8. layy(S)32.19b6(o)23.8095(-)11.9048()11.90

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PAPER-II : AREA STUDIES–PAKISTAN

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

Total Teaching Periods : 75**SECTION-I**

1. Aggression in Jammu and Kashmir Campaign 1947-48 : Causes, operations in brief and effects.

SECTION-II

2. Indo-Pak War 1965 : Causes, operations in brief and effects.

SECTION-III

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

SECTION-IV

5. Defence Potential of Pakistan.
6. Armed Forces of Pakistan.
7. Nuclear Policy of Pakistan.

Books Recommended :

1. Ayub Mohammad Subramaniam, K. : Liberation War.
2. Brines : Indo-Pak War (1965).
3. Costa, Benedict : Dismemberment of Pakistan.
4. Encyclopaedia Britannica.
5. Feldman, Herbert : Revolution in Pakistan.
6. Feldman, Herbert : The End and the Beginning (Pakistan 1969-1971).
7. Gupta, H.R. : Indo-Pak War (1965).

8. Johri, Sita Ram : Indo-Pak War (1965).
9. Kaul, B.M. : Confrontation with Pakistan.
10. Khaliq, S.A. : Pakistan—Peace and War.
11. Published by the Institute for News Reviews on South Asia and Science and Technology, Defence Studies and Analysis, New Delhi.
12. Military Balance, Published by International Institut

HISTORY**B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013**

Note : The Honours programme outlined below is intended to encourage an indepth study of limited periods and significant epochs in Indian and World history, and wherever possible, to also provide a comparative perspective.

Any two papers from the following :

- (i) Social and Cultural Trends in Ancient India.
- (ii) Social and Cultural Trends in Medieval India.
- (iii) Social and Cultural Trends in the Punjab (19th and 20th Century).

| | | |
|--|---------------------|------------|
| (i) SOCIAL AND CULTURAL TRENDS IN ANCIENT INDIA | Max. Marks | : 100 |
| | Theory | : 90 Marks |
| | Internal Assessment | : 10 Marks |
| | Time | : 3 Hrs. |

General Instructions IG)-.4 Td Tf 7.92 -10.08 Td [()-0.9 q 34-8.31048(M)31.8575(a)15.42048()-11.9048()11.9047()-35.714

Unit-IV

7. *Puranic Religions* : Vaishnavism, Shaivism and Shaktism.
8. 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 : *Sudras in Ancient India*, Motilal Banarsidass, Delhi, 1980.
- 3.

2. *Devotional Movement :*

POLITICAL SCIENCE**B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013****Outlines of Test**

Paper I : Option (i) : International Relations 1917-1945

OR

Option (ii) : Colonialism and Nationalism in Modern India

Paper II : Option (i) : Western Political Thought

OR

Option (ii) : Comparative Politics

Syllabus and Courses of Reading :

Paper I : OPTION (i) INTERNATIONAL RELATIONS 1917-1945

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

Objectives :

- Unit-II** : *Nature of International Relations before and after the First World War :*
- (a) Concern for peace and the efforts to ensure it through modifications in the international order.
 - (b) The emergence of the League of Nations.

- Unit-III** : 1. *Rise of Nationalism :*
- (a) In Colonies.
 - (b) In Europe.
2. *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.
 - (c) Rise of dictatorship : Fascism, Nazism and Japanese militarism.
3. The Great Depression.

- Unit-IV** : 1. *Origins of the Second World War, specifically :*
- (a) Alliances and counter-alliances.
 - (b) Failure of the League of Nations.
 - (c) The Politics of Appeasement.

(d) A(F)8.38071(a)-8.38071(i)16.0958(l)-7.714310.38071(a)-8.38071(i)16.09 Fre3(e)39.2383(3(e)23(e)39.

6. Goodrich, L.M. and Edward Hambro : *Charter of the United Nations—Commentary and Documents* (London : London Institute of World Affairs, 1949).
7. Richard Little and Michael Smith (eds.) : *Perspectives in World Politics* (London : Routledge, 2006).
8. Chris Brown : *Understanding International Relations* (London, Palgrave, 2001).

OR

Paper I : 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 25 to 30 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.
- (b) Origin and growth of Indian National Congress.
- (c) Moderates and Extremists—Debates over objectives, ideology, strategy, social basis.

Unit-II : *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-III : (a) Role of Revolutionary Nationalists, Socialist and Communist movements.

- (b) Dalit, Dravidian, Women's and religion-based movements (Gurudwara Reform movement, Hindu Mahasabha, Muslim League).

Unit-IV : Landmarks in the devolution of power with special reference to Government of India : Acts of 1909, 1919, 1935 and 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).

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

Paper II : OPTION (ii) COMPARATIVE POLITICS

| | | |
|---------------------|---|----------|
| 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 25 to 30 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 Analysis and Politics :*

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

Unit-II : *Theories of Development :*

- (a) Modernisation and Development Theories.
- (b) Underdevelopment and Dependency Theories.
- (c) World Systems Theory.
- (d) Alternative Third World perspective on development.

Unit-III : *Political Participation and Representation* :

(a) Political Parties.

(b)

ECONOMICS

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013

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

Paper II : ECONOMICS OF PUBLIC ENTERPRISES

| | | |
|----------------------|---|----------|
| Max. Marks | : | 100 |
| Theory | : | 90 Marks |
| Internal Assessment | : | 10 Marks |
| Time | : | 3 Hours |
| Total Teaching Hours | : | 60 |

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, Role of B.I.C. & P. 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. Laxmi Narain : Principles and Practices of Public Enterprises Management, S. Chand & Co., New Delhi, 1980.
2. -do- : Public Enterprises in India, S. Chand & Co., New Delhi, 1982.
3. Institute of Public Enterprises : Organisation in Public Enterprises, Tripathi, Bombay, 1967.
4. -do- : Pricing and Investment in Public Enterprises, Oxford and IBH Publishing Co., New Delhi.

Supplementary Readings

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

Paper -III : HISTORY OF ECONOMIC THOUGHT

| | | |
|----------------------|---|----------|
| Max. Marks | : | 100 |
| Theory | : | 90 Marks |
| Internal Assessment | : | 10 Marks |
| Time | : | 3 Hours |
| Total Teaching Hours | : | 60 |

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions

3. Gide & Rist : A History of Economic Doctrine, George G. Harper & Co. Ltd., London, 1964.
4. P. M. Sweezy : The Theory of Capitalist Development, K. P. Bagchi & Co., Calcutta, 1991.

Supplementary Readings :

1. B. N. Ghosh & Rama Ghosh : Concise History of Economic Thought, Himalaya Publishing House, Delhi, 1980.
2. J.A. Schumpeter : History of Economic Analysis (Selected Portions), George Allen & Unwin, London, 1961.
3. R.R. Paul : Classical Political Economy, Kalyani Publishers, Delhi, 1979.

Paper-IV : INDUSTRIAL ECONOMICS

| | | |
|----------------------|---|----------|
| Max. Marks | : | 100 |
| Theory | : | 90 Marks |
| Internal Assessment | : | 10 Marks |
| Time | : | 3 Hours |
| Total Teaching Hours | : | 60 |

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

Paper- V : COMPUTER APPLICATIONS IN ECONOMICS

| | | |
|----------------------|---|----------|
| Max. Marks | : | 100 |
| Theory | : | 90 Marks |
| Internal Assessment | : | 10 Marks |
| Time | : | 3 Hours |
| Total Teaching Hours | : | 60 |

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

Introduction to Computers : Simple Model of a Computer; Steps in problem solving on a computer; Data representation; Input/Output devices; Computer memory; Central Processing Unit (CPU); Computer generations and classifications.

Unit-II

Introductory Programming : Algorithm, Computer Program and Programming languages; Basic data types

SOCIOLOGY

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013

A student opting for B.A. (Hons.) in Sociology will be required to take up 2 papers in the 2nd year and 2 papers in the 3rd year out of the following :

- Paper I** : (SOC 251) : **Social Thought (Compulsory)** (Written : 90 marks)
(Internal assessment : 10 marks)
- Paper II** : Any one of the two **Options** :
- Option (i) (SOC 252) Social Psychology (Written : 90 marks)
(Internal assessment : 10 marks)
- Option (ii) (SOC 253) Modern Indian Social Thought (Written : 90 marks)
(Internal assessment : 10 marks)

Paper-I (SOC 251) : SOCIAL THOUGHT (Compulsory)

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

Note : 1. For written paper, the students will be required to attempt **five** questions in all. Question No. 1 will be **compulsory** and will cover the entire syllabus. In addition to it, students will attempt **four**

UNIT-II

Emile Durkheim : Social facts, 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.

Suggested Readings :

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

Further Readings :

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

Paper-II : Opt (i) (SOC 252) : SOCIAL PSYCHOLOGY

| | | |
|---------------------|---|----------|
| Max. Marks | : | 100 |
| Theory | : | 90 Marks |
| Internal Assessment | : | 10 Marks |

Essential Readings :

1. Curtis : *Social Psychology*, New York : McGraw Hill, 1960.
2. Fraser, C. & Burchell, B. : *Introducing Social Psychology*, Cambridge : Polity Press, 2001.
3. Kuppaswamy, B. : *Social Psychology*, Bombay, Asia Pub. House, 1980.
4. Krech, D. & Cretchfield, Richards : *Theory & Problems of Social Psychology*

PHILOSOPHY

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013

**Paper-I : 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 familiarise 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



- Unit-II** : The meaning and purpose of education.
- Unit-III** : Nature of knowledge and its relation to sensation.

Unit-II

2. Krech, D., Crutchfield, R. S. and Ballachey, H. (1979) : Individual in Society, New York : McGraw Hill.
3. Luthans, F. (1998) : Organizational Behaviour, New York : Irwin McGraw Hill.

Reference Books :

1. Lindgren, H.C. (1973) : Introduction of Social Psychology, New York : Wiley.
2. Robbins, S.P. (1998) : Organizational Behaviour, New York : Prentice Hall of India.
3. Singh, A.K. (2009) : Tests, Measurements, and Research Methods in Behavioral Sciences, New Delhi : Bharti Bhawan.

Paper-II : SYSTEMS OF PSYCHOLOGY

| | |
|---------------------|------------|
| Max. Marks | : 100 |
| 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 :

Unit-III : *Psychoanalysis* : Basic Postulates; Freud; Adler; Jung.

Neo-Psychoanalysis : Basic Postulates; Horney; Sullivan; Erikson.

Unit-IV : *Gestalt* : Basic Postulates; Wertheimer, Kohler and Koffka; Lewin.

Humanistic Existential : Basic Postulates, Maslow; Rogers; Existential Philosophers.

Books Recommended :

Essential Books :

1. Marx, M.H., and Cronan-Hillix, W.A. : Systems and Theories in Psychology, New York : (1987) McGraw Hill.
2. Chaplin, J.P., and Kraweic, T.S. : Systems and Theories of Psychology, New York : Holt, (1984) Rinehart, and Winston.
3. Woodworth, R.S., and Sheehan, M.R. : Contemporary Schools of Psychology, London : (1964) Methuen.

Reference Books :

1. Hall, C.S., Lindzey, G. and Campbell, J.B. (1998) : Theories of Personality, New York : John Wiley and Sons.
2. Bower, G.H. and Hilgard, E.R. (1981) : Theories of Learning, New Delhi, Prentice Hall of India.
3. Wolman, B.B. (1979) : Contemporary Theories and Systems in Psychology, Delhi : Freeman.
4. Schultz, S. and Segultz, E. (2007) : A History of Modern Psychology, Thomson Wardsworth Publishers.

GEOGRAPHY

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013

Paper-I : THE NATURE OF GEOGRAPHY

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

Objectives :

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

Max. Marks : 100

3. Fred W. Riggs : *Administration in Developing Countries*

Further Readings :

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

Paper-II Options (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, industrial dispersal.

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

For Private/U

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, 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 :

1. S.C. Kuchhal : *Industrial Economy of India* (Allahabad : Chaitanya Publishing House, 1983).
2. S.S. Marathe : *Regulation and Development : The Indian Policy Experience of Controls over Industry* (New Delhi : Sage Publications, 1986).
3. Rudar Dutt : *Indian Economy* (New Delhi : S. Chand, 2009).
4. A.N. Aggarwal : *Indian Economy* (New Delhi : Vikas Publishing House, 2001).

Further Readings :

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

Essential Readings :

1. Anandswarup Gupta : *The Police in British India 1861-1947, Bureau of Police Research and Development* (New Delhi, 2007)
2. J.C. Chaturvedi : *Police Administration and Investigation of Crime* (Isha Books, Delhi, 2006)
3. S.K. Ghosh & K.F.M. Rustamji : *Encyclopaedia of Police in India*, Vol. I, II, III, 1993, 1994 and 1997.
4. Vdackumchery, James :

ANCIENT INDIAN HISTORY, CULTURE & ARCHAEOLOGY**B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013**

ot . **The students shall have to opt for two papers for 2nd year examination out of the following four 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-III | : | Political ideas and institutions from the earliest times to 1000 A.D. |

Unit-II

3. Origin and development of caste system.
4. Slavery in ancient India.
5. Stages of life—four asramas.

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*, Banaras, 1938.
2. Altekar, A.S. : *Education in Ancient India*, Varanasi, 1956.
3. Banerji, S.C. : *Society in Ancient India*, New Delhi, 1997.
4. Basham, A.L. ed. : *Cultural History of India*, New Delhi, 1957.
5. Chanana, D.R. : *Slavery in Ancient India, as depicted in Pali and Sanskrit Texts*, Delhi, 1960.
6. Ghurye, G.S. : *Caste and Class in India*, Bombay, 1950.
7. Majumdar, B.P. : *Social and Economic History of North India*, Calcutta, 1960.
8. Mookerjee, R.K. : *Ancient Indian Education*, London, 1947.
9. Sharma, B.N. : *Social Life in Northern India*, 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

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 of Political Ideas and Life* : Vedic literature, Epics, the *Arthasastra* of Kautilya, *Smritis* of Manu and Yajnavalkya.

2. *Political Institutions* : State, King, Council of Ministers and

Unit-I

Spread of Indian Culture in the Central Asian States.

Unit-II

Introduction of Buddhism in China and the early contacts.

Unit-III

Chinese pilgrims in India – Fahien, Hiuen Tsang and I-Tsing.

Unit-IV

- (a) Spread of Buddhism in Tibet up to 12th century A.D. with special reference to the missions of Padma Sambhava.
- (b) Lamaism.

Essential Readings :

1. Bagchi, P.C. :

POLICE ADMINISTRATION**B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013****Paper I : 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 two internal examinations and attendance.

(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 each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions carrying 2 marks (9×2=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 (4×18=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.

(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 each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions carrying 2 marks (9×2=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 (4×18=72 marks).

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

Essential Reading

1. Paranjpe, N.V. : Criminology and Penology, Central Law Publications, Allahabad, 2008.
2. Ahuja, R. : Criminology, Rawat Publications, Jaipur, 2008
3. Abadinski, Howard : Probation and Parole : Theory and Practice, Prentice Hall Inc., New Jersey, 1997.
4. Foucault, Michel : Discipline and Punish: The Birth of the Prison, Vintage Books, 1995.
5. Davies, Martin : Prisoners of Society: Attitudes and After-Care.

Further Readings

1. Abadinsky, Howard : Organized Crime, Wadsworth-Thomson Learning Academic Resource Centre, CA, 2003.
2. Hassine, Victor : Life Without Parole: Living in Prison Today, Roxb15.4274(nt)16J AublicoizCAmsni, Him Afg :e:, Mm.

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8095(c)15.4274(,)k-11.9048(-)-11.9048(V)8.04792(e)oy3.8095(c)15.38071(s)15.4288(l)161.5232(y)47.6191(:)-23.8095(-)-59.9048(M)8.04792(a)11.90

1.5232(-)-11.9048(J)D.71368(e)15.4274(w)-7.71368(i)h23.8095(i)16.0958(z)-11.9048(-)11.9048(C)19993.8095(.)11.9047()JTJ 13.68 TL ()'-221.28 -

MUSIC (VOCAL AND INSTRUMENTAL)

B.A. (HONOURS) SECOND YEAR EXAMINATION, 2013

Note : *General Instructions :*

1. Harmonium will not be allowed as an accompaniment in Vocal Music. The candidate has an option to take either Vocal or Instrumental Music as a subject. He/She has the option to take any one of the following instruments :
Sitar, Sarangi, Veena, Sarod, Dilruba, Violin, Bansuri, Shahnai and Tabla.

UNIT-IV

1. Brief knowledge of the following :
Nada, Swara, Shruti, Nyas, Vadi, Laya, Tala, Zamzama, Jod Alap, Gat, Present Raglakshanas, Avirbhava and Tirobhava.
2. Comparative study of Bhatkhande and Vishnu Digamber Notation System.

UNIT-V

1. Description and Comparative study of Detailed and Non-detailed Ragas and to write the notations of Detailed ragas.
 - (a) Detailed Ragas :

B.A. (HONOURS) /B.SC.(HONOURS) SECOND YEAR SYLLABUS

HOME SCIENCE

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

PHYSICS

B.Sc. (HONOURS) SECOND YEAR EXAMINATION, 2013

Note : There will be two papers of 100 marks each.

- I. Theoretical Physics
- II. Atomic Spectroscopy and Lasers

Each paper will consist of 3 sections :

Section –A : ks

SECTION-B : Laser

- I Introduction :**
Directionality, intensity, monochromaticity, coherence.
- II Einstein's Quantum Theory of Radiation :**
Einstein's Coeffs, momentum transfer, lifetime, possibility of amplification.
- III Masers :**
Two level ammonia maser, hydrogen maser, three-level maser system.
- IV Simple Optical Processes :**
Wave and interference, coherence, coherence of the field and the size of the source, coherence and monochromaticity, kinematics of optical absorption.
- V Basic Principles of Lasers :**
Population inversion, laser pumping (two and three level systems), resonators, vibrational modes of a resonator, number of modes per unit volume. Open resonators, confocal resonator, quality factor, losses inside the cavity, the threshold condition, quantum yield.
- VI Types of Lasers :**
Ruby laser, its pumping power & spiking. He-Ne laser, CO₂ laser.
- VII Dynamics of Laser Processes :**
Q-switching, mechanical shutter, electro-optical shutters, shutters using saturable dyes, peak power emitted during the pulse. Giant pulse dynamics, laser amplifiers, mode locking.
- VIII Applications :**
Holography : Its principle, recording & reconstruction of the image, theory and practical applications (Qualitative).

Non-linear Optics : Harmonics generation, second harmonic generation, phase matching, third harmonic generation, optical mixing.

Books :

1. Gupta, S.L., Kumar, V. : Elements of Spectroscopy (Pragati Prakashan, Meerut).
and Sharma, R.C.
2. Laud, B.B. : Lasers and Non-linear Optics (Wiley Eastern Limited, New Delhi, 2nd Ed.)

CHEMISTRY**B.Sc. (HONOURS) SECOND YEAR EXAMINATION, 2013****Outlines of Tests**

| | <i>Lecture Hours</i> | <i>Marks</i> | |
|---------------------------------|----------------------|---------------|----------------------------|
| | | <i>Theory</i> | <i>Internal Assessment</i> |
| Paper I : Organic Chemistry | 40 | 90 | 10 |
| Paper II : Analytical Chemistry | 40 | 90 | 10 |

Paper I : ORGANIC CHEMISTRY

| | | |
|---------------------|---|---------|
| Max. Marks | : | 100 |
| Theory | : | 90 |
| Internal Assessment | : | 10 |
| Time | : | 3 Hours |
| Lectures | : | 40 |

OBJECTIVE OF THE COURSE :

To teach the fundamental concept of Chemistry and their applications, the syllabus pertaining to B.Sc. (HONOURS) 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 :** (10 Lectures)
Hoffmann, Curtius, Lossen-similarities, advantages and stereochemistry at the migrating group, effect of migrating group on rate of reaction. Baeyer Villiger Rearrangement, 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-II

- Stereochemistry :** (10 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, 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.

Unit-III3. **Organic Chemistry of Life :** (10 Lectures)

Nucleic Acids : Nucleosides; Pentoses, heterocyclic bases, nucleotide; Purines and phosphate, DNA and RNA Hydrogen bonding and DNA replication (heredity), enzymes, nomenclature of enzymes, characteristics of enzymes, coenzyme A and prosthetic group. Coenzyme derived from niacin and examples of redox reaction with it.

Unit-IV4. **Pericyclic Reactions :** (10 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, (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 (Previtamin D₃).

4. **Precipitation Equilibria :** (5 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.
5. **Complexation Equilibria :** (5 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-IV

6. **Solvent Extraction and Ion-Exchange Separation :** (6 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.
7. **Radioisotope Methodology and its Applications :** (4 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 n questions comprising $\frac{n}{2}$ questions from each unit and n compulsory question of short answer type covering whole syllabi.
- (ii) The students are required to attempt F questions in all, n question from each unit and the Compulsory question.
- (iii) All questions carry equal marks.

Suggested Books:

1. Skoog, D.A., West, D.M., Saunders, H.,

BOTANY**B.Sc. (HONOURS) SECOND YEAR EXAMINATION, 2013**

| | | <i>Theory</i> | <i>Int.</i> | <i>Total</i> | <i>Practical</i> | <i>Int.</i> | <i>Total</i> |
|------------------|---|---------------|----------------|--------------|------------------|----------------|--------------|
| | | | <i>Assess.</i> | | | <i>Assess.</i> | |
| Theory Paper-A : | Plant Physiology and Ecology | 68 | + 7 | 75 | 22.5 | + 2.5 | 25 |
| Theory Paper-B : | Development of Plants and their Utilization | 68 | + 7 | 75 | 22.5 | + 2.5 | 25 |
| Total : | | 150 | | | 50 | | |

Note :

UNIT-III**ECOLOGY****Introduction :**

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

Ecological Adaptations :

Suggested Readings :

1. Barbou, M.G., Burk, J.H. and Pitts, W.D., 1987 : *Terrestrial Plant Ecology*, Benjamin/Cummings, Publications Co., California.
2. Galston, A.W., 1989 : *Life Processes in Plants*, Scientific American Library, Springer-Verlag, New York, USA.
3. Hill, M.K., 1997 : *Understanding Environmental Pollution*, Cambridge University Press.
4. Hooykaas, P.J.J., Hall, M.A. and Libbenga, K.R. (eds.), 1999 : *Biochemistry and Molecular Biology of Plant Hormones*, Elsevier, Amsterdam, The Netherlands.
5. Hopkins, W.G., 1995 : *Introduction to Plant Physiology*, John Wiley & Sons, Inc., New York, USA.
6. Kormondy, E.J., 1996 : *Concepts of Ecology*, Prentice-Hall of India Pvt. Ltd., New Delhi.
7. Mackenzie, A. et al., 1999 : *Instant Notes in Ecology*, Viva Books Pvt. Ltd., New Delhi.
8. Moore, T.C., 1989 : *Biochemistry and Physiology of Plant Hormones (2nd edition)*, Springer-Verlag, New York, U.S.A.
9. Odum, E.P., 1983 : *Basic Ecology*, Saunders, Philadelphia.
10. Salisbury, F.B. and Ross, C.W., 1992 : *Plant Physiology (4th edition)*, Wadsworth Publishing Co., California, U.S.A.
11. Taiz, L. and Zeiger, E., 1998 : *Plant Physiology*

3. To study ecological adaptations (morphological and anatomical) in plants (hydrophytes, xerophytes, epiphytes).
4. To determine minimum area of sampling unit (quadrat) for the study of grassland community.
5. To estimate Importance Value Index for grassland species.
6. To study leaf form spectrum of a woodland.
7. To prepare maps of India with respect to (i) major climatic zones, (ii) forest types, and (iii) biogeographical regions and to comment on it.

Suggested Readings (for laboratory exercises)

1. Misra, R., 1968 : *Ecology Work Book*, Oxford & IBH, New Delhi.
2. Moore, P.W. and Chapman, S.B., 1986. : *Methods in Plant Ecology*, Blackwell Scientific Publications.
3. Smith, R.K., 1996 :

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.

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-II**Secondary Body of the Plant :**

Vascular cambium; secondary xylem (basic structure of wood); secondary phloem and periderm.

Role of Wild Plants in Ecosystem Functioning :

A general account.

Domestication of Plants :

Primary and secondary centers of diversity; plant introduction.

UNIT-III

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

Legumes :

Chickpea (Bengal gram), red gram (arhar) and fodder legumes – a general account.

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 properties of *any ten* plants of your region.

13. Sambamurthy, A.V.S.S. and Subramanyam, N.S., 1989 : *A Textbook of Economic Botany*, Wiley Eastern Ltd., New Delhi.
14. Sharma, O.P., 1996 : *Hill's Economic Botany*, Tata McGraw Hill Publishing Company Ltd., New Delhi.
15. Simpson, B.B. and Conner-Ogorzaly, M., 1986 : *Economic Botany –Plants in Our World*, McGraw Hill, New York.
16. Steeves, T.A. and Sussex, I.M., 1989 : *Patterns in Plant Development*, 2nd edition, Cambridge University Press, Cambridge.
17. Thoms, P., 2000 : *Trees : Their Natural History*, Cambridge University Press, Cambridge .
18. Tippo, O. and Stern, W.L., 1977 : *Humanistic Botany*, W.W. Norton, New York.
19. Vishnu Swarup, 1997 : *Ornamental Horticulture*, Macmillan India Ltd., New Delhi.

Suggested Laboratory Exercises

Teachers may collect plants/materials available in their locality/institutions

| | | |
|---------------------|---|------------|
| Max. Marks | : | 25 |
| Practical | : | 22.5 marks |
| Internal Assessment | : | 2.5 Marks |

1. Study of organisation in a flowering plant. Role of shoot apical and root apical meristem (using whole mounts of shoot tips of *Hydrilla*, vertical sections of *Coleus* or *Bryophyllum*, and whole mounts of root tips of *Pistia*, or vertical sections of root tips of onion, maize, aerial roots of *Ficus benghalensis* or *Tinospora cordifolia*).
2. 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.
3. Morphology and anatomy of stems, roots, and leaves using stained hand sections of permanent slides (tapioca, carrot, radish, onion, garlic, turnip, potato, etc.).
4. Study of vascular cambium in stem and root. Secondary growth. Examples of cambial variants and resultant secondary structures.

5. Preparation of world maps to show Vavilov's centres of origin or cultivated plants and Zhukovsky's concept of mega centres.
6. Preparation of maps showing the centres of primary diversity of important economic plants that originated in India and the regions of cultivation of plants introduced from the New World. Africa, Europe, Central Asia, Australia, Malaysia, China.
7. Study of vegetative and reproductive morphology and anatomy of wheat, rice, maize, sorghum, bajra, potato and sugarcane. Also study of starch grains in these plants (except in sugarcane). Epidermal structure of sugarcane stem and leaves. Tests for sucrose.
8. Study of vegetative and floral morphology, and pod development in chickpea and red gram. Familiarization with four fodder legumes (such as berseem, Lucerne, methi, *Clitoria*, guar, cowpea, etc.).
9. Study of structure of oil storing tissues in sectioned seeds of mustard, groundnut and soyabean, and coconut endosperm, using micro-chemical tests.
10. Study of vegetative, floral and fruit morphology of cotton. Ontogeny of cotton fibre in young ovules and tracing the development of cotton fibre. Mature microscopic structure of cotton fibre.

UNIT-I

1.

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

- VI. Examine water sample for biotic communities from particular zone of lake, sketch and demonstrate. (4)
- VII. Identify the given chart/diagram. Write a brief note on it. (2)