

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

SYLLABI

FOR

**OUTLINES OF TESTS, SYLLABI AND COURSES OF READING IN THE
HONOURS SUBJECTS OF THE B.A./B.Sc. THIRD YEAR FOR THE
EXAMINATION, 2016-2017**

**B.A. (HONOURS) ENGLISH
SEMESTER V**

PAPER : 20th Century Literature

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

Texts :

1. G.B. Shaw : *Arms and the Man.*
2. George Orwell : *Nineteen Eighty Four.*
3. D. H. Lawrence : *The Rainbow.*
4. W.B. Yeats : (i) *Among school Children*
(ii) *The Second coming*
(iii) *Lake of Isle Innisfree*

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 20th Century with internal choice

B.A. (HONOURS) ENGLISH
SEMESTER VI

PAPER : INDIAN WRITING IN ENGLISH

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

Texts :

- | | | | | |
|----|----------------|---|--|------------------------------------|
| 1. | Tagore | : | (i) <i>The Joureny</i>
(ii) <i>Sea Shore.</i>
(iii) <i>Maya</i> | } <i>Selection from Geetanjali</i> |
| 2. | Mulk Raj Anand | : | <i>Coolie.</i> | |
| 3. | R.K. Narayan | : | <i>The Vender of Sweets</i> | |
| 4. | Kamla Dass | : | (i) <i>An Introduction</i>
(ii) <i>Forest Fire</i>
(iii) <i>The Freaks</i>
(iv) <i>My Grandmother's House</i> | |

Testing :

- There will be one question with reference to context. Two stanzas with internal choice will be set from Tagore and Kamla Dass. Students will attempt one stanza from each Poet.. (10 marks)
- Four questions (one on each author) of 20 marks each will internal choice. (20 × 4 = 80 marks)

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SEMESTER-V

Books Recommended :

1. Sanskrit Drama : A.B. Keith.
2. Classical Sanskrit Literature : A.B. Keith.
3. A History of Sanskrit Literature : A.A. Macdone.
4. A History of Indian Literature, Vol. 1 : M. Vintenitz
5. History of Sanskrit Literature by V. Varadachari.
- 6.
- 7.
- 8.
- 9.

Note : All books are available at the Chaukhamba Sanskrit Series, Chaukhamba, Varanasi and Motilal Banarasidas, Jawahar Nagar, Bungalow Road, Delhi.

PERSIAN

B.A. (HONOURS) THIRD YEAR EXAMINATION, 2016-2017

SEMESTER V

PAPER-III : HISTORY OF PERSIAN LITERATURE

SAFIVID PERIOD

100 Marks

Time : 3 Hrs.

Books Recommended:

PERSIAN
B.A.(HONOURS) THIRD YEAR EXAMINATION, 2016-2017
SEMESTER-VI

Paper-IV MODERN PERSIAN

100 Marks

ARABIC

B.A. (HONOURS) THIRD YEAR (SEMESTER SYSTEM) EXAMINATION, 2016-2017
(Kept in Abeyance)

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FRENCH**B.A. (HONOURS) THIRD YEAR EXAMINATION, 2016****SEMESTER V****SEMESTER-5th: FRENCH LITERATURE**

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

INTRODUCTION TO HISTORY OF FRENCH LITERATURE FROM 17th– 18th CENTURY

Questions should be asked strictly from the prescribed text book

- | | | |
|----|--|----------|
| 1. | Five questions of 8 marks each based on History of French Literature | 40 Marks |
| 2. | Fill in the blanks or multiple choice questions on History of literature with maximum of 2 marks each. | 20 Marks |

Poetry: Explanation, central idea, critical appreciation of poems 30 Marks

1. L'amour et la folie (La Fontaine)
2. Le laboureur et ses enfants (La Fontaine)
3. Le lion et le rat (La Fontaine)
4. Le chêne et le Roseau (La Fontaine)
5. La Jeune veuve (La Fontaine)

Courses of Reading :

Mémento de Littérature française, by Hélène, Potelet, Publication Hatier, Profil Littérature. Only from 17-18 centuries to be studied.

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FRENCH

SEMESTER VI

SEMSETER-6th: HISTORY OF LITERATURE,POETRY &VIVA-VOCE

HINDI
(B.A. HONS. 3rd YEAR 5th SEMESTER 2016)

PAPER-III (A)

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HINDI
(B.A. HONS. 3rd YEAR 6th SEMESTER 2017)

PAPER-IV (B)

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Gkr gfj bk

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URDU**B.A.(Honours) VIth Semester 2016-17**

Theory

90 Marks

Internal Assesment

10 Marks

GERMAN

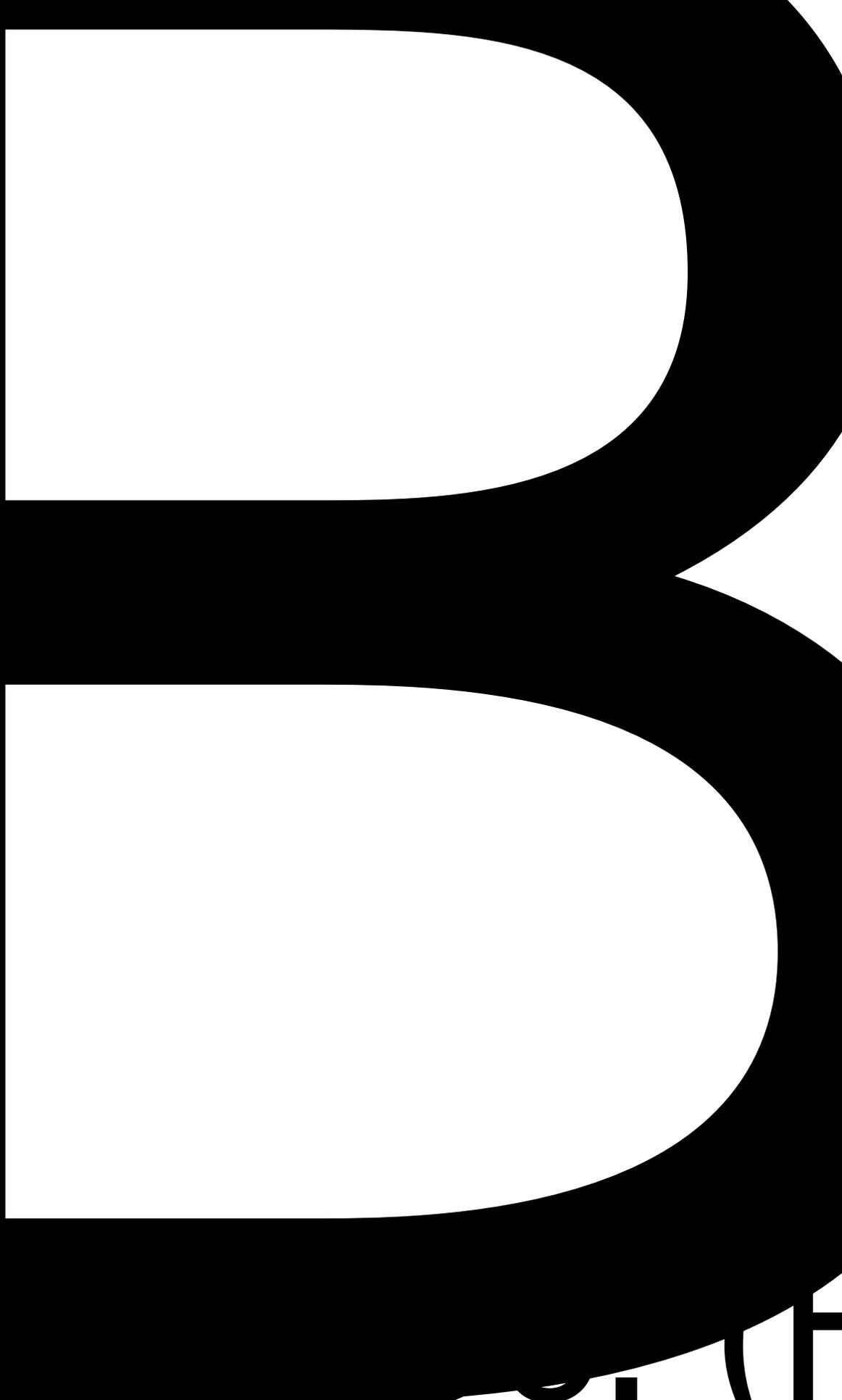
V- Semester

Summary

Max. Marks: 100 marks (Total)
Paper-1 (Theory): 90 marks
Internal Assessment: 10 marks

Paper – 1 (Theory): 90 marks (Total)
Time: 3 hours

B



SECTION-IV

1. Party-Army Relationship.
2. Communist party and its relationship with the Armed Forces.
3. Higher Defence Organisation.
4. Cultural Revolution.

BOOKS RECOMMENDED :

1. Balance, Edger O. : The Red Army of China, Russell Square, London.
 2. Chatterji, B.R. : Modern China –A Short History, Meenakshi Printing, Meerut.
 3. Encyclopaedia of Britannica.
 4. Gupta, R.S. : History of Modern China, Sterling Pub.
 5. Kapur, Harish : China in World Politics, Div. Pub., N.D.
 6. Liu, F.F. : A Military History of Modern China, Princeton Uni. Press.
 7. Mao Tse Tung : Communist Rule in China.
 8. Mc. Aleavy, Henry : The Modern History of China.
 9. Mitchison : Chinese Revolution.
 10. Nung Chen Li : The Political History of China, Princeton Uni. Press.
 11. Pelissier Roger : The Awakening of China, Secker and Warturg, London.
 12. Tregear, T.R. : A Geography of China, University of London.
 13. Wilson Dick : A Quarter of Mankind, Weidenfeld and Micholson Olson, London.
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HISTORY**B.A.(HONOURS) SEMESTER V/VI 2016-17**

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 one paper from the following:

Semester V

History of China

OR

History of Russia

(i) HISTORY OF CHINA:

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

General Instruction:

1. In all *nine* questions will be set, Each question will carry 18 marks.
2. First question shall be a Short Answer type containing 15 short questions spread over the whole syllabus. Candidates will attempt *nine* out of the fifteen short answer type questions in about 25-30 words each. It shall carry 18 marks (9x2) and shall be **compulsory**.
3. Rest of the paper shall contain 4 units. Each unit shall have two essay type question and the candidates shall attempt *one* question from each unit -4 in all.
4. Each essay type question will be set on half of the topics and not on a single sub topic.

Note: The Honours programme outlined below is intended to encourage an in depth study of some aspects of polity, economy, society and c.33333 0 0 8.33333 0 0 cm BT /R8 9.96 Tf 1 0 0 1 449.04 638.4 Tm-75.41(e)-1.78252(d)-6.b8 9.96 T

UNIT-III**REVOLUTION AND REFORM**

7. Boxer Rebellion 1900
8. Intellectual, Social and Economic Change
9. Rise of Sun Yat Sen and Revolution

UNIT-IV**RISE OF THE REPUBLIC**

10. Intellectual Revolution and National Unification
11. National Government 1928-37
12. Chinese People's Republic 1945-49

Recommended Readings :

1. Chesneaux, Jean Francoise Le : *China : From the Opium Wars to 1911 Revolution Vol.I.* Delhi : Khosla, 1978.
2. Hsu Immanuel : *C.Y., The Rise of Modern China*, New York : Oxford University Press, 1970.
3. Vinacke, Harold M. : *A History of the Far East in Modern Times*, New York : Appleton Century Crafts, 1961 (6th edn.).
4. Clyde, Paul Hibbert, : *The Far East : A History of the Impact of the West on Eastern Asia*, Englewood Cliffs, N.J. Prentice Hall : 1958 (3rd edn.).

(ii) HISTORY OF RUSSIA:

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

General Instruction:

1. In all *nine* questions will be set, Each question will carry 18 marks.
2. First question shall be a Short Answer type containing 15 short questions spread over the whole syllabus. Candidates will attempt *nine* out of the fifteen short answer type questions in about 25-30 words each. It shall carry 18 marks (9x2) and shall be **compulsory**.
3. Rest of the paper shall contain 4 units. Each unit shall have two essay type question and the candidates shall attempt *one* question from each unit -4 in all.
4. Each essay type question will be set on half of the topics and not on a single sub topic.

Note: The Honours programme outlined below is intended to encourage an in depth study of some aspects of polity, economy, society and culture in broad periods and significant epoch-235.92 -23.28 Td [(N)-0.826(5205.45568(4)01891200.0

UNIT-II

3. *Russia and the Far East* : Interventions in China, Mongolia and Manchuria.
4. *Background of Russian Revolution 1905-1917* : Revolution of 1905; Russia on the eve of the Revolution of 1917 – Polity, Society, Economy; Lenin’s Contribution 28.319126(o)-6.0241(n)6..01205(t)0.89126(h)-6.041(e)

UNIT-III Transformation in Post World War II International Relations :

- (a) Decline of Bipolarity.
- (b) Nature of Emerging World Order.

UNIT-IV New Global Scenario and International Relations:

- (a) Demand for New International Economic Order (NIEO)
- (b) Issue of Global Terrorism.

Suggested Readings :

1. Peter Calvocoressi : *World Politics Since 1945*, London : Longman, 1945.
2. Budhraj, V.S. : *International Relations After Second World War* (in Hindi),

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.

Objectives : The paper aims at creating understanding about the evolution of political thought in modern India with special reference to the stated philosophers.

- UNIT-I** **Sir Syed Ahmed Khan :**
- (a) As a Nationalist.
 - (b) Education.
 - (c) Muslim Nationalism-As a Communalist.
- UNIT-II** **M.K. Gandhi :**
- (a) Satyagraha.
 - (b) Swaraj.
 - (c) Non-Violence.
- UNIT-III** **M.N. Roy :**
- (a) Radical Humanism - critique of Marxism
 - (b) New Humanism
- UNIT-IV** **B.R. Ambedkar :**
- (a) Annihilation of Caste
 - (b) Social Justice
 - (c) Democracy : Political and Social

Recommended Readings:-

7. Chattarjee, Partha : *Nationalist Thought and the Colonial World, Delhi : OUP, 1986.*
8. Lyer, Raghavan : *The Moral and Political Thought of Mahatma Gandhi, Delhi : OUP, 1973.*
9. Pantham, Thomas, Parekh, : *Gandhi's Political Philosophy, London, Macmillan, 1989, Bhikhu.*
10. Ghatak, B.K. (ed.) : *Dr. Ambedkar's Thought, New Delhi : APH, 1997.*
11. Keer, Dhanajayay, Dr. Ambedkar : *Life and Mission, Bombay : Popular Parkashan, 1964.*
12. Zelliott, Eleanor : *The Social and Political Thought of B.R. Ambedkar in Pantham and Deutsch, 1986.*
13. Roy, M.N. : *New Humanism, Calcutta : Renaissance, 1953.*
14. Roy, M.N. : *The Philosophy and Practice of Radical Humanism, New Delhi : Radical Humanist Association, 1970.*
15. Roy, Samaren, M.N. Roy : *A Political Biography, Hyderabad : Orient Longman, 1997.*
16. Ray, Sibnarayan (ed.), M.N. Roy : *Philosopher Revolutionary, Delhi, Ajanta, 1995.*
17. Seth, Sanjay : *Marxist Theory and Nationalist Politics, The Case of Colonial India, New Delhi : Sage, 1995.*
18. B.R. Ambedkar (Author) and Arundhati Roy (Introduction) : *Annihilation of Caste: The Annotated Critical Edition, Navayana, Delhi, 2014.*
19. Chitkara, MG : *Dr. Ambedkar and Social Justice, APH Publishing Corporation, 2002.*
20. Christophe Jaffrelot : *Dr. Ambedkar and Untouchability: Analysing and Fighting Caste, Columbia University Press, 2015.*
21. Gail Omvedt : *Ambedkar: Towards An Enlightened India, Penguin India, 2008.*

OR

V SEMESTER: Option (iii) — WOMEN AND POLITICAL PROCESS

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

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

8. Phadnis, Urmilla and Malani Indira eds., *Women of the World : Illusion and Reality*

POLITICAL SCIENCE

B.A. (HONOURS) THIRD YEAR (SEMESTER SYSTEM) EXAMINA

Suggested Readings :

1. Bandhyopadhyaya, J., *Political and Social Thought of Gandhi*, Bombay, 1969.
2. George Lichtheim, *Marxism : An Historical and Critical Study*, Routledge and Kegan Paul, London, 1962.
3. Noel O' Sullivan, *Conservation*, St. Martin's Press,

Recommended 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 Ebenstien, *Great Political Thinkers—Plato to the Present*, OUP : New Delhi, 1966.

ECONOMICS
BA Honours (Fifth Semester) -2016
Third Year

The candidates are required to study **one of the** following papers:

- I Money and Banking.
- II International Economics.
- III Introduction to Econometrics.

Paper-I : MONEY AND BANKING

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

Objective: Money and Banking constitute important components towards understanding of economics. A clear understanding of the operations of money and banking and their interaction with the rest of the economy is essential to realize how monetary forces operate through a multitude channels- market, non market, institutes and among others, the state. The operation of financial markets and their regulations are to be studied to appreciate their key-role in an economy, especially after the far reaching banking and financial sector reforms in India and elsewhere. The present course is designed to acquaint the students fully with the changing role of financial institutes in the process of growth and development. Accordingly, the paper on 'Economics of Money and banking' is an optimal interaction of monetary theory, banking and non- banking financial institutes, which combines with itself a systematic discussion of the theory, institutions and policy with special reference to India.

The students would be evaluated at the end of each semester through subjective type questions/ answers (both short and essay type). The scripts would be evaluated by the examiners having adequate postgraduate teaching experience in the paper/option concerned.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES:

- (i) *The syll07(E)-4.2279(i5658)0. 8.88 0 Td ()Tj R14 9.(n)12.9455(e 0 Td(o)19455(i)-16.-25.8824(Tm ((-0.5)-.35049(R)4.23-16.-2*

UNIT-I

Definition of Money, Money and Near Money Assets.

Supply of Money: Components, Determinants- High Powered Money and Money Multiplier, Measures of Supply of Money in India.

UNIT-II

Demand for Money: Classical Theory, Keynes Liquidity Preference Theory, Friedman's Restatement of Quantity Theory of Money.

Central Banking: Main Functions, Techniques of Monetary Management, Monetary Policy of Reserve Bank of India.

UNIT-III

Commercial Banking: Main Functions, Major Developments and Reforms in Indian Banking System since 1991.

Non-Banking Financial Institutions (NBFIs) – Role and Structure NBFIs in India.

UNIT-IV

International Monetary Fund- Features and Role.

World Bank: Features and Role.

Asian Development Bank: Features and Role.

Recommended Readings:

1. Diulio A. Eugene : Theory and Problems of Money and Banking, International Edition (latest Edition) (Schaum's Outline Series)
- 2.

Paper-II: INTERNATIONAL ECONOMICS

B.A./ B.Sc. (HONOURS) THIRD YEAR (SEMESTER SYSTEM)

Paper-III: - INTRODUCTION TO ECONOMETRICS

Max. Marks : 100 Marks
Theory : 90Marks

UNIT-IV

Dummy Variables: The dummy Variable Trap. Interpretation of Slope and Intercept.
Lagged Variables: Uses in Economics. Estimation Problems, Koyck Transformation, Partial and Stock Adjustment Models.

Recommended Readings :

1. Gujarati, Damodar

ECONOMICS
B.A. Honours (Sixth Semester) -2017

The candidates are required to study **one of the** following papers:

- IV Environmental Economics
- V Economics of Labour
- VI Public Finance

Paper-IV : Environmental Economics

Max. Marks : _____

UNIT-IV

Cost-Benefit Analysis and the Environment: The Theory of Cost Benefit Analysis; Idea of Discounting and Choice of Discount Rate; Framework for Cost – Benefit Analysis; Discounting and Future Generation.

International Environmental Issue: Economics of Climate Change: Trade & Environment.

Economic Growth and Sustainable Development: Economic Growth and Development; the Environmental Kuznets Curve; Economics of Sustainable Development.

International Environmental Issues: Economics of Climate Change; Trade and the Environment.

Recommended Readings :

1. Goodstein, E.S. : Economics and the Environment(3rded.) Prentice Hall. (2002)
2. Hanley, N., : Environmental Economics in Theory and Practice, Macmillan
Shogern, J.F and
White, B
(1977)
3. Sankar, U. (ed) : Environmental Economics, Oxford University Press, New
James, A.J., M.N. Delhi.
4. Murty and Smita : Murty and Smita Mishra (1999), Economics of Water
Mishra(2006) Pollution- The Indian Experience, Oxford University Press,

Paper- V: Economics of Labour

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

COURSE Objective: Issues pertaining to the labour market, wage theories, employment policies, trade unions and collective bargaining in the globalized economy have become vitally important for developing countries. In a country like India where the bulk of the labour force is in the unorganized sector and the organized sector is witnessing “joblessness”, the importance of issues such as employment and social security for the growing millions continues to assume significance. This paper exposes students to theoretical as well as empirical issues relating to the labour market with special reference to India. The time-tested method of imparting verbal instructions through lectures would be used

The objective of the course is to provide students with the basic economic tools needed to understand and analyze how earnings are determined, how labour markets work and how various government policies may affect labour market.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES:

The syllabus has been divided into four units.

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

Unit I

Nature and Scope of Labour Economics, Nature and Characteristics of Labour Markets in Developing Countries like India.

Theories of Wages, Concept of Minimum Wage, Living Wage and Fair Wage in Theories and Practice.

Unit II

Wage Determination in various Sectors- Rural, Urban, Organized, Unorganized and Informal Sectors.

Poverty and Unemployment in Developing Countries, Unemployment: Concept, Types and Employment

Unit III

Impact of Rationalization, Technological Change and Modernization on Employment in Organized Private Industry and Public Sector; Employment in Agriculture Sector; Women and Child labour.

Unit IV

Role and Functions of Trade Unions, Growth, Pattern and Structure of Trade Unions in India, Achievements of Labour Unions, Collective Bargaining.

Industrial Disputes: Causes of Industrial Disputes, Their Settlement and Prevention Mechanism.

BOOKS RECOMMENDED

1. Binswanger, H. P. & M. R. Rosenzweig : Contrac

Supplementary Readings:

- 1.

UNIT-I

The Principle of Public Finance – Subjective and Objective Criteria.

Theory of Public Expenditure: Maximum Social Advantage, Theory of Social Goods: Distinction between

Public, Private and Merit Goods. Public Expenditure

SOCIOLOGY
B.A. (HONOURS) Fifth Semester

Methods and Techniques of Social Research

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

Note :

1. For written paper the students will be required to attempt five questions in all. Question No. I will be compulsory and cover the entire syllabus. In addition, students will attempt **four** essay type questions, one from each of the four units.
2. Question No. I will be compulsory comprising of short answer 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 :

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The students will be introduced with basic methods and techniques in social research. The objective of this course is to familiarize the students with the basic elements of scientific method, various methods of data collection and social measurement.

Course Content :

UNIT-I

UNIT-III

Techniques of Data Collection : Observation, Participant and Non-Participant Observation, Interview Schedule and Questionnaire (Structured/Unstr

UNIT-II

Population Theories : Malthusian theory of Population; Biological: Theory of Density Principle and Diet Theory; Social Theories: Social Capillarity and Theory of Diffusion: Theory of Demographic Transition.

UNIT-III

Concepts of Mortality : Causes of Mortality, Infant Mortality, Mortality in India.

Fertility : Concept of Fertility, Factors affecting Fertility–Biological, Socio-Cultural and Psychological Fertility in India.

UNIT-IV

Population Policy in India, Female Foeticide (reference to PNDT Act).

Essential Readings :

1. Bhende, Asha & Kanitkar, Tara : *Principles of Population* (revised ed.), Bombay: Tara Himalaya Publishing House, 1996.
2. Bogue, Donald, J. : *Principles of Demography*, New York: John Willey, 1969.
3. Nam, Charles, P. : *Population and Society*, 1968.
4. Premi, M.K. : *An Introduction to Social Demography*, Delhi: Vikas Publishing House, 1983.
5. Weeks, J.R. : *Population: An Introduction to Concepts & Issues*, London: Wardworth Publishing Co., 1988.

Further Readings :

1. Bose, Ashish : *India & The Asian Perspective*, New Delhi: B.R. Publishing Corporation, 1993.
2. Matras, Juda : *A Sociological Approach*, New Jersey: Prentice Hall, 1977.
3. Government of India : *National Population Policy* (2000), Ministry of Health & Family Welfare, GOI.

(Latest Census Reports and Sample Registration Bulletins of the Government of India.)
4. Premi, M.K. : *India's Population: Heading towards a Billion*, Delhi: B.R. Publications, 1991.

**B.A. (HONOURS) Sixth Semester
SOCIAL DEVIANCE**

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

Note :

1. For written paper the students will be required to attempt five questions in all. Question No. I will be compulsory and cover the entire syllabus. In addition, students will attempt **four** essay type questions, one from each of the four units.
2. Question No. I will be compulsory comprising of short answer quest

Interactionist Theories : Theory of Labelling (Edwin M. Lemert and Howard S. Becker).-+

UNIT-III

Controlling Deviance : Socialization - means and agencies, Social Control: means and

UNIT-II

4. Causality, Prediction and Probability.
5. Principle of Causality.
6. Causality as the existence of Laws.

UNIT-III

7. Causal Law and Statistical Laws.

Paper – A, Option (ii) : SOCIAL AND POLITICAL PHILOSOPHY

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

AIMS AND OBJECTIVES :

The paper aims at understanding the nature of social and political philosophy and some of its fundamental concepts; its major social and political theories and Indian political thought.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES:

The syllabus has been divided into four units.

There shall be 9 questions in all. 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, of 18 marks each.

Course Contents:**UNIT-I**

1. Nature and Scope of Social and Political Philosophy :
 - (a) Relation between Social and Political Philosophy and Social Sciences such as Sociology and Political Science with special emphasis on the distinction between Philosophy and Science.
 - (b) Empirical and Scientific study of society and politics as distinct from philosophical study of society and politics.

UNIT-II

2. Some Fundamental Concepts of Social and Political Philosophy :
 - (i) Distinction between Natural Facts and Social Facts.
 - (ii) Normative Aspects of Socio-Political Reality.
 - (iii) State and Civil Society.

- (iv) Liberty, Equality and Fraternity.
- (v) Social Change and Social Progress.
- (vi) Tradition and Modernisation.
- (vii) Power and Authority.
- (viii) Reform and Revolution.
- (ix) Justice.

UNIT-III

3. Major Social and Political Theories

- (a) Liberalism.
- (b) Egalitarianism.
- (c) Anarchism.

UNIT-IV

4. Indian Political Thought : Chanakya, Vivekananda, Gandhi, Ambedkar.

Essential Readings :

1. Ambedkar, B.R. : *Writings and Speeches*, Government of Maharashtra, Bombay., Vol. 18, 19 & 20, 2003/
2. Bhattacharyya, K.C. : *Studies in Philosophy*, Motilala (U.K.) Books of India, New Delhi, 1983.
3. Gautam, S.P. : *Samaj Darshan*, Haryana Sahitya Akademy, Chandigarh, 1991.
4. Tagore : *Religion of Man*, Rupa Publications, Paperback, New Delhi, 2002
5. Will Kymlica : *Samkalin Rajniti – Darshan Ek Parichay*, 2nd Ed. Pearson Delhi, 2010.
6. Kamal Nayan Chaubey : *Complete Works of Swami Vivekananda (relevant portions)* Advaita Ashram, Calcutta, 1957.

Suggested Readings :

1. Menon, Nivedita : *Seeing like a Feminist*, Zubaan New Delhi, 2013.
2. Miller, David : *Political Philosophy, A very short introduction*, Oxford University Press, New York, 2003

Course Contents :**UNIT – I**

1. Origin and meaning of Culture.
2. Culture, Civilization and the Individual.

UNIT – II

3. Religion as an Apex of Culture.
4. Culture and Language.

UNIT – III

5. Culture, Tradition and Modernity. The metaphysical loss of Human.
6. Sources of Indian Culture Tradition.

UNIT – IV

7. Role of Science and Technology in Cultural Evolution.
8. Inter – Cultural understanding and Hermeneutic Tradition.

Essential Readings:

1. Eliot : Notes towards definition of Culture, London, Faber & Faber (1962).
2. Gadamer : Truth and method. Continuum International, February (2005).
3. G.C. Pandey : Meaning and Process of Culture. Shivlal Aggarwal & Co. Agra (1972).
4. Sneh Pandit Ed. : Perspectives on Philosophy of Culture, Delhi, S. Chand (1980)
5. Vellassery Sebastian & Geeta Manaktala: Foundations of Indian Social Life: Cultural, Religious and Aesthetics. Booksurge Publishing U.S. (2008).
6. Wittgenstein : Culture and Value. translated by Peter Winch, Oxford Blackwell (1980).

Suggested Readings :

1. A.J. Toynbee : Civilization on Trial, Oxford University Press, 1948.
2. Paul Ricouer : Time and Narrative published by University of Chicago Press, London 1984.

OR

Paper – B, Option (iii) : AESTHETICS

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

AIMS AND OBJECTIVES :

This paper aims at familiarizing the students with the meaning and scope of Aesthetics, art and society, aesthetic experience according to the Western and Indian tradition.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be 9 questions in all. 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, of 18 marks each.

Course Contents :**UNIT-I**

1. Aesthetics, its meaning and scope.
2. Nature and function of art.
- 3.

UNIT-II

4. The relation of art to society.

UNIT-III

5. Meaning and purpose of art in the Indian Tradition.

UNIT-IV

6. Nature of Aesthetic experience according to the Western and Indian traditions.

Essential Readings :

1. Hiriyanra : *Art Experience*, Karyalaya Publications, Mysore, 1954 .
2. Susan, L. Feagin and Patrick Maynard (ed.)

PSYCHOLOGY

UNIT-III : *Reliability and Validity* :

Reliability : Concept, Types, Factors Affecting Reliability.

Validity : Concept, Types, Factors Affecting Validity; Relation between Reliability and

Validity.

UNIT-IV : *Interpretation of Test Scores* :

Criterion Referenced Scores : Content Referenced and Outcome Referenced Scores; Norms Referenced Scores; Concept of Norms, Types of Norms (Percentile Scale and T. Scale).

Note :

PSYCHOLOGY

B.A. (HONOURS) THIRD YEAR EXAMINATION, 2016-2017

Semester VI

OBJECTIVES :

- I Its aim is to introduce the students history, importance and classification of psychological testing and provide them with knowledge and procedure of test construction and standardization.
- II Pedagogy of the Course Work :
80% Lectures (including expert lectures).
20% assignments, discussion and seminars.

INSTRUCTIONS FOR PAPER-SETTER AND THE CANDIDATES :

There shall be 9 questions in all. Five questions in all are required to be attempted. The first question shall be Short Answer type containing 12 short questions spread over the whole syllabus and the candidate is required to answer 9 short questions in about 25-30 words each. It shall carry 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, of 18 marks each.

PAPER: APPLIED PSYCHOLOGY

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

UNIT-I : Concept of Counselling; Approaches to Counselling; Freudian, Experiential Client Centered, Gestalt, Existential, Cognitive Behaviour Therapy.

UNIT-II :

GEOGRAPHY

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 /i#e+ 4 Hours

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B.A./ B.Sc. (HONOURS) THIRD YEAR (SEMESTER SYSTEM)

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- /he i#5ortance o& ener y sources, &orest and 6ildli&e and their 5reservation to be studied.

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Forests: their significance; World reserves; deforestation; and conservation strategies.

Climate and environment relationships, regional distribution; conservation of biodiversity; and biodiversity in India. .A L A M 1 - lectures 3

Globalisation and Environment: Basic issues, environmental impact of globalisation and a call for action.

Global Environmental Issues: water contamination; atmospheric pollution; acid rain; noise pollution; and control strategies.

Comparative strategies, environmental issues and the international community; Bio-diversity on Earth

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1. Ehrlich, Paul, et al. +
Greenman and Co., San Francisco, 1966.
2. Toudie, A. +
Clarendon Press, Oxford, 1961.
4. Wickerin, G. +
London, 1961.
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- The interaction of teacher and students is based on issues related to environment, energy resources, forest and soil conservation.
- A field visit to those areas where soil erosion is a serious problem be arranged and methods of conservation be taught.

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UNIT-III

Groups : Concept; Types
Leadership : Styles of Leadership
Motivation : Concept; Determinants

UNIT-IV

Organisational Change : Concept; Resistance to change
Organisational Development : Concept; Need; Techniques
Organisational Effectiveness : Concept; Approaches

Essential Readings :

1. B.J.Kolasa : *Introduction to Behavioural Sciences for Business*(New York, Wiley, 1969)
1. K.K.Sharma & Pardeep Sahni : *Organisational Behaviour* (New Delhi: Deep & Deep, 1988)
3. Keith Davis : *Organizational Behaviour* (NewYork, McGraw Hill, 2001)
4. L.M.Prasad : *Organisational Behaviour* (New Delhi: Sultan Chand, 3rd Rev.

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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

Co-operation : Meaning, Significance and Evolution.

Co-operative Principles.

Co-operative Legislation : Government of India Act, 1912 and Punjab Co-operative Societies Act, 1961(as amended from time to time).

UNIT-II

Further Readings :

1. A.H. Hanson : *Public Enterprises and Economic Development*

Further Readings :

1. India, Centre for Science and Environment : *The State of India's Environment : A Citizen's Report* (Vishal Bhawan, New Delhi, 1982).
2. Naresh Kumar : *Air Pollution and Environment Protection : Legislative Policies, Judicial Trends and Social Perceptions* (New Delhi : Mittal, 1999).
3. Sheo Parkash Agnihotri : *Environment Conservation Management and Planning* (Allahabad : Chugh, 1992.)
4. Radha, S. and Sankhyan, A.S. : *Environmental Challenges of the 21st Century* (New Delhi, Deep, 2004).
5. G.S. Monga : *Environment and Development* (New Delhi : Deep and Deep, 2004).

PAPER- IV: OPTION (V): Emerging Issues in Public Administration

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

Objective of the Paper:

The purpose of this course is to familiarize the students with the emerging issues in Indian Administration. At the end of the course the students will have an understanding of the concepts of disaster management, human rights, regulatory administration in India, consumer protection, right to information, new areas of governance 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

Good governance – Concept and significance
E- governance – Concept and significance
Regulatory Administration - Concept and significance

Unit II

Transparency and Accountability in Administration – Significance
Mechanism – Social Audit, Results Framework Document (RFD)
Ethics and Integrity in Administration

Unit III

Human Rights - Concept and significance
Women Empowerment with special reference to National Mission for Empowerment of Women (NMEW)

- | | | |
|-----|--|---|
| 5. | Food & Agricultural Organization
(F.A.O.) | A handbook for trainers on participatory local development: The Panchayat & Training Module on social Audit |
| 6. | Ganesh Kawadia & Kanhaiya | Ahuja Environmental Issues of Development

(AmbalaCantt, India: The Associated Publishers, 2006) |
| 7. | Goel, S.L. | Encyclopedia of Disaster Management, Deep and Deep Publication Pvt. Ltd.2006 |
| 8. | Government of India | Guidelines for Results Framework Document

(RFD),www.performance.gov.in |
| 9. | Government of India | Second ARC – Third Report (Crises Management: From Despair to Hope) September 2006

Second ARC – First Report (Right to Information-Master Key to Good Governance)) June 2006 |
| 10. | Government of India | Second ARC – Eleventh Report (Promoting e-governance: The Smart Way Forward) December, 2008 |
| 11. | Government of India | Ministry of Skill Development and Entrepreneurship-
www.skilldevelopment.gov.in/pmkvy.html |
| 12. | Government of India | Ministry of Women & Child Development,
www.nmew.gov.in |
| 13. | Government of India | E-governance for Citizen Empowerment
National Information Centre, www.nic.in |
| 14. | | |

18. P.S.Jaswal and Jaswal Nishtha Environmental Law (Pioneer Publications, 2000)
19. Palekar, S.A. Development Administration PHI Learning Private Limited, New Delhi, 2012
20. Priyam Manisha, Krishna Menon and Madhulika Banerjee Human Rights, Gender and the Environment, Pearson, 2009
21. Trivedi Priya Ranjan Encyclopaedia of Environment and Development, 1989, Vol. 1, pp. 485-487
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ANCIENT INDIAN HISTORY, CULTURE & ARCHAEOLOGY

B.A. (HONOURS) SEMESTER – V EXAMINATION, 2016-17

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

Outlines of Test :

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- UNIT-IV** : Excavations of early historic cities of :
- (a) Northern India and Gangetic doab : Taxila and Hastinapura.
 - (b) Eastern India : Sisupalgarh and Chandraketugarh.
 - (c) Southern India : Arikamedu and Brahmagiri.

Pedagogy of the Course Work :

The students are made familiar with prehistoric, proto historic and historical sites through field visits. Slides, photographs of relevant sites, their signif

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

ANCIENT INDIAN HISTORY, CULTURE & ARCHAEOLOGY

B.A. (HONOURS) SEMESTER – VI EXAMINATION, 2016-17

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

Outlines of Test :

- Paper VII : Epigraphy and Numismatics
Paper VIII : Spread of Indian Culture in South-East Asia upto 12th Century A.D.

Paper-II : EPIGRAPHY AND NUMISMATICS

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

Objectives :

The paper is aimed to prepare students to handle the original source material – inscriptions and coins, which make the backbone of Ancient Indian History, as without the knowledge of epigraphy and numismatics, the subject cannot be mastered.

- 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 candidat

felt in those countries, it is, therefore, necessary to discuss the political history, art, architecture and religion of those regions.

- 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.

Essential Readings :

1. Chatterji, B.R. : *History of Indonesia*, (Early and Medieval) Meenakshi Prakashan, Meerut, 1967.
2. Chatterji, B.R. : *Indian Cultural Influence in Cambodia*, University of Calcutta, Calcutta, 1933.
3. Coedes, C. : *The Making of South East Asia*, University of California Press, London, 1966.
4. Coomaraswamy, A.K. : *History of Indian and Indonesian Art*, Kessinger Publishing, New Delhi, 1972.
5. Harrison, Brian, : *South East Asia, A Short History*, Macmillan Press, New York, 1966.
6. Majumdar, R.C. : *Hindu Colonies in the Far East*, K.L. Mukhopadhaya, Calcutta, 1944.
7. Majumdar, R.C. : *Suvarnavdipa, Ancient Indian Colonies in the Far East*, Modern Publication Syndicate, 1937.
8. Majumdar, R.C. : *Kambuja-Desa, or An Ancient Hindu Colony in Cambodia*, Lighting Source Incorporated, Madras, 1944.
9. Singhal, D.P. : *India and World Civilization*, Vols. I & II, Michigan State University Press, Calcutta, 1972.

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The objective of this course is to introduce to the students about the use of scientific techniques in the field of investigation. After providing knowledge in death, types of death and bodily changes after death, the students could be initiated in participation on how to preserve fingerprints, footprints, knowledge about handling of physical evidences, along with their packing and recording. In addition knowledge about the modern

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B.A. (HONOURS) MUSIC (VOCAL AND INSTRUMENTAL), 2016-17

SEMESTER-V

Paper-III :(Theory)

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

Note: There will be 10 questions in all and a student will attempt five questions choosing at least one from each unit.

UNIT-I

1. Definition with full explanation of the following :

Part B

Detailed Ragas:-

B.A. (HONOURS) MUSIC (VOCAL AND INSTRUMENTAL), 2016-17**SEMESTER-VI****Paper--:Theory**

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

UNIT – I

1. Definition with full explanation of the following :-
Ghaseet, Meend, Kan, Khatka, Murki, Kalavant, Vaggeykar
2. Principles of Aesthetics of Music and its importance

UNIT-II

1. Essays:- (i) Role of Music in National Integration
(ii) Lok Sangeet
2. Knowledge of musical aptitude and musical talent

UNIT-III

1. Description of Detailed & Non-detailed Ragas: -
Detailed Raga: - (i) Patdeep
(ii) Mian Ki Malhar
Non-detailed Ragas: - (i) Bhimpalasi
(ii) Bahar
Talas:- Tilwada, Adachautal

PART A

Ability to write notation of the Vilambit and Drut Gat of Ragas prescribed in the course:-
Patdeep, Mian ki Malhar

Part B

1. Ragas – Patdeep, Mian , Malhar
2. Non Detailed : BhimPalasi, Bahar
3. Tala: Tilwada and Ada Char Tala
4. Geet, Ghazal

HOME SCIENCE

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

PHYSICS**B.Sc. (HONOURS) THIRD YEAR (5th and 6th Semester) EXAMINATION, 2016-17****SEMESTER-V****Paper V: Physics of Semiconductors****Unit I**

Crystal Properties and Growth of Semiconductors: Semiconductor materials, Crystal lattices, Ge and Si crystal structure, production of electronic grade Si, Bulk crystal growth, Epitaxial growth.

Bonding forces and energy bands in solids, Metals, semiconductors and insulators, Direct and Indirect semiconductors, intrinsic and extrinsic semiconductors, compensation, Electrons and holes, effective mass, Fermi level, Conductivity and mobility, temperature dependence of Carrier concentration, effect of temperature, doping and field on mobility, Hall effect, Invariance of Fermi level at equilibrium.

Excess carriers in semiconductors: Optical absorption, Photoluminescence, Electroluminescence, Carrier lifetime and photoconductivity, photoconductive devices.

Unit II

Diffusion and drift of carriers: Einstein relation, built-in fields in semiconductors with different doping profiles, energy band diagrams. Steady state carrier injection, diffu6615(t)-4.60948(a)9.2.21631(a)9.21631(

Unit I

C Programming Language

Types of Computer Systems and Operating Systems.

Introduction to Programming : Algorithms, Structured Programming. Basic idea of Compilers.

Data and Statements : Data Types. Constants and Variables. Mathematical, Relational, Logical and Bitwise Operators. Expressions and Statements. Block, Local and

PHYSICS SEMESTER-VI

Paper VII: Nuclear Radiations and Detection

Unit I

Radiation Sources:

Radioactive decays: Alpha decay, β^- , β^+ and EC decays, Radioactivity units, gamma rays, Internal conversion, X-rays, Auger electron, Bremsstrahlung, Annihilation radiation.

Neutron sources- fission, radioisotope based sources and photoneutron sources, Accelerator based sources.

Radiation Interactions : Interaction of light and heavy Charged Particles, Stopping power, energy and range straggling.

Interaction of Fast Electrons - ionisation and radiative loss, backscattering.

Interaction of Gamma rays, photoelectric absorption, Compton scattering and pair production. Attenuation coefficient.

Interaction of Neutrons, Slowing down power, thermal neutrons.

Sources of Background: Natural radioactivity, Air borne radioactivity, Primary and secondary Cosmic rays.

Unit II

General Properties of Radiation Detectors: Modes of detector operation, Current mode, pulse mode, Pulse Height Spectra, Energy Resolution, Detection Efficiency, Dead Time-paralyzable and non-paralyzable models.

Radiation Detectors:

Ionization process in gases, Ion pair formation, fano factor, diffusion, charge transfer and recombination,

Charge Migration and Collection.

Gas-filled detectors: Gas Multiplication, avalanche formation, Regions of detector operation.

Proportional Counters, fill gases and choice of geometry.

Geiger-Mueller counter, Fill Gases and Quenching mechanism, Recovery time and dead time, detection of charged particles, gamma and neutrons rays with G.M. counter.

Scintillation Detectors : Organic and Inorganic Scintillators; Characteristics and parameters associated with Gamma ray spectrum

Semiconductor detectors.

Detection of slow and fast neutrons by neutron-induced reactions.

Recommended Books:

1. Radiation detection and measurement: G.F. Knoll (Wiley, New York) (2000).

Paper VIII: Physics Practical

Note : The students are expected to perform any 6 experiments taking at least 3 from each section.

Unit I

1. Measurement of vacuum using the Pirani/thermocouple and the rate using electric bulb & rate.
2. To study Poisson and Gaussian distributions using a G2 Counter.
3. To study absorption of alpha rays in Pb and Ge absorbers.
4. To determine the range of Al²⁷ source using solid state nuclear track detector.
5. To study related series and voltaic multiplier circuits using breadboard.

Unit II

1. To design an Astable multivibrator of given specifications using 555 timer (C).
2. To design a monostable multivibrator using 555 timer (C).

CHEMISTRY**B.Sc. (HONOURS) THIRD YEAR (SEMESTER SYSTEM) EXAMINATION, 2016****SEMESTER- V****Outlines of Tests**

		<i>Lecture Hours</i>	<i>Marks</i>	
			<i>Theory</i>	<i>Internal Assessment</i>
Paper V	: Inorganic Chemistry-A	20	45	05
Paper VI	: Physical Chemistry-A	20	45	05

Paper V: INORGANIC CHEMISTRY-A

Total Marks	: 50
Theory	: 45
Internal Assessment	: 5
Total Lectures	: 20

B.A./ B.Sc. (HONOURS) THIRD YEAR (SEMESTER SYSTEM) SYLLABUS 2016-2017

Paper VI: PHYSICAL CHEMISTRY-A

Total Marks	:	50
Theory	:	45
Internal Assessment	:	5
Total Lectures	:	20

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**Transport Properties-I :**

(5 Lectures)

Recapitulation of Collision Properties of gases such as collision cross section, collision diameter, collision number, collision frequency and mean free path.

Meaning of transport, Properties of gases, Flux, General equation of transport. Thermal conductivity, kinetic theory of thermal conductivity (derivation of the expression).

Unit-II**Transport Properties-II :**

(5 Lectures)

Viscosity of gases, kinetic theory of gas viscosity, (derivation of the expression). Measurement of gas viscosity, Diffusion Coefficient. Kinetic theory of diffusion in gases. (derivation of the expression).

Diffusion in liquids, theory of diffusion in liquids, diffusion in solutions, laws of diffusion.

Unit-III**Dynamic Electro-Chemistry :**

(5 Lectures)

Processes at electrodes. The electric double layer (Gouy-Chapman, Helmholtz and Stern models-qualitative ideas. The potential difference, Rate of charge transfer, Butler Volmer equation, Tafel plot, Overpotential Polarisation, Polarography, Fuel cells, Corrosion, Inhibition of Corrosion.

Unit-IV**Surface Chemistry :**

(5 Lectures)

Interfacial region, types of interfaces, surface tension, thermodynamics of surfaces, plane interface, curved surfaces, Laplace and Kelvin equations including their derivation.

Gibbs Adsorption Equation and its Thermodynamic derivation, Wetting and adhesion in solid-liquid systems, contact angle, Capillary rise and surface tension. Surface Films on liquids.

Instructions for paper setters and candidates:*i.*

CHEMISTRY**B.Sc. (HONOURS) 6th Semester EXAMINATION, 2016-2017****Outlines of Tests**

	<i>Lecture Hours</i>	<i>Marks</i>	
		<i>Theory</i>	<i>Internal Assessment</i>
PaperVII : Inorganic Chemistry -B	20	45	05
PaperVIII : Physical Chemistry -B	20	45	05

Paper VII: INORGANIC CHEMISTRY-B

Total Marks : 50

Theory : 45

Internal Assessment : 5

Total Lectures : 20

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(u)]TJ 205.(u)]TJ 205.(u)]TJ 205.(u)]TJ 205.(u)]TJ 205.(u)]TJ 205.(u)]TJ 205.

Unit-III

Reaction Mechanism :

(5 lectures)

Nature and classification of ligand substitution reactions, application of V.B. & C.F. theories to predict the substitution reactions. Mechanism of ligand replacement reactions, substitution in octahedral complexes acid hydrolysis, base hydrolysis, acid-catalysed, acid hydrolysis and acid hydrolysis for chelates.

Unit-IV

(5 lectures)

Substitution in square planar complexes. The trans-effect & its Synthetic applications, M.O. theories and trans-effects. Electron transfer reactions & their mechanism. Molecular rearrangements, mechanistic pathways of substitution.

Instructions for paper setters and candidates:

- iv. *Examiner will set total of NINE questions comprising TWO questions from each unit and ONE compulsory question of short answer type covering whole syllabi.*
- v. *The students are required to attempt FIVE questions in all, ONE question from each unit and the Compulsory question.*
- vi. *All questions carry equal marks.*

Suggested Books:

5. Cotton, F.A., G. Wilkinson, Advanced Inorganic Chemistry; 6th edition Pubs: John Wiley & Sons, 1999.
6. Basolo, F., Pearson, R.G., Inorganic Reactions; Reprint 2nd edition, Pubs: Wiley-Eastern, 1977.
7. Greenwood, N.N., Earnshaw, A., Chemistry of Elements; 1st edition, Pubs: Pergamon Press, 1984.
8. Hoyer, J.E., Keiter, E.A., Keiter, R.L., Inorganic Chemistry-Principles of Structure and Reactivity; 4th edition, Pubs: Pearson Education India, 1993.

Paper VIII: PHYSICAL CHEMISTRY-B

Total Marks	:	50
Theory	:	45
Internal Assessment	:	5
Total Lectures	:	20

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**Colloids-I :**

(5 Lectures)

The colloidal state; preparation of colloidal solutions, Methods of mt

Unit-III**Quantum Chemistry-I :**

(5 Lectures)

ATOMS : Schrodinger equation for multi-electron atoms, Need for approximate Solutions. Basic ideas of the Variation theorem and the Perturbation methods. Self-Consistent Field methods (Hertree and Hertree-Fock)- Elementary treatment only. Indistinguishability of Electrons. Pauli exclusion principle, two electron spin functions; Slater determinants and Pauli principle. New Atomic term symbols. Spin-orbit coupling (Total orbital momentum, multiplicity, total angular momentum) vector model of atom, Hund's rules, atomic spectra and Selection rules.

Unit-IV**Quantum Chemistry-II :**

(5 Lectures)

Molecules :

Schrodinger equation for molecules, Born-Oppenheimer approximation. Valence bond theory and Molecular Orbital theory as two approaches for approximate solution of Schrodinger equation LCAO-MO treatments of H_2 and Valence bond treatment of H_2 (complete solutions not required. Only wave functions to be discussed) Comparison of MO and VB treatments. Brief Introduction to the electronic structure for polyatomic molecules. Metals, Insulators and Semiconductors. Band Theory of Solids (elementary discussion).

Instructions for paper setters and candidates:

- iv. Examiner will set total of NINE questions comprising TWO questions from each unit and ONE compulsory question of short answer type covering whole syllabi.
- v. The students are required to attempt FIVE questions in all, ONE question from each unit and the Compulsory question.
- vi. All questions carry equal marks.

Suggested Books:

7. Atkins, P.W., Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
8. Levine, I.N., Physical Chemistry, 3rd edition, Pubs: Prentice Hall International Inc., 2000.
9. Pruton, Maron, Principles of Physical Chemistry; 4th edition, Pubs: Oxford & IBH Publishing Co. Pvt. Ltd., 1972.
10. Chandra, A.K., Introductory Quantum Chemistry; 4th edition, Pubs: Tata McGraw-Hill Publishing Company Ltd.
11. Moore, W.J., Basic Physical Chemistry; 1st edition, Pubs: Prentice-Hall of India Pvt. Ltd., 1986.
12. Albert, R.A., Physical Chemistry; 1st edition, Pubs: John-Wiley & Sons, 1992.

BOTANY**B.Sc. (Honours) Botany Fifth and Sixth Semester Syllabus****(Examination 2016-2017)****Fifth Semester**

Time	Theory	Int	Max
		Assess.	Marks

UNIT-III SEED PLANTS

Phanerogams, the seed bearing plants: General characteristics and types.

The Living Cycads: Distribution; vegetative organography and anatomy; reproductive cycle –sporophytes and sporangia, gametophytes, fertilization, embryogeny and seed development of *Cycas*.

The Coniferales: General organography and anatomy; foliage leaves; strobilli and sporangia; reproductive cycle– sporogenesis, gametophytes, fertilization, embryogeny and seed development of *Pinus*.

The Gnetales: Habit and distribution; vegetative organography and anatomy; reproductive cycle – the strobilli, sporogenesis, male and female gametophytes, pollination, fertilization and embryogeny of *Ephedra*.

UNIT-IV

Alternatives for Reproduction: Vegetative and sexual reproduction.

Flower: Evolution, concept of flower as a modified determinate shoot and functions of flower.

Structure of Anther : Microsporogenesis: formation of pollen grains (male gametophyte); pollen germination; pollen tube growth.

Structure of Pistil: Ovules; megasporogenesis; development of embryo sac (female gametophyte).

Mechanisms and Agencies of Pollination: Pollen-stigma interaction; self-incompatibility; double fertilization, apomixis.

Seed and Fruit: Development of endosperm and embryo in monocotyledons and dicotyledons; storage of reserve materials and desiccation in seeds; dormancy and seed germination; fruit maturation; ripening and dispersal.

Suggested Readings

1. Bhojwani, S.S. and Bhatnagar, S.P. The Embryology of Angiosperms, 4th revised and enlarged edition. Vikas Publishing House, Delhi, India, 2000.
2. Bold, H.C., Alexopoulos, C.J. and Delevoryas, T. Morphology of Plant and Fungi (4th Edition), Harper and Foul Co., New York, 1980.
3. Cronquist, A. The evolution and classification of flowering plants, Thomas Nelson (Printers) Ltd., London and Edinburgh, 1968.
4. Delevoryas, Th. Plant Diversification, Modern Biology Series. Halt, Rinehart and Winston, New York, 1965.
5. Dhand, Neelam. Systematics of Spermatophyta, Trueman Book Company, Jalandhar, India, 2006.
6. Dube, H.C. An Introduction to Fungi, Vikas Publishing House Pvt. Ltd., Delhi, India, 1990.
7. Foster, A.S. and Gifford, A.E.M., Jr. The Comparative Morphology of Vascular Plants, Vakils, Peffer and Simons Pvt. Ltd, 1967.
8. Gifford, E.M. and Foster, A.S. Morphology and Evolution of Vascular Plants, W.H. Freeman & Co., New York, 1989.

9. Gilbert, M.S. Cryptogamic Botany, Vol. I & II (2nd Edition), Tata McGraw Hill Publishing Co. Ltd., New Delhi, India, 1985.
10. Johri, B.M. Embryology of Angiosperms, Springer-Verlag, Berlin, 1984.
11. Kumar, H.D. Introductory Phycology, Affiliated East-West Press Ltd., New York, 1988.
12. Puri, P. Bryophytes, Atmaram & Sons, Delhi, India, 1985.
13. Raghvan, V. Molecular Embryology of Flowering Plants, Cambridge University Press, New York, 1997.
14. Rangaswamy, G. and Mahadevan, A. Diseases of Crop Plants in India, Prentice Hall India Pvt. Ltd. New Delhi, India, 1999.
15. Singh, V, Pande, P.C. and Jain, D.K. Diversity of Microbes and Cryptogams, Rastogi Publications, Meerut, India, 2008.
16. Sporne, K.R. The Morphology of Angiosperms. B.I. Publication, Bombay, India, 1977.
17. Srivastava, H.N. Diversity of Microbes & Cryptogams, Vol. I, Pradeep Publications, Jalandhar, India, 2014.
18. Srivastava, H.N. Diversity of Seed Plants and Their Systematics, Vol.III, Pradeep Publications, Jalandhar, India, 2014.
19. Wilson, N.S. and Rothwell, G.W. Palaeobotany and the Evolution of Plants (2nd Edition), Cambridge University Press, UK, 1993.

Suggested Laboratory Exercises (Biology of Cryptogams)

1. Comparative study of algal genera with reference to the classes mentioned in theory.
2. Comparative study of fungal genera with reference to the classes mentioned in theory.
3. Comparative study of morphology, anatomy and reproductive structures in *Riccia*, *Marchantia*, *Anthoceros* and *Funaria*.
4. Comparative study of different members of Pteridophytes mentioned in the theory syllabus.
5. Comparative anatomical structure of stem/wood of Cycadales, Coniferales, Ephedrales, Gnetales and angiosperms, from sections and macerations.
6. Comparative structure of the male and female cones of Cycads (*Cycas*), Conifers (*Pinus*) and Ephedrales (*Ephedra*).
7. Comparative structure of leaf, leaf appendages, venation and stomata of gymnosperms and angiosperms.
8. Diversity in pollen grain structure among Cycads, Conifers, Ephedrales and angiosperms with respect to size, exine sculpturing, germ spore number, number of constituent cells and any other features.
9. Microsporogenesis and male gametophyte development in angiosperms through microtome sectioning and acetocarmine squash technique.
10. Pollen grain germination by hanging-drop and sitting-drop techniques in *Impatiens*, *Catharanthus roseus* (= *Vinca rosea*) or any other suitable material.
11. Diversity in the structure of stigma, style, stigmatic papillae and transmitting tissue of style.

Suggested Readings:

1. Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, K. and Watson, J.D. Molecular Biology of Cell, Garland Publishing Co., Inc., New York, USA, 1999.
2. Atherly, A.G., Girton, J.R. and McDonald. The Science of Genetics, Saunders College Publishing Co., Fort Worth, USA, 1999.
3. Bhatia, K.N. and Dhand, Neelam. Cell Biology and Genetics, Trueman Book Company, Jalandhar, India, 2013
4. Buchanan, B.B., Gruissem, W. and Jones, R.L. Biochemistry and Molecular Biology of Plants, American Society of Plant Physiologists, Maryland, USA, 2000.
5. Dennis, D.T., Turpin, D.H., Lefebvre, D.D. and Layzell, D.B. (eds). Plant Metabolism (2nd Edition), Longman, Essex, England, 1997.
6. Gardener, J., Simmons, H.J. and Snustad, D.P. Principles of Genetics (8th Edition), John Wiley & Sons, New York, 1991.
7. Gupta, P.K. Cytogenetics, Rastogi Publications. Shivaji Road, Meerut, India, 1995.
8. Gupta, P.K. Cytology, Genetics and Molecular Biology, Rastogi Publications. Shivaji Road, Meerut, India, 2009.
9. Gupta, P.K. Genetics, Rastogi Publications. Shivaji Road, Meerut, India, 1994.
10. Hartl, D.L. and Jones, E.W. Genetics: Principles and Analysis (4th Edition), Jones & Bartlett Publishers. Massachusetts, USA, 1998.
11. Lea, P.J. and Leegood, R.C. Plant Biochemistry and Molecular Biology (2nd Edition), John Wiley and Sons, Chichester, England, 1999.
12. Lodish, H., Berk, A., Zipursky, S.L., Matsudaira, P., Baltimore, D. and Darnell, J. Molecular Cell Biology (4th Edition), W.H. Freeman and Co., New York, U.S.A, 2000.
13. Old, R.W. and Primrose, S.B. Principles of Gene Manipulation, Blackwell Scientific Publications, Oxford, UK, 1989.
14. Poehlmann, J.M. and Sleeper, D.R. Breeding Field Crops, Panima Publishing House, New Delhi, India, 1995.
15. Russel, P.J. Genetics (5th Edition), The Benjamin/Cummings Publishing Co., Inc., USA, 1998.
16. Sharma, J.R. Principles and Practice of Plant Breeding, Tata McGraw Hill Publishing Co. Ltd., New Delhi, India, 1994.
17. Simmonds, N.W. Principles of Crop Improvement, Longman, London and New York, 1979.
18. Snustad, D.P. and Simmons, M.J. Principles of Genetics (2nd Edition), John Wiley & Sons, Inc., USA, 2000.

19. Srivastava, H.N. Cell Biology and Genetics, Vol.II, Pradeep Publications, Jalandhar, India, 2006.
20. Srivastava, H.N. Plant Physiology, Biochemistry and Biotechnology, Vol.V, Pradeep Publications, Jalandhar, India, 2013.
21. Verma, P.S. and Agarwal, V.K. Cell Biology, Genetics, Molecular Biology, Evolution and Ecology. S. Chand & Company (Reprint, 2010).

Suggested Laboratory Exercises:

1. Determination of chromosome count from dividing pollen mother cells and root tips.
2. Preparation of karyotypes from dividing root tip cells and pollen grains.
3. Determination of intraspecific variation in chromosome number from locally available taxa.
4. Correlation o

BOTANY**B.Sc. (Honours) Sixth Semester (Examination May, 2017)****PAPER-A: MICROBIOLOGY AND PLANT PATHOLOGY**

Objectives: The basic objective of this paper is to make students familiar with the systematic position of microorganisms, their ultrastructure, classification and industrial application. It also deals with the important

B.A./ B.Sc. (HONOURS) THIRD YEAR (SEMESTER SYSTEM) SYLLABUS 2016-2017

BOTANY

UNIT-III**ENVIRONMENTAL BIOLOGY**

Introduction: Inter-relationship between the living world and the environment; the components and dynamism; homeostasis; relevance to man.

Earth as a System: The biosphere, the hydrosphere, the atmosphere and the lithosphere; components within biosphere (Biomes); parameters delimiting individual biomes.

The Environment: Soil, water and atmosphere – general account and adaptations.

Organismal Ecology/Biotic components: Individuals, species, population communities and their characteristics.

Ecosystems: Concepts of ecosystem; homeostasis; structure of ecosystem; functions of ecosystem; transfer of energy and minerals via grazing and detritus chains and role of micro-organisms; cycles (hydrologic, gaseous); role of humans in maintaining biogeochemical cycles.

Diversity of Ecosystem: Aquatic (fresh water); terrestrial (forest/grassland); man-made ecosystems.

UNIT-IV

Human Ecology and Ecological Management: The human population; renewable and non-renewable natural resources and their management; conservation of biodiversity; endangered species; conventional and non-conventional energy sources.

Impact of human activities: Pollution of air, water and soil; a brief account of environmental toxicology;

Q.1	Describe specimen A in technical terms & proper sequence. Draw F.D and V.S of the flower. Cut T.S of ovary and V.S of the flower and show it to the examiner. Write its F.F. as well.	6
Q.2	Identify specimen B and write Histopathological note on it.	3
Q.3.	Identify slides C by giving at least two reasons.	2
Q.4	Field Diary	2
Q.5	Practical note book	2
Q.6	Viva-Voce	3

ZOOLOGY**B. Sc. (HONOURS) SEMESTER – V****PAPER I: REPRODUCTIVE BIOLOGY AND HUMAN WELFARE-I****PAPER II: AQUATIC BIOLOGY-I****PAPER I: REPRODUCTIVE BIOLOGY AND HUMAN WELFARE-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

Scheme for Conduct of Practical Examination

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

Note : 1. Practical will be of 4 hrs. duration.

1. The students will be required to submit in writing the principles, methods employed and precautions to be observed wherever necessary within 1 hr. of the start of examination.

- | | | |
|------|---|-----|
| I | Draw a labeled sketch of given system and show to examiner/Spot parts of system on the charts/models. | (3) |
| II | Identification of phases of oestrous cycle. | (1) |
| III | Record biota in a given sample from a lake. Make labeled sketches and demonstrate them to the examiner. | (2) |
| IV | Examine the water sample for various communities from different zones of a lake and draw labelled sketches. | (2) |
| V | Identify the specimens/slides/charts A-D. Give reasons of the identification. | (4) |
| VI. | Note book and charts. | (3) |
| VII. | Viva-Voce. | (3) |

ZOOLOGY**B. Sc. (HONOURS) SEMESTER – VI****PAPER I: REPRODUCTIVE BIOLOGY AND HUMAN WELFARE-II****PAPER II: AQUATIC BIOLOGY-II****PAPER I: REPRODUCTIVE BIOLOGY AND HUMAN WELFARE-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 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

Neuro-Hormonal Regulation of production of Gonadal and Gonadotropic hormones.

UNIT –II

Neuro-Hormonal Regulation of production of Hypothalamic factors and Structural behaviour.

UNIT –III*Fertility Regulation*

Contraception and modern contraceptive technology-natural, mechanical, chemical immunological and surgical methods and Fertilization *in vitro* (Test tube baby).

UNIT -IV

Application of fertility regulation in live stock:

- i. Artificial insemination in farm animals.
- ii. Milk yield.
- iii. Egg production in poultry.

Books Recommended :

1. Milt, J. & Everitt, B.J., Essential of Reproduction, Blackwell Scientific Publications, 1985.
2. Genong, M., Reproduction, Saunders Intern. Publications, 1985.
3. Turner, C.P. & Bagnara, J.T., General Endocrinology, Saunders Intern. Publications, 1984.
4. Balin, H., & Glasser, S. (Eds.), Reproductive Biology, Excerpta Media, 1972.
5. Guyton, A.S., Text Book of Medical Physiology, 7th edition, Iquakushoinl/Saunders International Publications, 1994.

PAPER II: AQUATIC 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.

UNIT -I

Ecosystem : Study of ecosystem with particular reference to the components of aquatic ecosystem. Food chains and food webs. Flow of energy in a food chain.

UNIT -II

Physico-chemical characteristics of freshwater environment : Temperature, light, current of water, density, pH, dissolved oxygen, carbon dioxide and nutrients.

UNIT -III

Productivity : Concepts of productivity, primary, secondary and tertiary productivity, yield and carrying capacity.

UNIT -IV

