



**The Jammu & Kashmir  
State Board of  
School Education**

# **SYLLABI AND COURSES OF STUDY**

**FOR  
Class XII**

**Kashmir Division/Jammu Division (Winter Zone), 2017-18  
Jammu Division (Summer Zone), 2018-19**

**Published By  
THE JAMMU & KASHMIR STATE BOARD OF SCHOOL EDUCATION**



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Published by  
The J&K State Board of School Education  
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## SCHEME OF STUDIES

The students who shall see admission in Higher Secondary Part - II from the academic session (Oct-Nov) 2017 in case of Kashmir Division including winter zone of Jammu Division and academic session (April - May) 2018 in case of Jammu Division shall follow the given below scheme. The Scheme of studies and the combination of subjects at +2 stage has been prepared as per new scheme of studies. The revised combination of subjects is now as per the standard at National level particularly the standard set by the CBSE and has vertical linkage with under graduate courses offered by the University of Kashmir/Jammu.

### Subject Combination at Higher Secondary Part - II (Class 12<sup>th</sup>)

#### FACULTY OF SCIENCE

Group I	Group II	Group III	Group IV	Group V	Group VI	Group VII
General English (Compulsory)	Physics (Compulsory)	Chemistry (Compulsory)	Mathematics Applied Mathematics	Biology Statistics Geography	Geology Biotechnology Microbiology Biochemistry	Computer Science Informatics Practices Environmental-Science Functional English Physical Education Islamic Studies Vedic Studies Buddhist Studies Electronics

**Note:** A student shall have to opt any two subjects from IV to VII group, but not more than one from each group.

#### FACULTY OF HOME SCIENCE

Group I	Group II	Group III	Group IV	Group V
General-English (Compulsory)	Human Development (Compulsory)	Clothing for the Family (Compulsory)	Extension-Education (Compulsory)	Computer Science Informatics Practices Environmental Science Functional English Islamic Studies Vedic Studies Buddhist Studies Physical Education Travel, Tourism and Hotel Management

**Note :** A student shall have to opt any one subject form group V.

## FACULTY OF COMMERCE

Group I	Group II	Group III	Group IV	Group V	Group VI
General-English (Compulsory)	Business-Studies (Compulsory)	Accountancy (Compulsory)	Entrepreneurship or Economics	i. Business-Mathematics ii. TypeWriting & Shorthand iii. Public Administration	Computer Science Informatics Practices Env. Science Functional English Islamic Studies Vedic Studies Buddhist studies Physical Education Travel, Tourism & Hotel Management

**Note :-** A student shall have to opt any two subject from IV – VI groups, but not more than one from each group.

## FACULTY OF HUMANITIES

Group I	Group II	Group III	Group IV	Group V	Group VI	Group VII	Group VIII
General-English (Compulsory)	Urdu Hindi Kashmiri Dogri Punjabi Bhoti	Arabic Sanskrit Persian Economics	Mathematics Applied – Mathematics Sociology	Psychology Music Geography Philosophy Education	1. Home Science (Elective) 2. History 3. Public Administration	Statistics Political- Science	Computer Science Informatics Practices Environmental – Science Functional English Islamic Studies Vedic Studies Buddhist Studies Physical Education Travel, Tourism & Hotel Management English Literature

**Note :** I. A student shall have to opt any four subjects from group II to Group VIII, but not more than one from each group.

II. No repetition/similarity of incomplete combination of subjects is allowed.

III. While choosing subjects students are advised to opt for such subjects or combination of subjects, which are available and taught in the institution as per the above mentioned combination.

## SCHEME OF ASSESSMENT/EXAMINATION

The Higher Secondary Examination Part – II (12<sup>th</sup>) conducted by the Board at the end of academic session on the basis of syllabi prescribed for Class 12<sup>th</sup> is open to eligible candidates and shall be conducted according to the following scheme of examination.

'General English': The performance of students in General English in examination shall be assessed on the basis of single paper of 100 marks and 3 hours duration.

### GROUP – I : SCIENCE STREAM

Note : (i) Performance in each subject shall be assessed through single paper of 70 marks for Science subjects and 100 marks for Mathematics of 3 hours duration.

- a) In case of a subject involving practical there shall be an external practical examination of 20 marks of three hours duration.
- b) Marks reserved for internal assessment (which is 10 in case of each subject) shall be awarded by the schools themselves, as part of internal assessment, on the basis of performance of students in two tests (each test of 04 marks) and quality of reportage, i.e., practical notebook (carrying 02 marks) maintained by student.

Subject	MARKS			Total
	Theory	Practical		
		Internal Assessment	External Examination	
Physics	70	10	20	100
Chemistry	70	10	20	100
Biology	70	10	20	100
Biotechnology	70	10	20	100
Microbiology	70	10	20	100
Biochemistry	70	10	20	100
Geography	70	10	20	100
Geology	70	10	20	100
Mathematics	100	x	x	100
Statistics	70	10	20	100
Environmental Science	70	10	20	100
Informatics Practices	70	10	20	100
Computer Science	70	10	20	100

**Note** – In case of Biology, 10 marks are reserved for internal assessment, 05 marks are for Botany and 05 for Zoology. External practical examination of Botany practicals shall be of 10 marks and two hours duration. External practiced examination in case of Zoology shall be of 10 marks and two hours duration.

## GROUP - II : HOME SCIENCE STREAM

### Note :-

- 1) Performance in each subject shall be assessed through one single paper (theory paper of 70 marks) and of 3 hours duration.
- 2) External practical examination in each subject shall be of 20 marks and 3 hours duration.
- 3) Marks reserved for internal assessment in practical (in case of each subject) shall be awarded on the basis of performance of students in two tests (each test of 04 marks) and quality of reportage, (maintenance of practical notebook) carrying 02 marks.

Subject	MARKS			
	Theory	Practical		Total
		Internal Assessment	External Examination	
Human Development	70	10	20	100
Clothing for the Family	70	10	20	100
Extension Education	70	10	20	100

## GROUP - III . COMMERCE STREAM

Subject	MARKS			
	Theory	Practical		Total
		Internal Assessment	External Examination	
Business Studies	100	-	-	100
Accountancy	80	05	15	100
Entrepreneurship	80	05	15	100
Business Mathematics	100	x	-	100
Short hand and Type writing	-	40	60	100
Public Administration	100	x	x	100

## GROUP – IV : HUMANITIES STREAM

**Languages:** - The performance of students in the exam in case of each language shall be assessed on the basis of single paper. Each paper shall be of 100 marks and 3 hours duration.

### Other Subjects:

Subject	Theory	MARKS		
		Practical		Total
		Internal Assessment	External Examination	
Philosophy	100	x	x	100
History	80	20 (Project Work)	x	100
Economics	100	x	x	100
Geography	70	10	20	100
Political Science	100	x	x	100
Education	100	x	x	100
Psychology	70	10	20	100
Sociology	80	05	15	100
Home Science (Elec.)	70	10	20	100
Music	50	25	25	100
Statistics	70	10	20	100
Mathematics	100	x	x	100
Islamic Studies	100	x	x	100
Physical Education	60	15	25	100
Public Administration	100	x	x	100

**Note :**(i) In case of Geography and Home Science (Elective) marks reserved for internal assessment for practical work shall be awarded on the basis of performance in two test of 04 marks each and quality of reportage (note book) carrying 02 Marks.

(ii) In case of Music marks reserved for internal assessment in practical work shall be awarded on the basis of performance in two tests of 20 marks each and quality of reportage carrying 10 marks.



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# GENERAL ENGLISH

Maximum Marks: 100

Time: - 3 Hours

The Paper shall be divided into Four (04) Section covering prose and poetry from *Chinar-ii* apart from writing skills and grammar.

## (SECTION A)

Literature ----- 40 Marks

- A. One Long answer type question (100-150 words) from prose based on character study/description of scene/title/theme/style to be attempted out of two.  
(1 × 7 = 7 marks)
- B. Three short answer type questions (60-80 words) from prose based on theme/interpretation to be attempted out of six.  
(3 × 4 = 12 marks)
- C. One long answer type question (80-100 words) from poetry based on theme/style/critical appreciation/sum and substance to be attempted out of two.  
(1 × 5 = 5 marks)
- D. Three short answer type questions from poetry based on theme/interpretation/poetic device (metaphor, simile, hyperbole, personification, imagery, irony, paradox) to be attempted out of five.  
(2 × 3 = 6 marks)
- E. One reference to context type question based on a prose passage to be attempted out of two passages.  
(1 × 5 = 5 marks)
- F. One reference to context type question based on poems to be attempted out of two.  
(1 × 5 = 5 marks)

**(SECTION B)**

**Reading Comprehension ----- 15 Marks**

- A. One out of two poetic passages from the textbook followed by five comprehension questions with at least one MCQ, one vocabulary based question.

**(1 × 5 = 5 marks)**

- B. One out of two unseen prose passages (300-350 words each) followed by comprehension questions with at least one MCQ, one vocabulary based question.

**(2 × 5 = 10 marks)**

**(SECTION C)**

**Writing Skills ----- 15 Marks**

To test the writing skills, four tasks (80-100 words) out of the six chosen from the following topics to be attempted.

1. Paragraph writing (narrative/descriptive)
2. Report/article writing
3. Letter writing (official/business/personal)
4. Formal/official e-mail
5. Diary entry
6. Dialogue writing
7. Designing a poster
8. Writing a resume/CV

**(4 × 5 = 20 marks)**

**(SECTION D)**

**Grammar ----- 25 Marks**

- |   |   |
|---|---|
| A. Model (to be tested in a contextualized passage)                                       | <b>02 Marks</b>                           |
| B. Tenses (to be tested in contextualized passage)  | <b>04 Marks</b>                           |
| C. Articles, prepositions, conjunctions (to be tested in one contextualized passage) with | <b>03, 02 and 02 marks, respectively.</b> |
| D. Relative clauses   | <b>02 Marks</b>                           |
| E. Conditional clauses  | <b>02 Marks</b>                           |
| F. Simple, Compound and Complex Sentences   | <b>03 Marks</b>                           |
| G. Voice  | <b>02 Marks</b>                           |
| H. Narration  | <b>03 Marks</b>                           |

## HOME SCIENCE (ELECTIVE)

**Maximum Marks: 100**

**Theory: 70 marks**

**Time: 3 Hours**

**Practicals: 30 Marks**

**(External : 20; Internal:10)**

### **UNIT I : UNDERSTANDING EARLY CHILDHOOD ( 0-3 YRS)**

- ❖ Some specific characteristics: physical and motor – height, weight and body proportions, motor development during (0-3 months), (6-9 months), (9-12 months) and (1-3 yrs) milestones only.
  - Social and emotional developments : recognition of people around ,socialization, expression of emotions;
  - Cognitive development ; Learning through concrete operations and
  - Language development – stages of language development.
- ❖ Protection from preventable diseases : Immunization : definition and concept, immunity – concept and types ( natural and acquired)
- ❖ Breast feeding — advantages, immunization charts; symptoms, prevention after care and incubation period of childhood diseases – tuberculosis, Diphtheria, pertussis, Tetanus, polio, measles, cholera, diarrhoea, Chicken pox.
- ❖ Special needs of disadvantaged and disabled children: Socially disadvantaged physically challenged (blind, partially blind & deaf, affected / missing limb): Characteristics and needs.
- ❖ Substitute care at home and outside: Siblings, grandparents, neighbor, crèche, day care centres etc: integrated child development scheme (ICDS) – objectives and functions.

**Marks: 18**

**Periods: 34**

### **UNIT II- II NUTRITION FOR SELF, FAMILY AND COMMUNITY**

- ❖ Planning meals for the family : Meaning and importance of meal planning, principles and factors affecting meal planning , meal planning for the family including children, pregnant women, lactating mother, members suffering from fever and diarrhoea; role and preparation of (ORS). (Food group planning only)

**Marks: 09**

**Periods: 18**

### **UNIT III : WAYS TO ENSURE GOOD HEALTH FOR THE FAMILY**

- ❖ Using safe drinking water, importance of potable water for good health, qualities of safe drinking water; household method of making water safe for drinking: boiling, filtering and use of chemicals, role of hygiene for food handlers at home level. Safety against food adulteration, definition and meaning of food adulteration as given by FSSAI (Food safety and Standard Authority of India) , PFA : Common adulterants present in cereals, pulses , milk & milk products, fats and oils, sugar, jaggery, honey, spices and condiments. All effects of some of the adulterants present in the foods: Kesari dal, metanil yellow, argemone seeds.

**Marks-09**

**Period-18**

### **UNIT IV : MONEY MANAGEMENT AND CONSUMER EDUCATION**

- ❖ Family Income: Various sources of family income – money income, real income (direct and indirect) and psychic income, supplementing family income– need & ways, need and procedure for keeping household accounts. - Savings and investment : Meaning and importance of savings : ways / methods of investment bank (Saving, fixed, recurring ) ; Post office ( Savings, recurring

deposit, monthly income scheme), National savings certificate, Kissan Vikas Patra, Senior citizen scheme); LIC ( Whole life, mediclaim, money back ); Bonds, Units(ULIP), shares and chit funds ; Public provident Fund(PPF), Provident fund (PF), basis for selection of method of investment risk, security, profit, tax savings.

**Marks-11**

**Period-26**

#### **UNIT V: CONSUMER PROTECTION AND EDUCATION**

- ❖ Meaning, problems faced by consumer, Consumer protection Act (1986) and services; Consumer aids: levels, standardization marks, advertising, leaflets/guidebooks, Consumer redressal forum.

**Marks - 06**

**Period -10**

#### **UNIT VI: CLOTHING, SELECTION AND CARE**

- ❖ Clothing and its relation to personality : Elements of line, Color , texture : elements of design balance, rhythm, proportion, harmony, emphasis : factors that influence the selection of clothes : personality, age, climate, figure, occasion, fashion ; selection and purchase of fabrics, purpose, quality. Cost, season, reliable shop.
- ❖ Checking size and quality in readymade garments (need & criteria: seams, plackets, fasteners, workmanship, design, drafts).
- ❖ Care of clothes: General principles & precautions to be followed while removing stains and washing - blueing, stiffening and bleaching. - Cleansing agents : soaps and detergents (basic differences) - Storage of clothes.

**Marks -11**

**Period - 36**

#### **UNIT VII: APPLICATIONS OF HOME SCIENCE EDUCATION**

- Application of knowledge of Home science in everyday life. - Usefulness of some of the skills learnt here for supplementing family income. - Skills learnt here can be gainfully used for employment ( self employment, wage employment ) - Further training required to make this field a career: various sources & facilities available for training.

**Marks - 06**

**Period-03**

#### **PRACTICALS:**

**Time : 3 hours**

**Marks: 30**

**Internal: 10**

**External: 20**

- |  |          |
|--|----------|
| 1) Understanding early childhood         | 03 marks |
| 2) Nutrition for self & family           | 11 marks |
| 3) Money management & Consumer Education | 03 marks |
| 4) Clothing, Selection and Care          | 06 marks |
| 5) Application of Home Science Education | - marks  |
| 6) Viva—Voice                            | 02 marks |
| 7) Record                                | 05 marks |

#### **UNIT I UNDERSTANDING EARLY CHILDHOOD (0-3 YRS)**

Make an interview schedule for working mother

- 1) Interview a working mother to find out her arrangement of substitute care for her child (0 - 3 yrs) in her absence.
- 2) Evaluate a crèche for its facilities and give suggestions for improvement.
- 3) Prepare a chart for immunization of a child.
- 4) Prepare a chart of various milestones of physical and mental developments.

**Period- 02**

## **UNIT II NUTRITION FOR SELF AND FAMILY**

- 1) Plan meals for the family and carryout modifications for pregnant and lactating mother, including persons suffering from fever and diarrhoea. Prepare and serve one dish.
- 2) Preparation of oral rehydration solution.
- 3) Simple tests for checking adulteration in
  - i) Cereals (Rice, suji)
  - ii) Pulses (Chana dal)
  - iii) Milk
  - iv) Tea leaves
  - v) Dhania powder
  - vi) Haldi powder
  - vii) Gur
  - viii) Black pepper (whole)

**Periods – 22**

## **UNIT III: MONEY MANAGEMENT AND CONSUMER EDUCATION**

- 1) Open an account. Report on opening of an account in a bank and post office.
- 2) Filling bank and post office forms.
- 3) Read and evaluate labels of any four household items bearing different standardization marks.
- 4) Prepare one label each for four household items/products bearing different standardization marks.

**Period –8**

## **UNIT IV: CLOTHING, SELECTION AND CARE.**

Make samples of

- a) Basic stitches and seams
  - Flat, run & fell, French, Counter seam
  - Running stitches - Hemming
  - Back stitches
  - Inter locking
- b) Fasteners
  - Press button, hook & eye, pearl & button.
  - c) Patch work plain and printed.
  - d) Examine quality in readymade garments workmanship & labels.
  - e) Removal of stains of
    - Tea
    - Curry
    - Ball point ink
    - Blood
    - Coffee
    - Grease
    - Lipstick
- f) Washing and furnishing of different fabrics. ( cotton, silk & wool)
- g) Relative effect of temperature of water on the clothes during the process of washing clothes (cold, lukewarm, hot). Draw conclusions and how this knowledge is helpful.

**Period –42**

# HISTORY

Time: 3 hrs.

**Theory: 80 Marks**

**Project Work: 20 Marks**

## **Themes in Indian History (Part - I)**

1. **The Story of the First Cities: Harappan Archaeology**  
Broad overview: Early urban centres.  
Story of discovery: Harappan civilization  
Excerpt: Archaeological report on a major site  
Discussion: How it has been utilized by archaeologists/ historians.
2. **Political and Economic History: How inscriptions tell a story**  
Broad overview: Political and economic history from the Mauryan to the Gupta period.  
Story of discovery: Inscriptions and the decipherment of the script. Shifts in the understanding of political and economic history.  
Excerpt: Asokan inscription and Gupta period land grant.  
Discussion: Interpretation of inscription by historians.
3. **Social Histories: Using the Mahabharata**  
Broad overview: Issues in social history, including caste, class, kinship and gender.  
Story of discovery: Transmission and publications of the Mahabharata.  
Excerpt: From the Mahabharata, illustrating how it has been used by historians.  
Discussion: Other sources for reconstructing social history.
4. **A History of Buddhism: Sanchi Stupa**  
Broad overview:  
(a) A brief review of religious histories of Vedic religion, Jainism, Vaisnavism, Saivism.  
(b) Focus on Buddhism.  
Story of discovery: Sanchi stupa  
Excerpt: Reproduction of sculptures from Sanchi  
Discussion: Ways in which sculpture has been interpreted by historians, other sources for reconstructing the history of Buddhism.

## **Themes in Indian History (Part - II)**

**25 Marks**

5. **Agrarian Relations: The Ain-i-Akbari**  
Broad overview:  
(a) Structure of agrarian in the 16th and 17th centuries.  
(b) Patterns of change over the period.  
Story of Discovery: Account of the compilation and translation of Ain-i-Akbari  
Excerpt: From the Ain-i-Akbari  
Discussion: Ways in which historians have used the text to reconstruct history.

6. **The Mughal Court: Reconstructing Histories through Chronicles**  
Broad overview:  
(a) Outline of political history c. 15th -17th centuries.  
(b) Discussion of the Mughal court and politics.  
Story of Discovery: Account of the production of court chronicles, and their subsequent translation and transmission.  
Excerpts: From the Akbarnama and Padshahnama.  
Discussion: Ways in which historians have used the texts to reconstruct political histories.
7. **New Architecture: Hampi**  
Broad overview:  
(a) Outline of new buildings during Vijaynagar period-temples, forts, irrigation facilities.  
(b) Relationship between architecture and the political system.  
Story of Discovery: Account of how Hampi was found.  
Excerpt: Visuals of buildings at Hampi.  
Discussion: Ways in which historians have analysed and interpreted these structures.
8. **Religious Histories: The Bhakti-Sufi Tradition**  
Broad overview:  
(a) Outline of religious developments during this period.  
(b) Ideas and practices of the Bhakti-Sufi saints.  
Story of Transmission: How Bhakti-Sufi compositions have been preserved.  
Excerpt: Extracts from selected Bhakti Sufi works.  
Discussions: Ways in which these have been interpreted by historians.
9. **Medieval Society through Travellers Account**  
Broad overview: Outline of social and cultural life as they appear in travellers accounts.  
Story of their writings: A discussion of where they travelled, why they travelled, what they wrote, and for whom they wrote.  
Excerpts: From Alberuni, Ibn Batuta, Bernier.  
Discussion: What these travel accounts can tell us and how they have been interpreted by historians.

**25 Marks**

### **Themes in Indian History (Part - III)**

10. **Colonialism and Rural Society: Evidence from Official Reports**  
Broad overview:  
(a) Life of zamindars, peasants and artisans in the late 18th century.  
(b) East India Company, revenue settlements and surveys.  
(c) Change over the nineteenth century.  
Story of official records: An account of why official investigations into rural societies were undertaken and the types of records and reports produced.

Excerpts: From Firminger's Fifth Report, Accounts of Francis Buchanan-Hamilton, and Deccan Riots Report.

Discussion: What the official records tell and do not tell, and how they have been used by historians.

11. Representations of 1857

Broad overview:

- (a) The events of 1857-58
- (b) How these events were recorded and narrated.

Focus: Lucknow

Excerpts: Pictures of 1857. Extracts from contemporary accounts.

Discussion: How the pictures of 1857 shaped British opinion of what had happened.

12. Colonialism and Indian Towns: Town Plans and Municipal Reports

Broad overview: The growth of Mumbai, Chennai, hill stations and cantonments in the 18th and 19th century.

Excerpts: Photographs and paintings. Plans of cities.

Extract form town plan reports. Focus on Kolkata town planning.

Discussion: How the above sources can be used to reconstruct the history of towns. What these sources do not reveal.

13. Mahatma Gandhi through Contemporary Eyes.

Broad overview:

- (a) The nationalist movement 1918-48.
- (b) The nature of Gandhian politics and leadership.

Focus: Mahatma Gandhi in 1931

Excerpts: Report from English and Indian language newspapers and other contemporary writings.

Discussion: How newspapers can be source of history.

14. Understanding the Partition.

- (a) Resolution of Pakistan
- (b) Cabinet Mission plan
- (c) Mountbatten Plan
- (d) Act of Indian Independence 1947

15. The Making of the Constitution

Broad overview:

- (a) Independence and the new nation state.
- (b) The making of the Constitution

Focus: The Constitutional Assembly debates

Excerpts: From the debates

Discussion: What such debates reveal and how they can be analyzed.

25 Marks

## Weightage to content

Themes in Indian History (Part-I)	25 Marks
Themes in Indian History (Part-II)	25 Marks
Themes in Indian History (Part-III)	25 Marks
Map work	5 Marks
Project Work	20 Marks
<b>Total</b>	<b>100 Marks</b>

### Map work on Unit 1-15:

**5 Marks**

5 marks have been allotted for Map work for which questions would be asked from chapter 1 to 15 of three books namely ( Part I, Part II and Part III)

### Project Work:

**20 Marks**

For the purpose of project work, the following topics are suggested:

- (i) Sources of History of J&K State.
- (ii) Food and clothing in J&K State.
- (iii) Foundation of modern J&K State with special reference to the Treaties of Lahore and Amritsar (1846)
- (iv) The Cultural development in J&K State under Maharaja Ranbir Singh with special reference to Development of Education and Literature.
- (v) Development of means of Communications in J&K State.

### Details of Project work of History for class 12th

The marks will be allocated under the following heads:

- |  |          |
|--|----------|
| 1. Project synopsis                        | 02 Marks |
| 2. Data/Statistical Analysis/Map Work      | 03 Marks |
| 3. Visual/ Overall presentation            | 05 Marks |
| 4. Analysis/Explanation and Interpretation | 05 Marks |
| 5. Bibliography                            | 01 Marks |
| 6. Viva Voice                              | 04 Marks |

### Reference:

1. Themes in Indian History, Part-I, Class XII, Published by NCERT
2. Themes in Indian History, Part-II, Class XII, Published by NCERT
3. Themes in Indian History, Part-III, Class XII, Published by NCERT

# ECONOMICS

Theory: 100 Marks

Time: 3 Hours

## Unit I: Introduction

Marks 04

- What is microeconomics?
- Central problems of an economy, production possibility curve and opportunity cost.

## Unit II: Consumer Equilibrium and Demand

Marks 18

- Consumer's Equilibrium: meaning and attainment of equilibrium through Utility Approach: One and two commodity cases.
- Demand: market demand, determinants of demand, demand schedule, demand curve, movement along and shifts in demand curve, price elasticity of demand, measurement of price elasticity of demand – percentage, total expenditure and geometric methods.

## Unit III: Producer Behaviour and Supply

Marks 18

- Production function: returns to factor and returns to scale
- Supply: market supply, determinants of supply, supply schedule, supply curve movement along and shifts in supply curve, price elasticity of supply, measurement of price elasticity of supply – percentage and geometric methods
- Cost and Revenue: Concepts of Costs; short-run cost curves (fixed and variable costs; total, average and marginal costs); concepts of Revenue – total, average and marginal revenue and their relationship. Producer's equilibrium – with the help of MC and MR.

## Unit IV: Forms of Market and Price Determination

Marks 10

- Forms of market – perfect competition, monopoly, monopolistic competition – their meaning and features, oligopoly, meaning, features
- Price determination under perfect competition – equilibrium price, effects of shifts in demand and supply.

## Unit V: Simple Applications of Tools of Demand and Supply Curves (Non-Evaluative)

The teachers can be given the flexibility to choose the issues: rationing, floors and ceilings and Food Availability Decline (FAD) Theory (the teachers may also choose alternative examples that are simple and easy to understand)

## Unit VI: National Income and Related Aggregates — Basic Concepts and Measurement

Marks 15

- Macroeconomics: meaning.
- Circular flow of income, concepts of GDP, GNP, NDP, NNP (at market price and factor cost), National Disposable Income (gross and net); Private Income, Personal Income and

### Personal Disposable Income

- Measurement of National Income –Value Added method; Income method and Expenditure method

### Unit VII: Determination of Income and Employment

Marks 12

- Aggregate demand, aggregate supply and their components
- Propensity to consume and propensity to save (average and marginal)
- Meaning of involuntary unemployment and full employment
- Determination of income and employment: two sector model
- Concept of investment multiplier and its working
- Problems of excess and deficient demand
- Measures to correct excess and deficient demand – availability of credit, change in government spending

### Unit VIII: Money and Banking

Marks 08

- Supply of Money-currently held by public and commercial banks
- Money: meaning, evolution and functions
- Central bank: meaning and functions

### Unit IX: Government Budget and the Economy

Marks 08

- Government budget - meaning, objectives and components.
- Classification of receipts - revenue receipt and capital receipt; classification of expenditure – revenue expenditure and capital expenditure, plan & non-plan, development & non-developmental.
- Balanced budget, surplus budget & deficit budget: meaning & implications.
- Various measures of government deficit - revenue deficit, fiscal deficit, and primary deficit: their meaning and implications.
- Downsizing the role of government: meaning and implications.

### Unit X: Balance of Payments

Marks 07

- Balance of payments account - meaning and components;
- Foreign exchange rate – meaning of fixed and flexible rates, merits and demerits; determination through demand and supply.
- A brief analysis about recent exchange rate issues

# GEOGRAPHY

Maximum Marks : 100

Theory: 70 marks

Time: 3 Hours

Practicals: 30 Marks

## A. Fundamentals of Human Geography

Marks 35

### Unit I: Human Geography: Nature and Scope

Marks 03

#### Unit II: People

Marks 05

- Population of the world – distribution, density and growth;
- Population change-spatial patterns and structure; determinants of population change;
- Age-sex ratio; rural-urban composition;
- Human development – concept; selected indicators, international comparisons.

#### Unit III: Human Activities

Marks 10

- Primary activities – concept and changing trends; gathering, pastoral, mining, subsistence agriculture, modern agriculture; people engaged in agriculture and allied activities – some examples from selected countries;
- Secondary activities – concept; manufacturing: agro-processing, household, small scale, large scale; people engaged in secondary activities – some examples from selected countries;
- Tertiary activities – concept; trade, transport and communication; services; people engaged in tertiary activities – some examples from selected countries;
- Quaternary activities – concept; knowledge based industries; people engaged in quaternary activities – some examples from selected countries.

#### Unit IV: Transport, Communication and Trade

Marks 10

- Land transport – roads, railways – rail network; trans-continental railways;
- Water transport – inland waterways; major ocean routes;
- Air transport – Intercontinental air routes;
- Oil and gas pipelines;
- Satellite communication and cyber space;
- International trade – Basis and changing patterns; ports as gateways of international trade, role of WTO in International trade.

#### Unit V: Human Settlements

Marks 05

- Settlement types – rural and urban; morphology of cities (case study); distribution of mega cities; problems of human settlements in developing countries.

**Unit VI: Map work on identification of features based on above units on the outline Political map of world.** **Marks 02**

**B. India: People and Economy** **Marks 35**

**Unit VII: People** **Marks 05**

- Population – distribution, density and growth; composition of population: linguistic, sex and religious; rural-urban population change through time – regional variations; occupations.
- Migration: international, national – causes and consequences;
- Human development – selected indicators and regional patterns;
- Population, environment and development.

**Unit VIII: Human Settlements** **Marks 04**

- Rural settlements – types and distribution;
- Urban settlements – types, distribution and functional classification.

**Unit IX: Resources and Development** **Marks 12**

- Land resources – general land use; agricultural land use – major crops; agricultural development and problems, common property resources;
- Water resources – availability and utilization – irrigation, domestic, industrial and other uses; scarcity of water and conservation methods – rain water harvesting and watershed management (one case study related with participatory watershed management to be introduced);
- Mineral and energy resources – metallic and non-metallic minerals and their distribution; conventional and non-conventional energy sources;
- Industries – types and distribution; industrial location and clustering; changing pattern of selected industries – iron and steel, cotton textiles, sugar, petrochemicals, and knowledge based industries; impact of liberalization, privatization and globalization on industrial location;
- Planning in India – target area planning (case study); idea of sustainable development (case study).

**Unit X: Transport, Communication and International Trade** **Marks 07**

- Transport and communication — roads, railways, waterways and airways; oil and gas pipelines; national electric grids; communication networkings – radio, television, satellite and internet;
- International trade — changing pattern of India's foreign trade; seaports and their hinterland and airports.

**Unit XI: Geographical Perspective on Selected Issues and Problems** **Marks 04**  
**(One case study to be introduced for each topic)**

- Environmental pollution; urban-waste disposal;

- Urbanization-rural-urban migration; problem of slums;
- Land Degradation.

**Unit XII: Map work on locating and labeling of features based on above units on the outline Political map of world. Marks 03**

**C. Practical Work Marks 30**

**Internal assessment: 10 marks**

**External assessment:20 marks**

**Unit I: Processing of Data and Thematic Mapping Marks 10**

- Sources of data;
- Tabulating and processing of data; calculation of averages, measures of central tendency, deviation and rank correlation;
- Representation of data – construction of diagrams: bars, circles and flowchart; thematic maps; construction of dot; choropleth and isopleth maps.
- Use of computers in data processing and mapping.

**Unit II: Field Study Marks 07**

Field visit and study: map orientation, observation and preparation of sketch; survey on any one of the local concerns; pollution, ground water changes, land use and land- use changes, poverty, energy issues, soil degradation, impact of floods and drought, catchment area of school, Market survey and Household survey (any one topic of local concern may be taken up for the study; observation and questionnaire survey may be adopted for the data collection; collected data may be tabulated and analysed with diagrams and maps.

**Unit II: Practical Record Book and Viva-voce. Marks 03**

# POLITICAL SCIENCE

Theory: 100 Marks

Time: 3 Hours

## Part A: Contemporary World Politics

### 1. Cold War Era in World Politics

Marks 07

Emergence of two power blocs after the second world war. Arenas of the cold war. Challenges to Bipolarity: Non Aligned Movement, quest for new international economic order. India and the cold war.

### 2. Disintegration of the 'Second World' and the Collapse of Bipolarity.

Marks 07

New entities in world politics: Russia, Balkan states and Central Asian states, Introduction of democratic politics and capitalism in post-communist regimes. India's relations with Russia and other post-communist countries.

### 3. US Dominance in World Politics:

Marks 06

Growth of unilateralism: Afghanistan, first Gulf War, response to 9/11 and attack on Iraq. Dominance and challenge to the US in economy and ideology. India's renegotiation of its relationship with the USA.

### 4. Alternative Centres of Economic and Political Power:

Marks 04

Rise of China as an economic power in post-Mao era, creation and expansion of European Union, ASEAN. India's changing relations with China.

### 5. South Asia in the Post-Cold War Era:

Marks 06

Democratisation and its reversals in Pakistan and Nepal. Ethnic conflict in Sri Lanka, Impact of economic globalization on the region. Conflicts and efforts for peace in South Asia. India's relations with its neighbours.

### 6. International Organizations in a unipolar World:

Marks 05

Restructuring and the future of the UN. India's position in the restructured UN. Rise of new international actors: new international economic organisations, NGOs. How democratic and accountable are the new institutions of global governance?

### 7. Security in Contemporary World:

Marks 05

Traditional concerns of security and politics of disarmament. Non-traditional or human security: global poverty, health and education. Issues of human rights and migration.

### 8. Globalisation and Its Critics.

Marks 05

Economic, cultural and political manifestations. Debates on the nature of consequences of globalisation. Anti-globalisation movements. India as an arena of globalization and struggle against it.

**9. Environment and Natural Resources in Global Politics: Marks 05**

Environment movement and evolution of global environmental norms. Conflicts over traditional and common property resources. Rights of indigenous people. India's stand in global environmental debates.

**Part B: Politics in India since Independence**

**10. Nation-Building and Its Problems Marks 05**

Nehru's approach to nation-building: Legacy of partition: challenge of 'refugee' resettlement, the Kashmir problem. Organisation and reorganization of states; Political conflicts over language.

**11. Era of One-Party Dominance Marks 06**

First three general elections, nature of Congress dominance at the national level, uneven dominance at the state level, coalitional nature of Congress. Major opposition parties.

**12. Politics of Planned Development Marks 05**

Five year plans, expansion of state sector and the rise of new economic interests. Famine and suspension of five year plans. Green revolution and its political fallout.

**13. India's External Relations Marks 06**

Nehru's foreign policy. Sino-Indian war of 1962, Indo-Pak war of 1965 and 1971. India's nuclear programme and shifting alliances in world politics.

**14. Challenge to and Restoration of Congress System: Marks 05**

Political succession after Nehru. Non-Congressism and electoral upset of 1967, Congress split and reconstitution, Congress' victory in 1971 elections, politics of 'garibi hatao'

**15. Crisis of the Constitutional Order: Marks 07**

Search for 'committed' bureaucracy and judiciary. Navnirman movement in Gujarat and the Bihar movement. Emergency: context, constitutional and extra-constitutional dimensions, resistance to emergency. 1977 elections and the formation of Janata Party. Rise of civil liberties organisations.

**16. Regional Aspirations and Conflicts Marks 05**

Rise of regional parties. Punjab crisis. The Kashmir situation. Challenges and responses in the North East.

**17. Rise of New Social Movements: Marks 05**

Farmers' movements, Women's movement, Environment and Development-affected people's movements. Implementation of Mandal Commission report and its aftermath.

**18. Recent Developments in Indian politics: Marks 06**

Participatory upsurge in 1990s. Rise of the JD and the BJP. Increasing role of regional parties and coalition politics. UF and NDA governments. Elections 2004 and UPA government.

**Book Suggested:**

Major concepts of Political Science published by NCERT, New Delhi

# PHILOSOPHY

Max. Marks:100

Time: 3hrs

## A. INDIAN PHILOSOPHY

1. Nature and Schools of Indian Philosophy **Marks 10**
2. Philosophy of the Bhagvat Gita **Marks 10**
3. Buddhism, Nyana, Yoga, Jainism **Marks 10**

## B. MUSLIM PHILOSOPHY

4. Introduction to Muslim Philosophy **Marks 10**
5. Principles Schools of Muslims Philosophical thought **Marks 10**
6. Muslim Philosophers and their contribution **Marks 10**

## C. WESTERN PHILOSOPHY

7. The Causal Principles **Marks 10**
8. Nature of Reality **Marks 10**
9. Mind-Body Problem **Marks 10**

## D. APPLIED PHILOSOPHY

10. Environmental Ethics, Bio Ethics, Business Ethics **Marks 10**

## A. INDIAN PHILOSOPHY

### Unit I : Nature and Schools of Indian Philosophy :

1. Nature and Schools of Indian Philosophy
2. Characterises of Indian Philosophy
3. Theory of Purusarthas (Dharma, Artha, Kama and Moksa)

### Unit II : Philosophy of the Bhagvad Gita

1. Nishkama-Karma
2. Avadharna
3. Lokasmgraha

### Unit III : Budddhism, Nyaya, Yoga, Jainism

1. Budhism-(Eight-Fold Path)
2. Nayaya (Theory of Pramanas)
3. Yoga-Eight=fold practice
4. Jainism - [Panshilla : Ahimsa, Satya, Asteya, Brahmacharya, Aprigraha]

## B. MUSLIM PHILOSOPHY

### Unit IV : Introduction to Muslim Philosophy

1. Meaning and Emergence of Muslim Philosophy
2. Sources of Muslims philosophy (primary and secondary sources)
3. Main Philosophical Teachings of Holy Quran

#### **Unit V : Principles Schools of Muslims Philosophical though**

1. Mutazilism : Principles of Mutazilism
2. Asharism : Main Doctrines of Asharism

#### **Unit VI : Muslims Philosophers and their contribution:**

1. Alama Iqbal-Intellect and Intuition
2. Jamalal Din Afghani-Spirituality, Morality, Rationality and Muslim Unity
3. Al - Kindi - God, Soul, Intellect

#### **C: WESTREN PHILOSOPHY**

##### **Unit VII: The Causal Principles**

1. Aristotle's Theory of Four Fold Causation
2. Hume's Theory of Causation

##### **Unit VIII: Nature of Reality**

1. Proof for the existence of God
2. Ontological Arguments
3. Cosmological Arguments
4. Teleological Arguments

##### **Unit IX: Mind-Body Problem**

1. Interactionism-Descartes
2. Parallelism-Spinoza
3. Pre-Established Harmony (Leibnitz)

#### **PART D: APPLIED PHILOSOPHY**

##### **Unit X : Environment Ethics, Bio Ethics, Business Ethics**

1. Environment Ethics
2. Bio Ethics
3. Business Ethics
4. Philosophy of Education

##### **Suggested Reading :**

1. Introduction to Indian Philosophy by Data and Chatterji
2. Critical Survey of Indian Philosophy by C.D. Sharma
3. History of Indian Philosophy by R.N. Sharma
4. History of Muslims Philosophy by M.M. Sharief
5. Muslims Philosophy and Philosophers by Saleem Khan and Anwar Khan
6. History of Western Philosophy by Y. Masiah
7. Introduction to Philosophy by Jhon Patrick
8. Living Issue in Philosophy by H. Titus
9. Companion to Ethics by R.G. Frey
10. Applied Ethics by PETE Singer

# EDUCATION

Max. Marks: 100

Time: 3 Hrs.

## UNIT 1: CURRICULUM

- 1.1 Meaning and Importance of Curriculum.
- 1.2 Definitions — Ross, Cunningham, Tagore, Zakir Husain  
Secondary Education Commission (1952-53)
- 1.3 Types of Curriculum( Merits and limitations)
  - \*\* Subject-Centered Curriculum.
  - \*\* Activity-Centered Curriculum.
  - \*\* Child-Centered Curriculum.
- 1.4 Defects of existing Curriculum and its reformative measures. **10 marks**

## UNIT-2: CO-CURRICULAR ACTIVITIES

- 1.1 Meaning of Co-Curricular Activities.
- 1.2 Types—
  - \*\* Literary— (Debates, School Magazine, Library),
  - \*\* Aesthetic & Cultural— (Drama, Educational Tours, Folk activities)
  - \*\* Social – (Morning Assembly & NSS),
  - \*\* Physical— (Games & Sports, NCC, Scouting)**10 marks**

## UNIT-3: DEVELOPMENT OF EDUCATION IN J&K

- 1.1 Role of Missionary schools with reference to :
  - \*\* Tyndale Biscoe (1881-82)
  - \*\* Anjuman-i Nusratul Islam (1905)
  - \*\* Dogras with special reference to Primary Education.
  - \*\* Sharp Committee (1916)
  - \*\* K.G. Saidain Report (1939)
  - \*\* A Kazimi Report (1950)
  - \*\* Bhagwan Sahay Committee (1972)
- 1.2 Brief history of the following Institutions:
  - \*\* Jammu & Kashmir Board Of School Education.
  - \*\* Directorate of School Education.
  - \*\* University of Kashmir.
  - \*\* University of Jammu.**10 marks**

## UNIT 4: POPULATION EDUCATION

- 1.1 Meaning and Objectives of Population Education
- 1.2 Need and importance of Population Education.
- 1.3 Population Explosion—Meaning, Causes, Consequences and control
- 1.4 Role of Media (Print and Electronic) for Population Awareness. **10 Marks**

## UNIT 5: EDUCATIONAL THINKERS

- 1.1 M. K. Gandhi
- 1.2 Dr. Zakir Hussain
- 1.3 John Dewey  
With special reference to :
  - \*\* Life Sketch
  - \*\* Concept of Education

- \*\* Aims of Education
- \*\* Curriculum

- \*\* Methods of Teaching
- \*\* Role of Teacher

10 marks

#### UNIT 6: STATISTICS IN EDUCATION

##### 1.1 Measures of Variability—

- \*\* Concept of Variability
- \*\* Methods of determining Variability through
  - i) Range
  - ii) M.D (Mean Deviation)
  - iii) Q.D (Quartile Deviation)
  - iv) S.D (Standard Deviation)

##### 1.2 Correlation

- \*\* Concept of Correlation
- \*\* Computation of correlation:
  - \*Rank Method (Spearman)
  - \*Product Movement Method (Pearson)

10 marks

#### UNIT 7: HUMAN GROWTH AND DEVELOPMENT

##### 1.1 Meaning & Principles of Growth and Development.

##### 1.2 Stages of Growth and Development (Physical, Mental and Social) with special reference to: \*\* Infancy                      \*\* Childhood                      \*\* Adolescence

##### 1.3 Needs and Problems of Adolescents with Remedial Measures

10 marks

#### UNIT 8: MENTAL HEALTH AND HYGIENE

##### 1.1 Meaning and Definition of Mental Health and Hygiene

##### 1.2 Purpose of Mental Health and Hygiene

##### 1.3 Characteristics of Mentally Healthy individual

##### 1.4 Need for Mental Health and Hygiene

##### 1.5 Factors determining Mental Health

- \*\* Hereditary
- \*\* Physical
- \*\* Social

##### 1.6 Causes of poor Mental Health

##### 1.7 Achieving Mental Health

10 marks

#### UNIT 9: LEARNING

##### 1.1 Meaning of Learning.

##### 1.2 Definitions – Thorndike, Skinner, Hilgard, Gates, Crow & Crow and Jeff Cobb.

##### 1.3 Characteristics of Learning.

##### 1.4 Types of Learning:-

- \*\* Perceptual
- \*\* Conceptual
- \*\* Motor
- \*\* Verbal
- \*\* Associative

##### 1.5 Laws of Learning (Primary & Secondary) and their educational implications. 10 marks

#### UNIT 10: ADJUSTMENT & MALADJUSTMENT

##### 1.1 Concept of adjustment & maladjustment

##### 1.2 Characteristics of a well adjusted person

##### 1.3 Causes and symptoms of maladjusted person

##### 1.4 Defense Mechanisms:

- \*\* Identification
- \*\* Rationalization
- \*\* Sublimation
- \*\* Compensation
- \*\* Escapism
- \*\* Fantasy

10 marks

# PSYCHOLOGY

Maximum Marks : 100

Theory: 70 marks

Practicals: 30 Marks

Time: 3 Hours

## UNIT I: INTELLIGENCE AND APTITUDE

*The unit aims at studying how people differ with respect to Intelligence and Aptitude.*

- Concept of Intelligence.
- Theories of intelligence: Theory of multiple intelligence, Triarchic theory of intelligence, PASS model of intelligence.
- Culture and intelligence, Tests of intelligence.
- Aptitude: Nature and Types
- Giftedness (nature and identification)
- Individual differences (heredity-environmental interaction). **9 Marks**

## UNIT II: SELF AND PERSONALITY

*The unit focuses on the study of self and personality in the context of different approaches in an effort to appraise the person*

- Concept of self, self efficacy, self regulation & techniques
- Concept of Personality, theories of personality (Trait and types, Psychoanalytic, Humanistic)
- Assessment of personality: *Self report measures, Projective techniques* **9 Marks**

## UNIT III: MEETING LIFE CHALLENGES

*The aim of this unit is to study adjustment, stress and coping strategies. Health and well-being is also discussed*

- Concept of adjustment
- Stress: *Meaning, Sources and types, Coping strategies.*
- Concept of health and well-being **06 Marks**

## UNIT IV: PSYCHOLOGICAL DISORDERS

*The unit discusses the concepts of normality and abnormality and some Psychological disorders.*

- Concept of normality and abnormality, Causal factors associated with psychological disorders
- Classification of Psychological disorders.
- Major psychological disorders: Anxiety, schizophrenia (meaning and symptoms).
- Mood disorders, behavioural, substance related. **09 Marks**

## UNIT V: THERAPEUTIC APPROACHES

*The unit discusses the goals, techniques and effectiveness of different approaches used to treat psychological disorders*

- Goals and objectives of therapeutic processes, stages of therapeutic relationships.
- Types of therapies: *Psychodynamic, Humanistic, Cognitive, Behaviour, Biomedical, Yoga and Meditation.*
- Rehabilitation of mentally ill patients.

08 Marks

## UNIT VI: ATTITUDE AND SOCIAL COGNITION

*The unit focuses on the formation and change of attitudes, cultural influences on attributional tendencies and conditions influencing pro-social behaviour*

- Nature and components of attitude, attitude formation and change.
- Attribution, Social cognition, Schemas and stereotypes.
- Pro-social behaviour and its techniques prejudice and discrimination, strategies for handling prejudice.

07 Marks

## UNIT VII: GROUP PROCESSES AND SOCIAL INFLUENCE

*The unit deals with the concept of group, its functions and the dynamics of social influence. Different conflict resolution strategies will also be discussed.*

- Meaning of group, group behaviour, factors influencing group formation, types of groups, Social identity, intergroup conflict: conflict resolution strategies
- Social influence processes:- conformity, obedience and compliance, cooperation and competition.

08 Marks

## UNIT VIII: ENVIRONMENT AND SOCIAL CONCERNS

*The purpose of this unit is the understanding and application of psychology to some important social issues.*

- Human- Environmental relationships; noise pollution, air pollution, natural and man-made disasters
- Social issues:- poverty, aggression and violence, gender discrimination.
- Promoting pro-environmental behaviour, human rights and peace management.

08 Marks

## UNIT IXL STATISTICS

*The aim of this unit is to introduce the importance of different statistical measures used in Psychology*

- Meaning of Statistics, types of statistics, preparation of frequency distribution.
- Measures of central tendency: Mean, median and mode
- Measures of variability: Range, S.D., Q.D., Average Deviation.

08 marks

## **PRACTICALS**

**External = 20**

**Internal = 10**

**Total = 30**

- One case profile (Developmental history of the subject, using qualitative and quantitative approaches)
- Practicals (intelligence, personality, aptitude, adjustment, attitude, self concept and anxiety)
- **Distribution of Marks:**
  - i. Case Profile: 03 Marks
  - ii. Practical File: 03 Marks
  - iii. Viva Voce: 04 Marks
  - iv. Two Practicals 10 Marks

**BOOK PRESCRIBED:** A textbook of Psychology for Class XII published by NCERT, New Delhi

# SOCIOLOGY (Class XII)

Maximum Marks: 100

Theory: 80 Marks

Practicals: 20 Marks

Time: - 3 Hours

## INDIAN SOCIETY

### Unit 1: Introducing Indian Society

- Unity in Diversity in India
- Geographical, Cultural, Religious and Linguistic
- Ethnic Composition of J&K

Non-Evaluative

### Unit 2: Demography and Society

- Demography: Concept, Variables (Indicators) and Trends
- Theories of Population: Malthusian Theory; Demographic Transition Theory
- National Population Policy of India (2011)
- Population Composition of J&K

Marks 08

### Unit 3: Social Institutions

- Family: Concept and Functions
- Marriage: Concept and Types
- Caste System: Concept, Characteristics, Change and Continuity

Marks 08

### Unit 4: Social Inequality

- Meaning and Definition of Social Inequality
- Tribals: Definition and Characteristics; Distribution; Marginalisation of tribal Communities
- Religious Minorities
- The Differently Abled
- Struggle for Equality of Women

### Unit 5: Challenges to National Integration

- Communalism
- Regionalism
- Casteism
- Role of State: Constitutional and Legal Measures

Marks 08

### Unit 6: Methodology

- Research: Concept and Features
- Importance of Social Research
- Steps/ Stages of Social Research
- Sampling: Stratified and Non stratified
- Techniques of Data Collection: Observation, Interview, Schedule, Questionnaire

Marks 08

## CHANGE AND DEVELOPMENT IN INDIAN SOCIETY

### Unit 7: Processes of Social Change in India

- Modernisation
- Industrialisation and Urbanisation
- Sanskritisation
- Westernisation

Marks 08

### Unit 8: Change and Development in Rural Society

- Rural Society: Meaning and Features
- Land Reforms with Special Reference to J&K
- Green Revolution: Significance and Adverse Effects
- 73<sup>rd</sup> Amendment Act: Panchayati Raj Institution

Marks 08

- **Unit 9: Globalisation and Social Change** **Marks 08**
- Globalisation: Meaning and Concept
- Economic Globalisation
- Cultural Globalisation
- Political Globalisation

**Unit 10: Mass Media and Society** **Marks 08**

- Mass Media: Concept and Classification
- Role of Mass Media in Modern India (Environmental protection, Gender Sensitisation, Health Education)
- Social Media: Emergence, Merits and Demerits

**Unit 11: Social Movements** **Marks 08**

- Class Movement: Peasant Movement (Meaning, Impact and Trends)
- Caste Movement: Dalit Movement (Meaning, Impact and Trends)
- Environmental Movement: Meaning, Impact and Trends (Chipkoo Movement)

**BOOK PRESCRIBED:**

- A Textbook of Sociology for Class XII (Part I and 2) Published by NCERT, New Delhi.

**Scheme and Pattern of the Question Paper**

**Class-12th**

**Marks: 80+20=100** (80 Marks for Theory and 20 Marks for practicals)

**Subject:- Sociology**

**Section-A**

Five(05) long answer type questions from the following units with internal choice:-  
Units:- II, V, VI, VIII and XI

**5X5 = 25 Marks**

**Section-B**

Ten-short answer type questions, two from each of the below mentioned units:-  
Units:- III, IV, VII, IX, X

**10X3 = 30 Marks**

**Section-C**

Ten very short answer type questions from each unit mentioned in the Syllabus

**10X2 = 20 Marks**

**Section-D**

Five objective type questions from the following units:-  
II, V, VI, VIII and XI

**5X1 = 5 Marks**

**Practical Examination**

**External : 15 MARKS**

**Max Marks 20**

**Internal 5 MARKS**

**Time Allotted: 3 hrs**

**A. Project (undertaken during the academic year at school level)**

**05 Marks**

- |      |                          |          |
|------|--------------------------|----------|
| I.   | Statement of the purpose | 1½ marks |
| II.  | Methodology/ Technique   | 1½ marks |
| III. | Conclusion               | 2 marks  |

**B. Viva-based on the project work**

**2 marks**

**C. Research Design**

**8 marks**

- |    |                                    |         |
|----|------------------------------------|---------|
| a. | Overall format                     | 1 marks |
| b. | Research Questions/Hypothesis:     | 1 marks |
| c. | Choice of technique                | 2 marks |
| d. | Detailed procedure                 | 2 marks |
| e. | Limitations of the above technique | 2 marks |

B and C to be administered on the day of the external Examination

# APPLIED MATHEMATICS

Maximum Marks: 100

Time: 03hrs

## Unit 1st :- Matrices and determinants

(20 marks)

Definition of a matrix. Various types of matrices. Addition and multiplication of matrices. Transpose of a matrix and its properties (without proof)

Determinants of order not exceeding order three. Minors and cofactors of the elements of a determinants. Properties (without proof) of determinants and their application. Solution of a system of linear equations using determinants (Crammer's Rule) Singular and non singular matrices. Adjoint of a matrix, inverse of a matrix. Solution of linear equations with the help of matrices having two and three variables.

## Unit 2<sup>nd</sup> :- Limits and continuity of a function

(12 marks)

Definition of limit of a function, algebra of limits,  
Fundamental limits

$$\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a}, \lim_{\theta \rightarrow 0} \frac{\sin \theta}{\theta}, \lim_{x \rightarrow 0} \frac{a^{mx} - 1}{x}, \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n$$

$$\lim_{x \rightarrow 0} \frac{\log(1+x)}{x}$$

and their applications.  
Continuity of a function.

## Unit 3<sup>rd</sup>:- Derivative

(12 marks)

Derivative of a function, its geometrical and physical significance, derivative of some simple functions by first principle, derivative of sum, product and quotient of two functions. Derivative of inverse trigonometric functions (without proof) with applications only.

## Unit 4<sup>th</sup> Applications of derivatives

(10 marks)

Tangents and normal (Cartesian Co-ordinates only) Increasing and decreasing functions. Maxima and minima. Rolle's and Mean value theorem (without proof) and their simple applications.

## Unit 5<sup>th</sup> Integrals

(16 marks)

Integration as inverse of differentiation, integration of various functions by substitution, using trigonometric functions, partial fractions, by parts integrals of the type

$$\int \frac{dx}{x^2 \pm a^2} dx, \int \frac{dx}{a^2 - x^2}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}$$

$$\int \frac{dx}{ax^2+bx+c} \int \frac{(px+q)dx}{ax^2+bx+c} \int \sqrt{x^2 \pm a^2} dx, \int \sqrt{a^2 - x^2} dx,$$

$$\int \frac{dx}{\sqrt{ax^2+bx+c}}; \int \frac{(px+q)dx}{\sqrt{ax^2+bx+c}}$$

Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Properties of definite integrals and evaluation of definite integrals using properties of def. Integrals.

**Unit 6<sup>th</sup> Differential equations**

**(10 Marks)**

Differential equations: Order and degree of differential equation, solving of differential equations by variable separable method, homogenous differential equations, first order linear differential equations.

**Unit 7<sup>th</sup> Statics**

**(10 marks)**

Parallelogram law of forces, Resolution of forces, Triangle law of forces. Polygon law of forces. Lami's theorem. Parallel forces with applications

**Unit 8<sup>th</sup> Dynamics**

**(10 marks)**

Velocity, acceleration, equations of motion along a st. Line with uniform acceleration

$V = u + at$ ;  $x = ut + \frac{1}{2} at^2$ ;  $v^2 - u^2 = 2ax$ ; motion under gravity

# ISLAMIC STUDIES

Max. Marks: 100

Time allowed: 3 hours

Units	Marks
I. Worship in Islam (Ibadah and Arkan)	10
II. Ethical Values in Islam	10
III. Human Rights in Islam	10
IV. Status of Woman in Islam	10
V. Introduction to the Qu'ran	10
VI. Knowledge and the Quranic Teachings	10
VII. Social Teachings of the Qu'ran	10
VIII. Economic Teachings of the Qu'ran	10
IX. Introduction to Hadith	10
X. Introduction to Fiqh (Law)	10

## DETAILED SYLLABUS

### Unit-1: Worship in Islam (*Ibadah and Arkan*)

10 Marks

- I. Worship: meaning and importance
- II. Arkan: concept and importance
  - a. *Salah* (Prayer)
  - b. *Sawm* (Fasting)
  - c. *Zakah* (Alms giving)
  - d. *Hajj* (Holy Pilgrimage)

### Unit 2: Ethical Values in Islam

10 Marks

- i. Meaning and importance
- ii. **Virtues** (*Fada'il*)
  - a. Truthfulness (*sidq*)
  - b. Justice (*'adl*)
  - c. Modesty (*haya'*)
  - d. Trust (*amanah*)
- iii. **Vices** (*Rada'il*)
  - a. Backbiting (*ghibah*)
  - b. Lying (*kidhb*)
  - c. Anger (*gayd*)
  - d. Theft (*sarq*)

### Unit 3: Human Rights in Islam

10 Marks

- i. Meaning and importance
- ii. A brief account of the following human rights:
  - a. Right to life
  - b. Right to belief
  - c. Right to property
  - d. Right to freedom of expression
  - e. Right to privacy

### Unit 4: Status of woman in Islam

10 Marks

- i. As a mother
- ii. As a wife
- iii. As a sister
- iv. As a daughter

### Unit 5: Introduction to the Qu'ran

10 Marks

- i. Qu'ran: A revelation (*wahy*) from Allah
- ii. Earlier revealed books of Allah
- iii. The event of first Quranic revelation
- iv. Qu'ran: the final universal message

### Unit 6: Knowledge and the Quranic Teachings

10 Marks

- i. Quran: A Book of Divine knowledge
- ii. Importance of knowledge in the Qu'ran
- iii. Commandments:
  - a. Lawful (*Halal*)
  - b. Unlawful (*Haram*)

### Unit 7: Social Teachings of the Qu'ran

10 Marks

- a. Respect and obedience to parents
- b. Respect and obedience to teachers
- c. Behaviour with relatives
- d. Treatment towards neighbours

**Unit 8: Economic Teachings of the Qu'ran**

**10 Marks**

- a. Charity (*Sadaqah*)
- b. Crop tax (*Ushr*)
- c. Public treasury (*Bait-ul-Maal*) : concept and importance
- d. Usury (*Riba*): meaning and prohibition

**Unit 9: Introduction to Hadith**

**10 Marks**

- i. Meaning and importance
- ii. Place of Hadith in Islam
- iii. Kinds of Hadith: Sahih, Hasan, Maudu, Daif

**Unit 10: Introduction to Fiqh (Law)**

**10 Marks**

- i. Meaning and importance
- ii. Development of Fiqh: early period
- iii. Sources of Fiqh:
  - a. The Qu'ran
  - b. Hadith
  - c. Ijma'
  - d. Qiyas

# VEDIC STUDIES

Max. Marks: 100

Time Allowed : 03 Hours

Unit I	Vedic Scholars – Indian and Western	Marks 10
Unit II	Allied Vedic Literature	Marks 10
Unit III	Universe	Marks 10
Unit IV	The Land and the People	Marks 20
Unit V	Literature having Vedas as Source 'I'	Marks 15
Unit VI	Literature having Vedas as Source 'II'	Marks 15
Unit VII	Vedic Science and Technology.	Marks 10
Unit VIII	Vedic Concepts.	Marks 10

## Unit I Vedic Scholars – Indian and Western:

- (i) Indian Scholars :  
Yask, Venkat Madhav, Sayana,  
Swami Dayanand, Aurobindo Ghosha and  
Vinoba Bhawe.
- (ii) Western Scholars :  
Rudalf Roth, Friedrich, Max Muller,

## Unit II Allied Vedic Literature :

- (i) Vedangas.
- (ii) Upavedas

## Unit III Universe :

- (i) Origin of Universe.
- (ii) Parts of Universe.

## Unit IV The Land and the People :

- (i) Mother Land.
- (ii) People.
- (iii) Flora and Fauna.

## Unit V Literature having Vedas as Source 'I':

- (i) Ramayana.

- (ii) Mahabharata

**Unit VI Literature having Vedas as Source 'II' :**

- (i) Smritis
- (ii) Puranas

**Unit VII Vedic Science and Technology :**

- (i) Ganita .
- (ii) Physics
- (iii) Chemistry

**Unit VIII Vedic Concepts :**

- (i) Universal Law
- (ii) Sacrifice
- (iii) Equality and Unity.
- (iv) Punya and Paap.
- (v) Four Aims of Life

**BOOK PRESCRIBED :**

Vedic Studies Part-II

Published by Jammu and Kashmir State Board of School Education.

# MUSIC

**Max. Marks: 100**  
**Theory: 50 Marks**  
**Practical: 50 Marks**

**Time: - 3 Hours**

## THEORY

1. History of Ancient Indian Music.
2. Define Shruti and Swar. Establishment of seven shudh Swars on 22 Shruties (according to ancient, medieval and modern scholars)
3. Classification of Indian Instruments.
4. Define Naad and its kinds.
5. Time Theory of Indian Raagas.
6. Life history and contribution of following Musicians:-  
(i) Bhimsen Joshi (ii) Vilayat Khan (iii) Kashori Amonkar.
7. Qualification and disqualification of Musicians (Vocalist and instrumentalist)
8. Writing of Notation of the Raagas of your course of study.
9. Definition of Ragaas.
10. Notation of Talas of your course of study.
11. Definition of Talas.

## Books Suggested

1. Sangeet Shastra Darpan part II
2. Sangeet Visharad by shri Vasant
3. Rag Parichay Part I and II by Srivastva.
4. Kramik pustak Malika (Part I and Part II (by Pt. Bhat Khanday)
5. Humar Sangeet Rattan.

## Practical

Note: 25 Marks reserved for internal assessment shall be awarded on the basis of performance.

External examination / assessment will be of 25 marks.

## PRACTICALS

1. Singing and playing of ten Alankars; Students should have concept to create new Alankars of their choice with two or three swars combination. **03 Marks**

2. Vilambit khayal or Maseet khani Gat in any of the prescribed Ragas of your course of study. 05 Marks
3. Drut khayal & Razakhani Gat with initial Alap, Tanas or todas & Jhalla in following Ragas.  
(i) Bhopali (ii) Bhairav (iii) Kafi 05 Marks
4. Any devotional or patriotic or folk song or folk duni. 02 Marks
5. Playing of the following Talas in single & Double Layakaries.  
(i) Ek Taal (ii) Tilwara Taal (iii) Jhap Taal (iv) Rupak Taal 05 Marks
6. Viva-Voce 05 Marks

**Note:** Maintenance of the File for Practical work to be included in internal assessment.

#### SCHEME OF ASSESSMENT

04 Long Answer type Questions	= 04Q x 7 Marks	= 28 Marks
05 Short Answer type Questions	= 05Q x 3 Marks	= 15 Marks
04 Very Short Answer type Questions	= 04Q x 1 Marks	= 04 Marks
03 Objective/ Multiple Choice Questions	= 03Q x 1 Marks	= 03 Marks

# MATHEMATICS

Theory: Marks 100

Time allowed: 03 hrs.

I. RELATIONS AND FUNCTIONS	Marks 10
II. ALGEBRA	Marks 13
III. CALCULUS	Marks 44
IV. VECTORS AND THREE - DIMENSIONAL GEOMETRY	Marks 17
V. LINEAR PROGRAMMING	Marks 06
VI. PROBABILITY	Marks 10

## UNIT I. RELATIONS AND FUNCTIONS

### 1. Relations and Functions

Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations.

### 2. Inverse Trigonometric Functions

Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions.

## UNIT-II: ALGEBRA

### 1. Matrices

Concept, notation, order, equality, types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric matrices. Addition, multiplication and scalar multiplication of matrices, simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

### 2. Determinants

Determinant of a square matrix (up to  $3 \times 3$  matrices), properties of determinants, minors, cofactors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix. Cramer's rule and its applications.

## UNIT-III: CALCULUS

### 1. Continuity and Differentiability

Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit functions. Concept of exponential and logarithmic functions to the base  $e$ . Logarithmic functions as inverse of exponential functions.

$$\lim_{x \rightarrow 0} \frac{1}{x}, \lim_{x \rightarrow \infty} \frac{1}{x}, \lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x, \lim_{x \rightarrow 0} (1+x)^{1/x}, \lim_{x \rightarrow 0} \frac{\log(1+x)}{x}, \lim_{x \rightarrow 0} \frac{e^x - 1}{x}$$

Derivative of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretations and simple applications.

## 2. Applications of Derivatives

Applications of derivatives: rate of change, increasing/decreasing functions, tangents & normals, approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).

## 3. Integrals

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, only simple integrals of the type to be evaluated.

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$$

$$\int \frac{(px + q)}{ax^2 + bx + c} dx, \int \frac{(px + q)}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2} \cdot dx, \int \sqrt{x^2 - a^2} dx,$$

$$\int \sqrt{ax^2 + bx + c} dx, \int \frac{dx}{a + b \cos x}, \int \frac{dx}{a + b \sin x}, \int (px + q) \sqrt{ax^2 + bx + c} dx$$

Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

## 4. Applications of the Integrals

Applications in finding the area under simple curves, especially lines, areas of circles/parabolas/ellipses (in standard form only), area under the curve  $y = \sin x$ ,  $y = \cos x$ , area between the two above said curves (the region should be clearly identifiable).

## 5. Differential Equations

Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type:

$$\frac{dy}{dx} + py = q, \text{ where } p \text{ and } q \text{ are functions of } x \text{ and}$$

$$\frac{dx}{dy} + px = q, \text{ where } p \text{ and } q \text{ are functions of } y.$$

## **UNIT-IV: VECTORS AND THREE-DIMENSIONAL GEOMETRY**

### **1. Vectors**

Vectors and scalars, magnitude and direction of a vector. Direction cosines/ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors. Scalar triple product.

### **2. Three-dimensional Geometry**

Direction cosines/ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes. (iii) a line and a plane. Distance of a point from a plane.

## **UNIT-V: LINEAR PROGRAMMING**

### **1. Linear Programming**

Introduction, definition of related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

## **UNIT-VI: PROBABILITY**

### **1. Probability**

Multiplication theorem on probability. Conditional probability, independent events, total probability, Baye's theorem, Random variable and its probability distribution, mean and variance of random variable. Repeated independent (Bernoulli) trials and Binomial distribution.

### **Suggested Textbook**

- 1) Mathematics Textbook for Class XII, NCERT, Publication.

# STATISTICS

**Max. Marks: 100**

**Time allowed: 3 hrs**

**Theory: 70 marks**

## **UNIT-I: Probability-I**

**(08 marks)**

Random experiment, trial, sample space, sample point, event, impossible event, exhaustive events, equally like and mutually exclusive events. Independent & dependent events. Classical/mathematical and statistical definition of Probability. Axioms of probability. Law of addition for two event. Multiplication law for two events. Concept of conditional probability. Statement of Bayes Theorem (without proof) and examples.

## **UNIT-II: Probability-II**

**(08 marks)**

Random variable, Discrete & continuous random variable. Distribution function. Discrete & continuous Discrete function. Probability mass function, probability density function. Examples on distribution function, probability mass function & probability density function. Definition of Bernoulli, Binomial & Poisson distributions and their applications.

## **UNIT-III: Regression Analysis**

**(10 marks)**

Concept of Regression. Regression lines, Regression coefficients. Properties of Regression coefficients. Angle between two Regression lines. Examples on Regression Analysis.

## **Unit-IV: Theory of Attributes.**

**(08 marks)**

Introduction, Dichotomy, Notations, Manifolds Classifications, Class frequencies, Order of Class frequencies, Ultimate Class Frequency. Consistency of Data. Criteria for checking independence & association between two attributes. Yule's Coefficient of association.

## **Unit-V: Index Numbers**

**(10 marks)**

Introduction, Characteristics of Index numbers, Uses of Index numbers, Problems in the construction of Index numbers. Price relatives. Methods of constructing Index Numbers. Simple or unweighted Index numbers and its limitations. Simple average of price relatives, its merits and demerits. Weighted Index numbers. Method of Laspeyres's Paasche's and Fisher's ideal index numbers. Time and factor reversal tests.

## Unit-VI Vital Statistics

(08 marks)

Meaning and nature of Vital Statistics. Its uses. Vital events, rates of Vital events. Measurements of population, mean population, measures of fertility and mortality. Crude birth rate, specific birth rate, standardized birth rate. Crude death rate, specific death rate, standardized death rate.

## Unit-VII Sampling Theory

(08 marks)

Meaning and objectives of Sampling. Concept of Statistical population and Sample. Requisites of a good sample. Complete enumeration of population, advantages & disadvantages of complete enumeration over sample survey. Concept of Sampling and non Sampling errors. Types of Samples. Methods of Sampling. (Simple Random Sampling, stratified random Sampling and systematic Sampling) advantages and disadvantages of these methods.

## Unit-VIII: Time Series and Computers.

(10 marks)

Introduction and importance of Time Series. Components of Time Series(secular trend, seasonal variation, Cyclic variation and irregular movements).Measure of trend (free hand graphical methods and semi average method).

Computers:- Introduction to operating systems (OS), functions of operating systems, graphical representation of data charts through Excel. Calculation of measures of central tendency through Excel, Concept of Internet & its applications.

## PRACTICAL WORK:-

30 marks

1. Practical's based on Baye's theorem.
2. Calculation of two Regression lines.
3. Construction of Index numbers (Laspyer's, Paasche's and Fisher's method.)
4. Practical's based on measures of fertility and mortality.
5. Estimates of Trend values by free hand and semi average method.
6. Drawing of Chars through Excel.
7. Measures of central Tendency through Excel.

## BOOKS SUGGESTED:-

1. Fundamnetals of Mathematical Statistics by S.C. Gupta & V.K. Kapoor (S. Chand, New Delhi)

2. Fundamentals of Applied Statistics by S.C. Gupta & V.K. Kapoor (S. Chand, New Delhi).
3. Practical **Statistics** by S.C. Gupta (Himalayan Publishing House, New Delhi).
4. Mathematical Statistics by H.C. Saxena (S. Chand, New Delhi).
5. Introduction to Mathematical Statistics by Robert V. Hogg & Allen. T Craig (Macmillan International Publishers Co. Ltd.)

# BUSINESS MATHEMATICS

Max. Marks: 100

Time: 3 hrs

## Unit 1st:- Matrices and determinants

(15 marks)

Definition of a matrix, various types of matrices. Addition and multiplication of matrices. Transpose of a matrix and its properties (without proof).

Determinants of order not exceeding order three. Minors and cofactors of the elements of a determinant. Properties (without proof) of determinants and their applications. Solution of a system of linear equations using determinants (Cramer's Rule). Singular and non singular matrices. Adjoint of a matrix, inverse of a matrix, solution of linear equations with the help of matrices having two and three variables.

## Unit 2<sup>nd</sup> Limits and continuity of a function

(10 marks)

Definition of limit of a function, algebra of limits, Fundamental limits

$$\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a}, \lim_{\theta \rightarrow 0} \frac{\sin \theta}{\theta}, \lim_{x \rightarrow 0} \frac{a^{mx} - 1}{x}, \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n,$$
$$\lim_{x \rightarrow 0} \frac{\log(1+x)}{x}$$

and their applications. Continuity of a function .

## Unit 3<sup>rd</sup> Derivative

(15 marks)

Derivative of a function, its geometrical and physical significance, derivative of some simple functions by first principle method ( $x^3$ ,  $(ax + b)^n$ ,  $\sin x$ ,  $\cos x$ ,  $\tan x$ ,  $\log x$ ,  $a^x$ ), derivative of sum, product and quotient of two functions. Derivative of inverse trigonometric functions (without proof) with applications.

## Unit 4<sup>th</sup> Integration

(15 marks)

Integration as inverse of differentiation . Integration of various functions by substitutions, partial fractions & by parts. Evaluation integrals of the type

$$\int \frac{dx}{x^2 \pm a^2} dx, \int \frac{dx}{a^2 - x^2}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{\sqrt{x^2 \pm a^2}},$$
$$\int \frac{dx}{ax^2 + bx + c}, \int \frac{(px + q)dx}{ax^2 + bx + c}, \int \sqrt{x^2 \pm a^2} dx, \int \sqrt{a^2 - x^2} dx,$$
$$\int \frac{dx}{\sqrt{ax^2 + bx + c}}; \int \frac{(px + q)dx}{\sqrt{ax^2 + bx + c}}$$

**Unit 5<sup>th</sup> Differential equation**

**(15 marks)**

**Differential equations** :- Order and degree of differential equations. Solution of differential equations (variable separable method, homogenous differential equations. First order linear differential equations)

**Unit 6<sup>th</sup> Applications of Integration**

**(10 marks)**

Definite integrals as a limit of a sum, Fundamental theorem of calculus (without proof) Properties of definite integrals and evaluation of definite integrals using properties.

**Unit 7<sup>th</sup> Application of calculus in commerce and economics**

**(10 marks)**

Average cost and marginal costs. Total revenue, average revenue and marginal revenue. Break even analysis, maximization of total revenue and total profits. Maximization of average costs.

**Unit 8<sup>th</sup> Computing**

**(10 marks)**

What are computers, what they can perform and what they can't perform. Role and use of computers in modern society, meaning of a problem- algorithm, a detailed and precise step by step method of solution of the problem illustrated by means of simple day to day problems. Problems (like buying of an article, multiplication, compound interests, discount, L.C.M and H.C.F with easy exercises.

# COMPUTER SCIENCE

Maximum Marks: 100

Theory: Marks 70

Time: 3 hours

Practicals: Marks 30

External: 20 Marks

Internal : 10 Marks

- PROGRAMMING IN C++ Marks 30
- DATA STRUCTURES Marks 14
- DATABASES AND SQL Marks 08
- BOOLEAN LOGIC Marks 08
- COMMUNICATION AND OPEN SOURCE CONCEPTS Marks 10

## UNIT 1: PROGRAMMING IN C++

REVIEW: C++ covered In Class -XI,

### Object Oriented Programming:

Concept of Object Oriented Programming – Data hiding, Data encapsulation, Class and Object,

Abstract class and Concrete class, Polymorphism (Implementation of polymorphism using Function overloading as an example in C++); Inheritance, Advantages of Object Oriented Programming over earlier programming methodologies,

### Implementation of Object Oriented Programming concepts in C++:

Definition of a class, Members of a class - Data Members and Member Functions (methods), Using Private and Public visibility modes, default visibility mode (private); Member function definition: inside class definition and outside class definition using scope resolution operator (::); Declaration of objects as instances of a class; accessing members from object(s), Array of type class, Objects as function arguments - pass by value and pass by reference;

### Constructor and Destructor:

Constructor: Special Characteristics, Declaration and Definition of a constructor, Default Constructor, Overloaded Constructors, Copy Constructor, Constructor with default arguments; Destructor: Special Characteristics, Declaration and definition of destructor;

### Inheritance (Extending Classes):

Concept of Inheritance, Base Class, Derived Class, Defining derived classes, protected visibility mode; Single level inheritance, Multilevel inheritance and Multiple inheritance, Privately derived, Publicly derived and Protectedly derived class, accessibility of members from objects and within derived class(es);

### Data File Handling:

Need for a data file, Types of data files – Text file and Binary file; Text File: Basic file operations on text file: Creating/Writing text into file, Reading and manipulation of text from an already existing text File (accessing sequentially); Binary File: Creation of file, Writing data into file, Searching for required data from file, Appending data to a file, Insertion of data in sorted file, Deletion of data from file, Modification of data in a file; Implementation of above mentioned data file handling in C++; Components of C++ to be used with file handling: Header file: `fstream.h`; `ifstream`, `ofstream`, `fstream` classes; Opening a text file in **in**, **out**, and **app** modes; Using cascading operators for writing text to the file and reading text from the file; **open()**, **get()**, **put()**, **getline()** and **close()** functions; Detecting end-of-file (with or without using **eof()** function); Opening a binary file using **in**, **out**, and **app** modes; **open()**, **read()**, **write()** and **close()** functions; Detecting end-of-file (with or without using **eof()** function); **tellg()**, **tellp()**, **seekg()**, **seekp()** functions

### Pointers:

Declaration and Initialization of Pointers; Dynamic memory allocation/deallocation operators: **new**, **delete**; Pointers and Arrays: Array of Pointers, Pointer to an array (1 dimensional array), Function returning a pointer, Reference variables and use of alias; Function call by reference. Pointer to structures: Dereference operator: **\***, **->**; self referential structures;

## UNIT 2: DATA STRUCTURES

### Arrays:

One and two Dimensional arrays: Sequential allocation and address calculation; One dimensional array: Traversal, Searching (Linear, Binary Search), Insertion of an element in an array, deletion of an element from an array, Sorting (Insertion, Selection, Bubble sort), concatenation of two linear arrays, merging of two sorted arrays; Two-dimensional arrays: Traversal, Finding sum/difference of two NxM arrays containing numeric values, Interchanging Row and Column elements in a two dimensional array;

### Stack (Array and Linked implementation of Stack):

Operations on Stack (PUSH and POP) and its Implementation in C++, Converting expressions from INFIX to POSTFIX notation and evaluation of Postfix expression; **Queue: (Circular Array and Linked Implementation):**

Operations on Queue (Insert and Delete) and its Implementation in C++.

## UNIT 3: DATABASES AND SQL

### Database Concepts:

Relational data model: Concept of domain, tuple, relation, key, primary key, alternate key, candidate key; Relational algebra: Selection, Projection, Union and Cartesian product;

### Structured Query Language:

General Concepts: Advantages of using SQL, Data Definition Language and Data Manipulation Language; Data types: NUMBER, CHARACTER, DATE;

### SQL Commands:

CREATE TABLE, DROP TABLE, ALTER TABLE, UPDATE...SET..., INSERT, DELETE; SELECT, DISTINCT, FROM, WHERE, IN, BETWEEN, GROUP BY, HAVING, ORDER BY;

SQL functions: SUM, AVG, COUNT, MAX and MIN; obtaining results (SELECT query) from 2 tables using equi-join, cartesian product and union Note: Implementation of the above mentioned commands could be done on any SQL supported software on one or two tables.

### UNIT 4: BOOLEAN LOGIC

Binary-valued Quantities, Boolean Variable, Boolean Constant and Boolean Operators: AND, OR, NOT; Truth Tables; Closure Property, Commutative Law, Associative Law, Identity law, Inverse law, Principle of Duality, Idempotent Law, Distributive Law, Absorption Law, Involution law, DeMorgan's Law and their applications; Obtaining Sum of Product (SOP) and Product of Sum (POS) form from the Truth Table, Reducing Boolean Expression (SOP and POS) to its minimal form, Use of Karnaugh Map for obtaining minimal form of Boolean expressions (up to 4 variables); Applications of Boolean Logic:

- Digital electronic circuit design using basic Logic Gates (NOT, AND, OR, NAND, NOR)
- Use of Boolean operators (AND,OR) in SQL SELECT statements
- Use of Boolean operators (AND, OR) in search engine queries.

### UNIT 5: COMMUNICATION AND OPEN SOURCE CONCEPTS

Evolution of Networking: ARPANET, Internet, Interspace; Different ways of sending data across the network with reference to switching techniques;

#### Data Communication Terminologies:

Concept of Channel, Baud, Bandwidth (Hz, KHz, MHz, GHz) and Data transfer rate (bps, kbps, Mbps, Gbps, Tbps);

#### Transmission Media:

Twisted pair cable, coaxial cable, optical fiber, infrared, radio link, microwave link and satellite link.

#### Networking devices:

Modem, RJ45 connector, Ethernet Card, Hub, Switch, Gateway;

#### Network Topologies and types:

Bus, Star, Tree; Concepts of PAN, LAN, WAN, MAN

#### Network Protocol:

TCP/IP, File Transfer Protocol (FTP), PPP, Level-Remote Login (Telnet); Wireless/Mobile Communication protocols such as GSM, CDMA, GPRS, WLL; Electronic Mail protocol such as SMTP, POP3, iMAP, Chat, Video Conferencing; VoIP protocols such as Wi-Fi and Wi-Max

## Network Security Concepts:

Threats and prevention from Viruses, Worms, Trojan horse, Spams Use of Cookies, Protection using Firewall; India IT Act, Cyber Law, Cyber Crimes, IPR issues, Hacking.

## Web Services :

Hyper Text Markup Language (HTML), eXtensible Markup Language (XML); Hyper Text Transfer Protocol (HTTP); Domain Names; URL; IP Address; Website, Web browser, Web Servers; Web Hosting, Web Scripting – Client side (VB script, Java Script, PHP) and Server side (ASP, JSP, PHP), Web 2.0 (for social Networking)

## Open Source Terminologies:

Open Source Software, FreeWare, Shareware, Proprietary software, FLOSS, GNU, FSF, OSI;

## Practicals : 30 Marks

Duration: 3 hours

Marks: 30

External : 20 Marks

Internal = 10 Marks

### 1. Programming in C++

One programming problem in C++ to be developed and tested in Computer during the examination. Marks are allotted on the basis of following: **Marks 07**

Logic : 3 Marks

Documentation/Indentation : 2 Marks

Output presentation : 2 Marks

Notes: The types of problems to be given will be of application type from the following topics

- Arrays (One dimensional and two dimensional)
- Array of structure
- Stack using arrays and linked implementation
- Queue using arrays (circular) and linked implementation
- Binary File operations (Creation, Displaying, Searching and modification)
- Text File operations (Creation, Displaying and modification)

### 2. SQL Commands

Marks 03

Five Query questions based on a particular Table/Relation to be tested practically on Computer during the examination. The command along with the result must be written in the answer sheet.

### 3. Project Work

Marks 03

The project has to be developed in C++ language with Object Oriented Technology and also should have use of Data files. (The project is required to be developed in a group of 2-4 students)

- Presentation on the computer
- Project report (Listing, Sample, Outputs, Documentation)
- Viva

#### 4. Practical File

Marks 04

Must have minimum 20 programs from the following topics

- Arrays (One dimensional and two dimensional, sorting, searching, merging, deletion & insertion of elements)
- Arrays of structures, Arrays of Objects
- Stacks using arrays and linked implementation
- Queues using arrays (linear and circular) and linked implementation
- File (Binary and Text) operations (Creation, Updation, Query)
- Any computational based problems
- 15 SQL commands along with the output based on any table/relation: 3 Marks

#### 5. Viva Voce

Marks 03

Viva will be asked from syllabus covered in class XII and the project developed by student.

### GUIDELINES FOR PROJECTS (Class XII)

#### 1. Preamble

- 1.1 The academic course in Computer Science includes one Project. The Purpose behind this is to consolidate the concepts and practices imparted during the course and to serve as a record of competence.
- 1.2 A group of 2-4 students as team may be allowed to work on one project.

#### 2. Project content

- 2.1 Project for class XII should ensure the coverage of following areas of curriculum:
  - a. Problem Solving
  - b. Data Structure
  - c. Object Oriented Programming in C++
  - d. Data File Handling

Theme of the project can be

- Any subsystem of a System Software or Tool
  - Any Scientific or a fairly complex algorithmic situation.  
School Management, Banking, Library information system, Hotel or Hospital
  - Management system, Transport query system
  - Quizzes/Games;
  - Tutor/Computer Aided Learning Systems
- 2.2 The aim of the project is to highlight the abilities of algorithmic formulation, modular programming, optimized code preparation, systematic documentation and other associated aspects of Software Development.
  - 2.4 The assessment would be through the project demonstration and the Project Report, which should portray Programming Style, Structured Design, Minimum Coupling, High Cohesion, Good documentation of the code to ensure readability and ease of maintenance.

# INFORMATICS PRACTICES

Maximum Marks : 100

Theory : Marks 70

Time : 3 hours

Practicals : Marks 30. External : 20 marks, Internal : 10 marks

Topic	Marks
Computer Networking & OSS	20
Visual Basic Programming	15
Fundamentals of DBMS	20
Internet & Web Application Development	15

## UNIT I: COMPUTER NETWORKING & OSS

A brief overview of Networking, Identifying computers over a network; Types of Network Address (MAC, IP); Domain Name Resolution; Types of Networks (PAN LAN, MAN, WAN); Networking Topologies (BUS, RING, STAR, TREE); Network Media – Guided (Twisted Pair, Fiber Optics, Co-axial), Unguided (Infrared, Radio, Microwave); Network Devices – Modem, Repeater, Hub, Switch, Gateway and their function; Network Technologies – Ethernet, Bluetooth, WiFi; Network Security – Brief Overview, Network Threats, Virus, Worms, Trojan Horse, Denial Of Service, Snooping; Network Security Measures – Anti-virus, Firewall, Intrusion Detection.

Open Source Concepts – Open Source Software Overview, Common Foss Examples (GNU/ LINUX, Firefox, Open Office).

## UNIT II : VISUAL BASIC PROGRAMMING

Revision of Decision Structures (IF, IF-Then-Else, Select Case), Revision of Looping Structure (Do-While, While – Wend, For – Next); Functions – Inbuilt Functions (String – Space) (), chr(), Str(), Right(), Left(), Mid(), InStr(), Len(), LTrim(), RTrim(), UCase(), LCase(), String(), Number Function – Sgn(), Val(), Int(), Abs(), Fix(), Sqr(), Power(), Round(), Trunc(): Time Functions– Now(), Time(), Minute(), Month(), MsgBox(), InputBox(); Types of Forms (SDI & MDI).

## UNIT III : FUNDAMENTALS OF DBMS

Introduction to Database, definition of Database. Table, Attribute, Tuple / Rows, Field, Data; Data Types & Data Integrity, Candidate Key, Alternate Key, Primary Key, Foreign Key; Constraints (Unique, NULL, Not NULL); Front End and Back End of a DBMS, Examples of Front End Software like Oracle, VB, Visual C++, Etc;

Types of SQL Commands – SQL Data types (Varchar2, Char, Number, Date, Long); SQL Operators (Arithmetic, Relational, Logical); Types of SQL Commands (DDL, DML); DDL Commands (Create, Alter, Drop), DML Commands (Select, Insert, Update, Delete including different Clauses); TCL Commands (Commit, RollBack, SavePoint).

SQL Functions – Brief Overview, Character & String Function; Character Function (Lower, Upper, InitCap), Character Manipulation Function (Concat, Substr, Length, Instr, LPad, Trim), Number Functions (Abs, Ceil, Exp, Len, Long, Mod, Power, Round, SQRT, Trunc, Floor); Date Functions (Months\_Between, Add\_Months, Next\_Day, Last\_Day); Conversion Functions (To\_Date, To\_Number, To\_Char); Group Functions (Avg (), Count(), Max(), Min(), Sum()).

#### **UNIT IV : INTERNET & WEB APPLICATION DEVELOPMENT**

Introduction, hardware/Software requirement, Uses and facilities of Internet, ISP, WWW, Web Browser, Web Page & Types, Web Address, Search Engines, Web Applications, URL Address.

Introduction to HTML Scripting language, Page Structure, Head Section, Body Section, Base Font, Font, Text Links, Text Format, Text Size, Text Layout, Marquee, HTML Lists – Bulleted, Numbered, Lists, Images – GIF, JPG, Resizing, Body Around, Alternate Text, Spacing Around, Alignment; Background Color, Background Image; Html Tables, Basic Tags, Table Tags, Row/Cell Tags.

#### **PRACTICALS**

**Time : 3 Hours**

**Marks 30**

1. LAN Implementation of School Computer Lab. & Identifying different Network Devices used during the setup.
2. Establishing a PAN using PDU (Personal Data Units) any one of the wireless technologies given in the syllabus.
3. WAP to check whether a given number is Even/Odd.
4. WAP to print the Factorial of a given Number.
5. WAP to SWAP two given values.
6. WAP to find min/max of three given numbers.
7. WAP to print the Multiplication table of a given number.
8. WAP to generate the Fibonacci Series.
9. WAP to convert a given string from Lower Case to Upper Case or Vice Versa.

10. Create an Application using Scroll Barr Control and Text Boxes to mix different colors.
11. Students are supposed to workout 25 SQL queries based on one/two tables.
12. Create five Web Pages using different HTML Tags (Heading, Links, Marquee, Images, Background Color).

## ENGLISH LITERATURE

### Section A: Poems (from the prescribed text book)

(25 marks)

1. A Lecture upon a Shadow
2. Poems
3. Time and Time Again
4. Vaakhs
5. Shrukhs
6. A will in the Name of a New Man
7. The Wail
8. A Last Memory of Delhi

John Donne  
William Blake  
A.K. Ramanujan  
Lal Ded  
Sheikh Nooruddin Wali  
Kehari Singh Madhukar  
Naseem Shafaie  
Agha Shahid Ali

### Section B: Drama (from the prescribed text book)

(20 marks)

1. *Broken Images*

Girish Karnad

### Section C: Essays (from the prescribed text book)

(25 marks)

1. Of Delay
2. Freedom
3. Film-making
4. Why the Novel Matters
5. The Argumentative Indian
6. On Science Fiction

Francis Bacon  
G.B. Shaw  
Ingmar Bergman  
D.H. Lawrence  
Amartya Sen  
Isaac Asimov

### Section D: Novel

(30 marks)

1. *To Kill a Mockingbird*

Harper Lee

# Scheme of Assessment for ENGLISH LITERATURE

Maximum Marks: 100

Time: - 3 Hours

The paper shall have four (04) sections based on the textbook published by the J&K Board of School Education and the novel *To Kill a Mockingbird*.

(Section A) Poem (from the prescribed textbook) 25 Marks

1. Two reference to the context questions to be attempted out of four. (100 words) (2x4 = 8)
2. Three questions on poetic devices to be attempted out of six. (40 words) (3x3 = 9)
3. Two questions on theme, structure, background, technique etc to be attempted out of four. (100 words) (2x4 = 8)

(Section B) Drama 20 Marks

Prescribed text: *Broken Images* by Girish Karnad

4. One question on theme/plot/character/background/technique etc to be attempted out of two. (250 words) (1x10 = 10)
5. One question on incident/scene/character/situation etc to be attempted out of two. (200 words) (1x8 = 8)
6. Two objective type questions including MCQ's true/false, fill in the blanks etc. (1x2 = 2)

(Section C) Essays (from the prescribed textbook) 25 Marks

7. One question on theme/structure/background etc to be attempted out of two. (200 words) (1x8 = 8)
8. Two questions on technique/moral/literary devices etc to be attempted out of four excluding the essays on which Q.7 above is based. (150 words) (2x5 = 10)
9. One reference to the context question to be attempted out of two. (150 words) (1x5 = 5)
10. Two objective type questions including MCQ's, true/false, fill in the blanks etc. (2x1 = 2)

(Section D) Novel 30 Marks

Prescribed text: *To Kill a Mockingbird* by Harper Lee

11. One question on theme/plot/character/background/narration, etc to be attempted out of two questions. (300 words) (1x15 = 15)
12. Two questions on incident/scene/character/situation/technique/critical appreciation etc to be attempted out of four. (150 words) (2x5 = 10)
13. Five objective type question including MCQ's, true/false, fill in the blanks etc. (1x5 = 5)

# PHYSICS

Maximum Marks: 100

Theory: Marks 70

Practicals: Marks 30

Time: 3 hour

I. Electrostatics	08 marks
II. Current Electricity	07 marks
III. Magnetic effects of current and magnetism	08 marks
IV. Electro-magnetic induction and alternating currents	08 marks
V. Electro-magnetic waves	03 marks
VI. Optics	14 marks
VII. Dual nature of matter and radiation	04 marks
VIII. Atoms and Nuclei	06 marks
IX. Electronic devices	07 marks
X. Communication system	05 marks

## Unit I : Electrostatics

Electric charges; conservation of charge, coulomb's law – force between two point charges, forces between multiple charges, superposition principle and continuous charge distribution.

Electric field, electric field due to point charge, electric field lines, and electric dipole. electric field due to dipole, Torque on a dipole in uniform electric field.

Electric flux, statement of Gauss's theorem and its application to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

Electric potential, potential difference, electric potential due to point charge, a dipole and system of charges; equipotential surfaces, electric potential energy of a system of two point charges and of electric dipole in an electrostatic field.

Conductor and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor. Van de Graaff generator.

## Unit-II : Current Electricity

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current. Ohm's law, electric resistance. V-I. Characteristics, (linear, non-linear), electrical energy and power, electric resistivity and conductivity, carbon resistors, colour code for carbon resistors; Temperature dependence of resistance.

Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel. Elementary idea of secondary cells. Kirchoff's laws and their applications. Wheat stone bridge, meter bridge.

Potentiometer-principle and its application to measure potential difference and for comparing e.m.f. of two cells; measurement of internal resistance of a cell.

### Unit-III : Magnetic Effects of Current and Magnetism

Concept of magnetic field, Oersted's experiment, Biot-Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinite long straight wire, straight and toroidal solenoids.

Force on a moving charge in a uniform magnetic and electric fields. Cyclotron. Force on a current carrying conductor in a uniform magnetic field. Force between two parallel current carrying conductors-definition of ampere.

Torque experienced by a current loop in uniform magnetic field, moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

Current loop as a magnetic dipole and its magnetic dipole moment. Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis. Torque on a magnetic dipole (bar magnet) in uniform magnetic field. bar magnet as an equivalent solenoid, magnetic field lines, Earth's magnetic field and magnetic elements. Para, dia, and ferro-magnetic substances with examples. Electromagnets and factors affecting their strength, permanent magnets.

### Unit IV : Electro-magnetic Induction and Alternating Currents

Electromagnetic induction, Faraday's laws, induced e.m.f. and current; Lenz's law, Eddy currents, self and mutual inductance.

Alternating currents, peak and rms value of alternating current/voltage. Reactance and impedance, LC oscillations (qualitative treatment only) & LCR circuits series, Resonance, power in A.C. circuits, wattles current, AC Generator and transformer.

### Unit-V : Electro-magnetic Waves

Need for displacement current, Electro-magnetic waves and their characteristics (qualitative ideas only), transverse nature of electromagnetic waves.

Electromagnetic spectrum (radio-waves, micro-waves, infra-red, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.

### Unit VI : Optics

Ray Optics - Reflection of light; spherical mirrors; mirror formula, Refraction of light- total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lenses formula, lens-makers formula, Newton's relation: displacement method to find position of images (conjugate points), Magnification, power of lens, combination of thin lenses in contact. Combination of a lens and a mirror, Refraction and dispersion of light through a prism.

Scattering of light-blue colour of the sky and reddish appearance of the sun at sunrise and sunset. Elementary idea of Raman effect.

Optical instruments - Human eye, image formation and accommodation, correction of eye defects (myopia, hypermetropia, presbyopia and astigmatism) using lenses. Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.

Wave optics-wave front and Huygen's principle, reflection and refraction of plane wave at

a plane surface using wavefronts. Proofs of laws of reflection and refraction using Huygen's Principle, Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light.

Diffraction due to a single slit, width of central maximum. Resolving power of microscopes and astronomical telescopes. Polarization, plane polarized light, Brewster's law, uses of plane polarized light and polaroids.

### **Unit VII : Dual Nature of Matter and Radiation**

Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation- particle nature of light.

Matter waves, wave nature of particles, de-Broglie relation, Davisson- Germer experiment (experimental details should be omitted; only conclusion should be explained).

### **Unit VIII : Atomic Nuclei**

Alpha-particle scattering experiment, Rutherford's model of atom, Bohr's Model of atom; energy levels, Hydrogen spectrum. Continuous and characteristics of X-rays. Composition and size of nucleus; atomic masses, isotopes, isobars, isotones, Radioactivity (alpha, beta and gamma) particles/ rays and their properties, Radioactive decay law, Mass – energy relation, mass defect, binding energy/nucleon and its variation with mass no., nuclear fission and nuclear fusion.

### **Unit IX : Electronic Devices**

Energy bands in solids, conductors, insulators and semiconductors, semiconductor diode, I-V characteristics in forward and reverse bias, diode as a rectifier; I-V characteristics of LED, photo diode, solar cell and Zener diode; Zener diode as a voltage regulator, Junction transistors and its action; characteristics of a transistor, transistor as an amplifier (common emitter configuration and oscillator (common emitter). Logic gates (OR, AND, NOT), concept of NAND and NOR gates, Transistor as a switch.

### **Unit X : Communication System**

Elements of communication system (block diagram only), Band width of signals (speech, T.V and digital data); bandwidth of transmission medium, propagation of electromagnetic waves in the atmosphere, sky and space wave propagation.

Need for modulation; Production and detection of an amplitude modulated wave.

**Practicals : 30 marks**

**External: 20**

**Internal:10**

Every student will perform at least 15 experiments (7 from section A & 8 from section B). The activities mentioned here should be for the purpose of demonstration. One project of three marks is to be carried out by the students.

**Evaluation Scheme for Practical Examination:**

- One experiment from each of the two sections = 10 marks
- One activity from each of the two sections (2 activities in total) =  $2+2= 04$  marks
- Record of one Investigatory Project and viva based on Project = 02 marks
- Practical Record of experiments and activities = 02 marks
- Viva-voce on experiments and activity = 02 marks

**Total Marks = 20**

**Section – A**

**Experiments:**

1. To determine resistance per cm. of a given wire by plotting a graph of pot. difference vs. current (Ohm's law).
2. To find resistance of a given wire using metre bridge and hence determine the specific resistance of its material.
3. To verify the laws of combination (series/parallel) of resistance using a metre bridge.
4. To compare the e.m.f of two given primary cells using potentiometre.
5. To determine internal resistance of a given primary cell using potentiometre.
6. To determine resistance of a galvanometre by using half deflection method and also find its figure of merit.
7. To convert the given galvanometre (of known resistance and figure of merit) into an ammetre and voltmeter of desired range and to verify the same.
8. To find the frequency of the a.c. mains with a Sonometre.

**Activities:**

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance voltage (AC/DC), current (AC) and check continuity of a given circuit using multi metre.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To study the variation in potential drop with length of a wire for a steady current.
5. To draw the diagram of a given open circuit comprising at least a battery, rheostat, key;

ammeter and voltmeter. Make the components that are not connected in proper order and correct the circuit and also circuit diagram.

### Section – B

#### Experiment:

1. To find the focal length of a convex mirror, using a convex lens.
2. To find the focal length of a concave lens using a convex lens.
3. To find the value of  $v$  for different values of  $u$  in case of a concave mirror and also to find its focal length.
4. To find the focal length of a convex lens by plotting a graph between  $u$  and  $v$  or between  $1/u$  and  $1/v$ .
5. To determine angle of minimum deviation ( $d_m$ ) for a given prism by plotting a graph between angle of incidence and angle of deviation ( $d_m$ ).
6. To determine refractive index of a glass slab using a traveling microscope.
7. To find refractive index of a liquid using I) concave mirror II) convex lens and plane mirror.
8. To draw the characteristics of a common-emitter npn or pnp transistor and to find out the values of current and voltage gains.
9. To draw the I-V characteristics curve of a p-n junction in forward bias and reverse bias.
10. To draw the characteristic curve of a zener diode and to determine its reverse break down voltage.

#### Activities:

1. To study effect of intensity of light by varying distance of the source on an L.D.R.
2. To identify a diode, a LED, a transistor, and IC, a resistor and a capacitor from mixed collection of such items.
3. Use of multimeter to i) identify base of transistor ii) Distinguish between npn and pnp-transistors iii) see the unidirectional flow of current in case of a diode and an LED. iv) Check whether a given electronic component (e.g. diode, transistor or IC) is in working order.
4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
5. To observe polarization of light using two polaroids.
6. To observe diffraction of light due to a thin slit.
7. To study the size and nature of the image formed by i) convex lens, ii) concave mirror, on a screen by using a candle and screen for different distances of the candle from the lens/mirror.
8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

### Investigatory Projects:

1. To investigate whether the energy of a simple pendulum is conserved.
2. To determine the radius of gyration about the centre of mass of a scale used as a bar pendulum.
3. To investigate changes in the velocity of a body under the action of a constant force and determine its acceleration.
4. To compare effectiveness of different materials as absorbers of sound or heat.
5. To determine the wave length of laser beam by diffraction.
6. To study various factors on which the internal resistance, emf of a cell depends.
7. To construct a time switch and study dependence of its time constant on various factors.
8. To study infrared radiations emitted by different sources using photo-transistor.
9. To compare effectiveness of different materials and insulators.
10. To design an automatic traffic signal system using suitable combination of logic gates.
11. To study luminosity of various electric lamps of different powers and make.
12. To compare the Young's modulus of elasticity of different specimens of rubber and also draw their elastic hysteresis curve.

**Book Suggested:** A Textbook of Physics for class XII published by NCERT, New Delhi.

# CHEMISTRY

Maximum Marks: 100

Theory: Marks 70

Time: 3 hour

Practicals: Marks 30

Unit I	Solid State	4 marks
Unit II	Solutions	5 marks
Unit III	Electrochemistry	5 marks
Unit IV	Chemical Kinetics	5 marks
Unit V	Surface Chemistry	4 marks
Unit VI	General Principles and Processes of Isolation of Elements	3 marks
Unit VII	p-Block Elements	8 marks
Unit VIII	d- and f- Block Elements	5 marks
Unit IX	Coordination Compounds	3 marks
Unit X	Haloalkanes and Haloarenes	4 marks
Unit XI	Alcohols, Phenols and Ethers	4 marks
Unit XII	Aldehydes, Ketones and Carboxylic Acids	6 marks
Unit XIII	Organic Compounds containing Nitrogen	4 marks
Unit XIV	Biomolecules	4 marks
Unit XV	Polymers	3 marks
Unit XVI	Chemistry in Everyday Life	3 marks

## Unit-I: SOLID STATE

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous solids and crystalline solids (elementary idea only), unit cell in two dimensional & three dimensional lattices, packing efficiency, calculation of density of unit cell, packing in solids, voids, number of atoms per unit cell in a cubic unit cell, point defects. Properties of solids (electrical, magnetic & dielectric), Band theory of metals, conductors, semi-conductors and insulators and n & p type semiconductors.

## Unit-II: SOLUTIONS

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties: relative lowering of vapor pressure of a solution, Raoult's law, elevation of boiling point, depression in freezing point temperature and osmotic pressure), determination of molecular masses using colligative properties. Abnormal molecular mass, van't Hoff factor and calculations involving it..

## Unit-III: ELECTROCHEMISTRY

Redox reactions, conductance in electrolytic solutions, specific conductivity, molar

conductivity, variation of conductivity with concentration, Kohlrausch's law and its applications Electrolysis and laws of electrolysis (elementary idea), dry cell- electrolytic cells and galvanic cells; lead accumulator, emf of a cell, standard electrode potential, Nernst equation and its application to chemical cells, relation between Gibb's energy change and emf of a cell, fuel cells, corrosion

#### **Unit-IV: CHEMICAL KINETICS**

Rate of reaction (average and instantaneous rate of a reaction), factors affecting rate of reactions: (concentration, temperature, catalyst), rate law, specific rate constant and order, molecularity of a reaction, integrated rate expression of zero and first order reactions and their derivations, half life period. Concept of collision theory (elementary idea, no mathematical derivation), Activation energy, Arrhenius equation.

#### **Unit-V: SURFACE CHEMISTRY**

Adsorption- physical and chemical adsorption, factors affecting adsorption of gases on solids; Catalysis: homogeneous and heterogeneous, activity & selectivity. Enzyme catalysis, Colloidal state: distinction between true solution, colloids and suspensions. Types of colloids- lyophilic and lyophobic, multimolecular, macromolecular and associated colloids (micelles), properties of colloids: Tyndall effect, Brownian movement, Electrophoresis, Coagulation, Emulsions-types of emulsions. Elementary idea about nanomaterials.

#### **Unit-VI: GENERAL PRINCIPLES AND PROCESSES OF ISOLATION OF ELEMENTS**

Principles and methods of extraction: concentration, oxidation, reduction, electrolytic method & refining; occurrence & principles of extraction of aluminium, copper, zinc and iron.

#### **Unit- VII: p-BLOCK ELEMENTS**

**Group 15 Elements:** General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; nitrogen: preparation, properties & uses. Compounds of nitrogen: preparation & properties of ammonia and nitric acid, oxides of nitrogen (structure only), Phosphorus – allotropic forms; compounds of phosphorus: preparation & properties of phosphine, halides ( $\text{PCl}_3$ ,  $\text{PCl}_5$ ) and oxo- acids (elementary idea only).

**Group 16 Elements:** General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; dioxygen: preparation, properties & uses. Classification of oxides; ozone. Sulphur- allotropic forms; compounds of sulphur: preparation, properties & uses of  $\text{SO}_2$  and Sulphuric acid: industrial process of manufacture, properties and uses, other oxides and oxoacids of sulphur (structures only).

**Group 17 Elements:** General introduction, electronic configuration, oxidation states, trends in physical and chemical properties; compounds of halogens-preparation, properties and uses of Chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structures only)

**Group 18 Elements:** General introduction, electronic configuration, occurrence, trends in physical & chemical properties & Uses.

#### **Unit- VIII: d and f-BLOCK ELEMENTS**

General introduction, electronic configuration, occurrence and characteristics of the transition metals, general trends in properties of first row transition metals (metallic character, IE, electrode

potential, oxidation state, ionic radii, catalytic properties, colored ions, complex formation, magnetic properties, interstitial compounds, alloy formation). Preparation and properties of  $K_2Cr_2O_7$  and  $KMnO_4$ .

**Lanthanides:** electronic configuration, oxidation state, chemical reactivity and lanthanide contraction and its consequences.

**Actinides-** electronic configuration, oxidation states and comparison with lanthanoids.

### Unit- IX: CO-ORDINATION COMPOUNDS

**Co-ordination compounds:** Introduction, ligands, co-ordination number, color, magnetic properties and shapes, IUPAC nomenclature of mononuclear co-ordination compounds. Bonding (Werner's theory, VBT and CFT); structural and stereoisomerisms, importance of coordination compounds in qualitative inclusion of analysis, extraction of metals and biological systems.

### Unit-X: HALOALKANES AND HALOARENES

**Haloalkanes:** Nomenclature, nature of C-X bond, physical & chemical properties, mechanism of substitution reactions. Stability of carbocations, R-S and d-l configurations.

**Haloarenes:** Nature of C-X bond, substitution reactions (directive influence of halogens for monosubstituted compounds only), Stability of carbocations, R-S and D-L configurations

Uses and environmental effects of- dichloromethane, trichloromethane, tetrachloromethane, iodoform, freon, and DDT.

### Unit- XI: ALCOHOLS, PHENOLS AND ETHERS

**Alcohols:** Nomenclature, methods of preparation, physical & chemical properties (of primary alcohols only), identification of primary, secondary & tertiary alcohols; mechanism of dehydration of alcohols, uses, some important compounds – methanol and ethanol.

**Phenols:** Nomenclature, methods of preparation, physical & chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

**Ethers:** Nomenclature, methods of preparation, physical & chemical properties and uses.

### UNIT- XII: ALDEHYDES, KETONES AND CARBOXYLIC ACIDS

**Aldehydes and Ketones:** Nomenclature, nature of carbonyl group, methods of preparation, physical & chemical properties & mechanism of nucleophilic addition reaction to C = O group, reactivity of alpha hydrogen in aldehydes, uses.

**Carboxylic Acids:** Nomenclature, acidic nature, methods of preparation, physical & chemical properties and uses

### UNIT- XIII: ORGANIC COMPOUNDS CONTAINING NITROGEN

**Amines:** Nomenclature, classification, structure, methods of preparation, physical & chemical properties, uses, identification of primary, secondary & tertiary amines.

**Cyanides and Isocyanides:** Structures of cyanide and isocyanide groups, nomenclature, preparation, physical properties and chemical reactions.

**Diazonium Salts:** Preparation and chemical reactions (mechanism of diazotization), and importance in synthetic organic chemistry.

#### UNIT- XIV: BIOMOLECULES

**Carbohydrates:** Classification (aldoses and ketoses), monosaccharides: Glucose, fructose: structure, preparation and chemical reactions; oligosaccharides (sucrose, lactose & maltose) Polysaccharides: (starch, cellulose and glycogen); importance.

**Proteins:** Elementary idea of amino acids: peptide bond, polypeptides and primary, secondary, tertiary and quaternary structure of proteins (Qualitative idea only). denaturation of proteins; enzymes, lipids & hormones, their classification & functions.

**Nucleic Acids:** DNA and RNA (purines and pyrimidines, nucleosides, nucleotides and fragments up to four nucleotides).

**Vitamins:** Classification and functions, sources and deficiency diseases.

#### UNIT- XIV: POLYMERS

Natural & synthetic polymers, methods of polymerization (addition and condensation), copolymerization, and some important polymers: natural and synthetic like polythene, nylon, Bakelite, polyesters and rubber. Biodegradable and non- biodegradable polymers.

#### Unit-XVI: CHEMISTRY IN EVERYDAY LIFE

- i) **Chemicals in medicine and health care-** analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, anti-fertility drugs, anti-histamines, antibiotics, antacids.
- ii) **Chemicals in food-** preservatives, artificial sweetening agents.
- iii) **Cleansing agents** – Soaps and detergents, cleansing action.

#### PRACTICALS

External: 20

Internal:10

#### Evaluation Scheme for Practical Examination:

- Volumetric analysis	=	06 marks
- Salt Analysis	=	06 marks
- Content based experiment	=	04 marks
- Class record, Project work and viva	=	04 marks
		<b>Total = 20 marks</b>

#### A. SURFACE CHEMISTRY

- i) Preparation of one lyophilic and one lyophobic sol  
Lyophilic sol-starch, egg albumin and gum  
Lyophobic sol-aluminium hydroxide, ferric hydroxide, arsenious sulphide.
- ii) Study of the role of emulsifying agents in stabilizing the emulsion of different oils.

## B. CHEMICAL KINETICS

- i) Effect of concentration and temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid.
- ii) Study of reaction rates of any one of the following:
  - a) Reaction of iodide ions with hydrogen peroxide at room temperature using different concentration of iodide ions.
  - b) Reaction between potassium iodate ( $\text{KIO}_3$ ) and sodium sulphite ( $\text{Na}_2\text{SO}_3$ ) using starch solution as indicator (clock reaction).

## C. THERMOCHEMISTRY

Any one of the following experiments:

- i) Enthalpy of dissolution of  $\text{CuSO}_4$  or  $\text{KNO}_3$ .
- ii) Enthalpy of neutralization of strong acid ( $\text{HCl}$ ) and strong base ( $\text{NaOH}$ ).
- iii) Determination of enthalpy change during interaction (Hydrogen bond formation) between acetone & chloroform.

## D. ELECTRO CHEMISTRY

- i) Variation of cell potential in  $\text{Zn}/\text{Zn}^{2+} // \text{Cu}^{2+}/\text{Cu}$  with change in concentration of electrolytes ( $\text{CuSO}_4$  or  $\text{ZnSO}_4$ ) at room temperature.

## E. CHROMATOGRAPHY

- i) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of  $R_f$  values.
- ii) Separation of constituents present in an inorganic mixture containing two cations only (constituents having wide difference in  $R_f$  values to be provided)

## F. PREPARATION OF INORGANIC COMPOUNDS

- i) Preparation of double salt of ferrous ammonium sulphate or potash alum.
- ii) Preparation of potassium ferric oxalate.

## G. TEST FOR THE FUNCTIONAL GROUPS PRESENT IN ORGANIC COMPOUNDS

Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (primary) groups.

## H. Study of carbohydrates, fats and proteins in pure form and detection of their presence in given foodstuffs.

## I. Determination of concentration/ molarity of $\text{KMnO}_4$ solution by titrating it against a standard solution of:

- i) oxalic acid
- ii) ferrous ammonium sulphate.

## J. Qualitative Analysis

Determination of one cation and one anion in a given salt (insoluble salts to be excluded):

**Cations:**  $\text{Pb}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{As}^{3+}$ ,  $\text{Al}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Co}^{2+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Sr}^{2+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{NH}_4^+$

**Anions:**  $\text{CO}_3^{2-}$ ,  $\text{S}^{2-}$ ,  $\text{SO}_3^{2-}$ ,  $\text{SO}_4^{2-}$ ,  $\text{NO}_2^-$ ,  $\text{NO}_3^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$ ,  $\text{PO}_4^{3-}$ ,  $\text{C}_2\text{O}_4^{2-}$ ,  $\text{CH}_3\text{COO}^-$

### PROJECT WORK

Wherever feasible may include

1) Model Preparation

2) Investigatory Project

- To prepare rayon thread from filter paper by cupra ammonium process.
- Determine the oxalate content of Guava fruits at different stages of ripening.
- Study of insecticides and pesticides in various fruits and vegetables.
- To determine the amount of casein present in different samples of milk from different sources.
- Preparation of soyabean milk and its comparison with natural milk.
- To determine the presence of adulterants in common foods such as sugar, butter, oil, red chilly paper, turmeric powder, rice.
- Prevention of rusting of iron by using cathode protection method.

3) Science Exhibits.

4) Participation in Science Fairs

**Book Suggested:** Textbook of Chemistry for class XII published by NCERT, New Delhi

# BIOLOGY

Maximum Marks: 100

Theory: Marks 70

Time: 3 hour

Practicals: Marks 30

## SECTION A (Botany)

Marks: 35

### Unit-I: Reproduction in Flowering Plants

Marks:07

**Asexual Reproduction:** Vegetative propagation in plants, micropropagation.

**Sexual Reproduction:** Flower structure, Development of male & female gametophytes. Pollination: types, agencies & examples, Out breeding devices. Pollen- Pistil interaction, Double fertilization, Post fertilization events, Development of endosperm, embryo, seed and fruit. Special modes: apomixis and polyembryony, significance of seed & fruit formation.

### Unit-II: Genetics

Marks 09

- Heredity and variation
- Mendelian inheritance, Deviations from Mendelism: incomplete dominance, co-dominance, Multiple alleles, Pleiotropy, Chromosomal theory of inheritance, Elementary idea of polygenic inheritance, Chromosomes & genes,
- Search for genetic material & DNA as genetic material: Structure of DNA & RNA, DNA packaging, DNA Replication (Semiconservative), Central dogma, Protein Biosynthesis: Transcription, translation, genetic code, Gene expression and regulation (lac-operon).

### Unit-III: Biology and Human welfare

Marks: 07

- **Plant breeding:** Introduction, steps in plant breeding and application of plant breeding, and single cell protein, Biofortification.
- **Tissue culture:** Cellular totipotency, technique and application of tissue culture
- **Microbes in Human Welfare:** in household food processing, industrial production, sewage treatment, Production of energy (Biogas), biocontrol agent (Biopesticides) & Biofertilizers.
- Genetically Modified organism- Bt crops
- Biopiracy and patents.

### Unit- IV: Ecology and Environment

Marks: 12

**Meaning of ecology, environment, habitat and niche:** Organisms and environment.

**Population and ecological adaptations:** Population Interactions-mutualism, competition, predation, parasitism. Population attributes-growth, birth rate and death rate, age distribution.

**Ecosystems:** Patterns, Components, energy flow, nutrient cycling (carbon and phosphorus), decomposition and productivity. Pyramids of number, biomass, energy. Ecological succession. Ecological Services: Carbon fixation, Pollination, Oxygen release.

**Biodiversity and its conservation:** Threats to, and need for biodiversity conservation. Hotspots, endangered organisms, extinction, Red Data Book. Biodiversity conservation-biosphere reserves, national parks and sanctuaries.

**Environmental Issues:** Air and water pollution and their control, solid waste management, agrochemicals and their effects, Radioactive waste management, Green house effect and global warming, Ozone depletion in stratosphere, Deforestation, Any three case studies as success stories addressing environmental issues.

## SECTION B (Zoology)

35 Marks

### Unit-I : Reproduction

Marks 11

- i) **Asexual Reproduction:** Uniparental, modes: binary fission, sporulation, budding, gemmule, fragmentation, regeneration.
- ii) **Human Reproduction-** Male and female reproductive systems, Microscopic anatomy of testis & ovary; Gametogenesis (spermatogenesis & oogenesis. Menstrual cycle), Fertilization, embryo development upto blastocyst formation, implantation; Pregnancy and placenta formation (elementary idea), Parturition (elementary idea) and Lactation (elementary idea).
- iii) **Reproductive Health:** Need for reproductive health & prevention of Sexually Transmitted Diseases (STD), Birth control- need & methods, Contraception and Medical Termination of Pregnancy (MTP), Amniocentesis, Infertility & assisted reproductive technologies: IVF, ZIFT, GIFT (Elementary idea for general awareness).

### Unit-II: Genetics and Evolution

Marks 12

- Sex determination in humans, birds and honeybee.
- Inheritance pattern of Hemophilia and Color blindness in human beings.
- Mendelian Disorders in humans: Chromosomal disorders in humans, Down's syndrome, Turner's & Klinefelter's syndromes.
- Genome and Human Genome project.
- DNA fingerprinting.
- Origin of life: Theories & evidences with special reference to Darwin & Modern Synthetic theory of evolution, Hardy – Weinberg's principal. Adaptive radiation.
- Origin and evolution of Man.

### Unit-III : Biology and Human Welfare

Marks 07

- **Health and Disease:** Basic concepts of immunology, vaccines; pathogens, parasites causing human diseases (Typhoid, Hepatitis, Malaria, Filariasis, Ascariasis, Common Cold, Amoebiasis, Ring Worm); Cancer, HIV and AIDS.
- **Insects & human welfare:** Silk, honey, lac.
- Adolescence, drug & alcohol abuse.
- Poultry, Dairy Farming

### Unit IV: Biotechnology and its Application

Marks 05

- i) Genetic Engineering (Recombinant DNA technology), cloning
- ii) Applications in Health: Human insulin & vaccine production, gene therapy
- iii) Biosafety issues.

**Botany based Practicals: 15 Marks**

- i) Internal assessment: 05 marks
- ii) External assessment: 10 marks

**Zoology based Practicals: 15 Marks**

- i) Internal assessment: 05 marks
- ii) External assessment: 10 marks

**List of Experiments**

1. Study pollen germination on a slide.
2. Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity of soil. Correlate with the kinds of plants found in them.
3. Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organisms.
4. Study the presence of suspended particulate matter in air at the two widely different sites.
5. Study of plant population density by quadrat method.
6. Study of plant population frequency by quadrat method.
7. Prepare a temporary mount of onion root tip to study mitosis.
8. To study the effect of the different temperatures and three different pH on the activity of salivary amylase on starch.

**Study/observation of the following (Spotting)**

1. Flowers adapted to pollination by different agencies (wind, insect)
2. Pollen germination on stigma through a permanent slide.
3. Identification of stages of gamete development i.e. T.S. testis and T.S. ovary through permanent slides. (from any mammal)
4. Meiosis in onion bud cell or grasshopper testis through permanent slides.
5. T.S. of blastula through permanent slides.
6. Mendelian inheritance using seeds of different color / size of any plant.
7. Prepared pedigree charts of genetic traits such as rolling of tongue, blood groups, widow's peak, and color blindness.
8. Exercise on controlled pollination-Emasculation, tagging and bagging.
9. Identification of common disease causing organisms like Ascaris, Entamoeba, Plasmodium, Ringworm through permanent slides or specimens. Comment on symptoms of diseases that they cause.
10. Two plants and two animals found in xerophytic conditions. Comment upon their morphological adaptations.
11. Plants and animals found in aquatic conditions. Comment upon their morphological adaptations.

**Book Prescribed:** A Textbook of Biology for class XII published by NCERT, New Delhi.

# BIOTECHNOLOGY

Maximum Marks: 100

Time: 3 hours

Theory: Marks 70

Practicals: Marks 30

External : 20

Internal : 10

## Protein and Gene Manipulation

### Unit I: Protein Structure and Engineering

Marks 15

- Introduction to the world of Proteins: Introduction, Nature of proteins
- 3-D Shape of Proteins: Primary, Secondary, Tertiary and Quaternary Structures
- Structure function relationship in Proteins: Enzymes (lock and key model, induced fit model only), Nature of interactions between enzymes and substrate (theoretical approach only)
- Purification of Proteins
- Characterization of Proteins: Peptide Mapping, 2-D gel electrophoresis, Mass spectrometry
- Protein based products: Blood based products, Vaccines, Enzymes, Antibodies, Hormones & Growth factors, Industrial enzymes, Non-catalytic proteins, Nutraceutical proteins
- Proteomics: Basic idea only

### Unit II: Recombinant DNA Technology

Marks 15

- Introduction
- Tools of rDNA Technology: Vectors (Plasmid, Cosmid, Phage, BAC, YAC), Restriction enzymes and applications (DNA fingerprinting, forensic use and paternity only), Ligase, DNA (isolation and characterization)
- Making Recombinant DNA
- DNA Library (Elementary idea)
- Introduction of Recombinant DNA into host cells
- Identification of recombinants
- Polymerase chain reaction
- DNA Probes: Definition
- Hybridization Techniques: Southern, Northern and western blotting (brief idea)
- DNA Sequencing (Brief idea)

### Unit III: Genomics and Bioinformatics

Marks 10

- Introduction: Genomics
- Genome Sequencing Projects: Human genome project, ELSI
- Genome similarity, SNP's and comparative genomics

- Functional Genomics: definition only
- Introduction to Bioinformatics
- Information Sources: Biological Databases (NCBI, Entrez and EMBL)- theoretical approach

## Cell Culture Technology

### Unit IV: Microbial Culture and Applications

**Marks 10**

- Introduction
- Microbial Culture Techniques: Types of cell culture (Batch and Continuous Culture), Nutrients for culture, culture procedure, physical parameters (pH, temperature, aeration), Equipments for culture
- Measurement and Kinetics of microbial growth
- Microbial growth measurement: Quantifying cell concentration
- Scale up of microbial process
- Isolation of microbial products
- Strain isolation and improvement
- Applications of microbial culture technology
- Bio-safety of genetically modified microbes

### Unit V: Plant Cell Culture and Applications

**Marks 10**

- Introduction
- Cell and Tissue Culture Techniques: Nutrient media, Plant cell culture (Protoplast culture), Plant tissue culture–Organogenesis and Somatic embryogenesis
- Applications of Cell and Tissue Culture: Micropropagation, Meristem culture, Embryo culture and somatic hybrids
- Gene Transfer Methods in Plants: Vector and Non-vector mediated
- Transgenic Plants with Beneficial Traits: Herbicide resistance, stress tolerance, disease resistance, increased nutrient content, commercial application of transgenic plants
- Bio-safety of genetically modified plants

### Unit VI: Animal Cell Culture and Applications

**Marks 10**

- Introduction
- Animal Cell Culture Techniques: Primary and secondary cell cultures, media, serum, cryopreservation, thawing
- Cell lines: Types of cell lines (finite and continuous), physical environment for culturing cells, characterization of cell lines, equipment required
- Applications of Animal Cell Culture: Transgenic products by animal cells (t-PA, Factor VIII, monoclonal antibodies)
- Stem Cell Technology: Elementary idea of embryonic, adult and germ stem cells

## PRACTICALS

Time: 3 Hours

Marks 30

Note: Every Student shall do the following experiments during the academic session.

### LIST OF EXPERIMENTS

1. Isolation of genomic DNA from bacteria/RBC.
2. Isolation of plasmid DNA from bacteria.
3. Analysis of genomic or plasmid DNA using agarose gel electrophoresis.
4. Multiplication of any medicinal/aromatic plant through any tissue culture technique.
5. Data retrieval and data base search using internet site NCBI.
6. Microscopic examination of growing mammalian cells.
7. Download a DNA and protein sequence from internet, analyze and comment on it.
8. Production and estimation of ethanol from microbial culture.
9. Culturing bacteria (*E.coli*) under laboratory conditions.
10. Project work.
  - a. Lab visits, sum up the list of equipments, facilities, conditions and their utilities.
  - b. Interaction with a faculty/Ph. D Scholar during visit and submit a report on the work that is being carried by the duo.
  - c. Access the internet at [www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov) or [www.google.com](http://www.google.com) and download the articles from any of the discipline pertaining to syllabus and critically comment of the downloaded articles.
  - d. Filed Visit to plant gene banks of IIM (Jammu/Srinagar, or DRDO (Leh) or SKUAST/J K or universities of J and K

### SCHEME OF EVALUATION

Internal assessment: 10 marks

External examination: 20 marks

**Internal Assessment: 10 marks**

A. Project work:

(i) Write up: 06

(ii) Viva: 04

**External Examination: 20 marks**

Time: 3 Hours

The Scheme of evaluation at the end of the session will be as under:

B. One experiment: 12

Practical record: 04

Viva on Practicals: 04

**Total 20**

### RECOMMENDED BOOKS:

A textbook of BIOTECHNOLOGY for class XII by Foundation Books Pvt Limited, New Delhi

# MICROBIOLOGY

**Maximum Marks: 100**

**Theory : 70 Marks**

**Time: 03 hr**

**Practical: 30 Marks**

**External : 20 Marks**

**Internal : 10 Marks**

## **Unit I: Host Microbe Interaction**

**Marks 11**

**Chapter I:** Host-microbe relationship and disease process: mutualism, commensalism and parasitism. Pathogen virulence, infection, pathogenicity and disease. Classification of diseases like infectious, non-infectious, congenital, communicable, non-communicable, contagious and zoonotic.

**Chapter II:** Epidemiology: Definition, Carrier state, Prevalence, Incidence of diseases, Case fatality, transmission of diseases by contact, water, food, soil and air. Sporadic, epidemic, endemic and pandemic.

## **Unit II: Bacterial Genetics**

**Marks 12**

**Chapter III:** Historical background, DNA structure, replication, RNA types, plasmids and transposons, genetic code, protein synthesis (transcription, translation), *lac* operon, Mutation, recombination (conjugation, transduction and transformation).

**Chapter IV:** Gene cloning, definition and steps. Vectors (plasmid, bacteriophage, cosmid)

## **Unit III: Immunology**

**Marks 12**

**Chapter V:** Introduction and history of Immunology. Immunity: specific and non specific, innate and acquired. Antigens and haptens and their characteristics. Antibody (polyclonal and monoclonal).

**Chapter VI:** Organs and cells of immune system. Humoral and cell mediated immunity. Structures and classes of immunoglobulin, Phagocytosis, Complement system, Hypersensitivity, Vaccines, Interferons.

## **Unit IV: Applied Microbiology**

**Marks 20**

**Chapter VII:** Environmental Microbiology

**Air:** Microorganisms found in air. Methods of controlling microorganisms in air.

**Soil:** Microorganisms in soil, Brief outline of bio- geochemical cycles (carbon, nitrogen, phosphorus and sulphur).

**Water:** Microflora of fresh water and marine environment, Water pollution, Presumptive coliform count. Bacteriological standards of safe drinking water. Sewage Treatment. Definition of biodegradation, bioremediation, biocontrol and biosafety. .

### Chapter VIII: Food Microbiology

Microorganisms commonly found in food and food products, Food poisoning, Prevention of food borne diseases, Pasteurization of milk. Definition of fermentation.

#### Unit V: Diseases

Marks 15

Definition, Etiology, transmission, Pathogenesis, diagnosis and control of Human diseases (AIDS and tuberculosis), Animal diseases (Rabies and Brucellosis) and Plant diseases (Apple scab and Rice blast).

#### Practical

1. Sterilization by autoclave and hot air oven
2. Media preparation: Nutrient broth and agar
3. Demonstration of motility by hanging drop method.
4. Demonstration of colony characteristics
5. Lactophenol, cotton blue, staining of fungi.
6. Visit to govt. institutions (microbiology laboratories) for demonstration and working of refrigerator, deep freeze, bacteriological loop, ELISA reader, thermal cycler, fermenter etc.
7. Project work with ten page write up on any one : like collection and transport of clinical sample, serum separation, sample preservation, antibiotic sensitivity test.

# TRAVEL, TOURISM AND HOTEL MANAGEMENT

Max Marks : 100

Time : 03 Hours

## Part A: TRAVEL & TOURISM MANAGEMENT (ADVANCED)

- Unit I** Travel Agency & Tour Operator – Definition & Differentiation, Origin, History & Development, Types of Travel Agency – Group, Retail, Outbound, Inbound & Independent Tour Operations. **Marks 10**
- Unit II** Functions of Travel & Tour Operations: Ticketing, Reservations, Itinerary preparation, Tour packaging – Concept, Organisations & Agencies in Tour packaging, Various Types of Tour packages. **Marks 10**
- Unit III** Significance of Linkages, Networking & Coordination in travel trade, Coordination with Accommodation & Transport Sector, Public sector tourism organizations, Shopping enterprises, Various Concessions, Discounts & other Incentives offered by Hospitality, Transportation & other sectors of tourism to Travel agents & Tour operators. **Marks 10**
- Unit IV** Concept of Carrying Capacity, Meaning and Concept of Tourism Impacts, Types of Impacts; Physical, Socio-cultural, Economic, Tourism Organizations: PATA and IATA, MAP WORK: Location of important Tourist Destinations of J & K in the tourist map. **Marks 10**
- Unit V** Introduction and Concept of Marketing, Approaches to marketing, components of marketing -mix with special reference to tourism. **Marks 10**

## Part B: HOTEL MANAGEMENT (ADVANCED)

- Unit I FRONT OFFICE** **Marks 10**  
Front Office operations, Organization Chart, Staffing, Scheduling, Work Shifts, Job Specifications and Job Descriptions of Front Office Personnel.
- Unit II HOUSE KEEPING** **Marks 10**  
Meaning and Definition of House keeping, Importance of House keeping, Responsibility of House keeping Department, a Career in House keeping Department.
- Unit III FOOD AND BEVERAGE** **Marks 14**  
Introduction to Food & Beverage Industry, Types of Catering Establishments, Introduction to Food and Beverage Operations, F& B service areas in a Hotel, Restaurant, Coffee Shops, Room service, Bars, Banquet, Discotheques, Still rooms, Grill room, Snack bar, Executive Lounges, Business Centres and Night Clubs

#### **Unit IV COMMUNICATION SKILLS**

**Marks 10**

Verbal and Non -verbal, Telecommunication Skills ;Telephonic situations/ Queries Handlings, e-Telecommunication.

#### **Unit V ACCOUNTING**

**Marks 06**

Journal, Ledger and Cash book, Trading account, Profit & Loss Account and Balance sheet.

#### **REFERENCES:**

1. Travel Agency & Tour Operations: Concepts and Principles – Jagmohan Negi.
2. Tourism Development and its Impacts – S P Bansal, Sai Printographer, New Delhi
3. Tourism and Travel Concepts and Principles-Jagmohan Negi.
4. Front office training manual by Sudhir Andrews, Tata McGraw Hills

# BIOCHEMISTRY

Maximum Marks: 100

Theory: Marks 70

Time: 3 hours

Practicals: Marks 30 (External : 20 and Internal : 10)

**Unit-I : Mammalian Hormones derived from lipids 07 marks**

General introduction to hormones, Physiological and Biochemical role of Steroidal hormones: Cortisol, Cortisone, Aldosterone, Testosterone, Progesterone and Cholecalciferol; Eicosanoids: Prostaglandins, Thromboxanes and Leucotrienes.

**Unit-II: Hormones derived from Aminoacids, Peptides and Proteins 07 marks**

Physiological and biochemical role of: Thyroxine ( $T_4$  and  $T_3$ ), adrenalin and nor-adrenalin, Vasopressin, ACTH, Angiotensin and Erythropoietin, Insulin, Glucagon, growth hormone, parathormone, and calcitonin.

**Unit-III: Enzymes 07 marks**

Introduction to a biochemical reaction. Cofactors and coenzymes. Nature and classification of enzymes, giving at least two examples in each group. Enzyme assay, unit of activity. Factors affecting enzyme activity, e.g. effect of substrate, pH, temp., activators and inhibitors. Michaelis-Menten Equation and Significance of  $K_m$ .

**Unit-IV: Lipid Metabolism 07 marks**

Action of lipases, activation and transport of fatty acids,  $\beta$ -oxidation, ketosis. Malonyl SCOA formation and Biosynthesis of fatty acids. Brief account of cholesterol biogenesis and arterosclerosis.

**Unit-V: Nucleic acid Metabolism 07 marks**

Biosynthetic pathways for purines and pyrimidine-nucleotides. Salvage pathways. Hyperuricemia gout and Lesch-Nyhan syndrome. Synthesis of deoxyribo nucleoside diphosphates and triphosphates.

**Unit-VI: Carbohydrate Metabolism – Part I 07 marks**

Interconversion of hexoses (Fructose, Galactose, Mannose). Aerobic and anaerobic glycolysis; Aspartate-Malate and  $\alpha$ -glycero phosphate Shuttle pathways. Hexose monophosphate/Pentose Phosphate Reductive Pathway. Glucuronic acid pathway. Glycogenesis/starch synthesis and glycogenolysis.

**Unit-VII: Carbohydrate Metabolism – Part II 07 marks**

Citric acid / Tricarboxylic acid cycle and its amphibolic role. Electron Transport Chain and bioenergetics. Gluconeogenesis and photosynthesis : ( $C_3$ ,  $C_4$  and CAM pathways).

**Unit-VIII: Metabolism of Amino acids**

07 marks

Deamination, transamination and decarboxylation. Metabolism of amino acids with special reference to metabolic/genetic disorders related to: phenylketonuria, alkaptonuria, albinism/tyrosinosis; Maple Syrup urine disease; Homo-cystinuria, Pentosuria. Urea Cycle.

**Unit-IX: DNA Replication and Transcription**

07 marks

DNA polymerases and their specific functions. DNA replication; leading and lagging strands. Okazaki fragments. Transcription : Initiation, DNA-dependent RNA polymerase, processing of mRNA in eukaryotes and concept of ribozymes, introns and exons. Post-transcriptional modifications including capping and tailing of m-RNA in eukaryotes. Drugs inhibiting transcription.

**Unit-X: Translation / Protein Biosynthesis**

07 marks

History of Codon concept; Redundancy of codons, wobble hypothesis, point mutations and silent mutation. Translation : activation of amino acids, formation of amino-acyl tRNAs, initiation, elongation and termination. Factors involved in transcriptional process. Drugs inhibiting translation.

**Laboratory Course**

30 marks

- Introduction to infectious diseases and handling of Biological samples.
- Collection of Urine and Blood samples aseptically.
- Qualitative analysis of human urine sample.
- Centrifugation : Basic principles and separation of plasma/sera.
- Colorimetry : Beer — Lambert's Law, use of electricity/battery-operated colorimeter
- Quantitation of blood/serum/plasma :
  - Glucose (o-Toluidine method)
  - Glucose urea (Diacetylmonooxime method)
  - Cholesterol (Zak Method)
  - Total Bilirubin (Diazotization method).

**Project work : Restrict to local area, selected families, for :**

- Urine analysis for : microscopic examination, albumin and Sugar :
- Serum glucose
- Serum Cholesterol
- Serum Bilirubin

# ENVIRONMENTAL SCIENCE

**Maximum Marks: 100**

**Theory: Marks 70**

**Time: 3 hours**

**Practicals: Marks 30**

**External : Marks 20**

**Internal : Marks 10**

The subject deals with the interdependence of living things within their environment and provides an insight into the orderly interplay of the factors influencing environmental change. The impact of human demands on renewable and non-renewable resources, and the limited availability of these resources in nature, have been linked to correlate with patterns of human behavior necessary to evolve a sustainable environmental paradigm.

## **AIMS:**

“Environment education should simultaneously attempt to create awareness, transmit information, teach knowledge, develop habits and skills, promote values, provide criteria and standards and present guidelines for problem solving and decision-making. It, therefore, aims at both cognitive and affective behavior modifications. The latter necessitates both classroom and field activities. This is an action-oriented, project centered and participatory process leading to self-confidence, positive attitudes and personal commitment to environment protection. Furthermore, the process should be implemented through an interdisciplinary approach.”

1. To acquire knowledge of the origin and functioning of the nature system and its correlation with the living world.
2. To develop an understanding that human beings, plants and animals are part of a natural phenomenon and are interdependent.
3. To appreciate the influence of human activity on the natural processes.
4. To develop awareness of the need and responsibility to keep the natural system in a condition that sustains life.
5. To develop sensitivity in personal attitudes to environmental issues.
6. To develop an understanding of how local environments contribute to the global environment.
7. To develop sense of responsibility and concern for the welfare of the environment and all life forms which share this planet.
8. To develop a sound basis for further study, personal development and participation in local and global environmental concerns.

## **1. Action on the Atmosphere:**

**10 marks**

- (a) Control of atmospheric pollution: methods; costing urgency, legislation; role of government (local and national); responsibility of industry; role of environmental organization.

- (b) Dilemma of developing countries: development/ pollution equation; lack of economic capacity to deal with atmospheric pollution; role of multinationals.
- (c) Satellite imagery as a mean of monitoring the global environment.
- (d) Moving towards urgent international action and changing attitudes to deal with the causes and consequence of the damage of the ozone layer.

## 2. Population and Conservation of Ecology

13 marks

- (a) Population dynamics: factors causing population change (birth between immigration and emigration); relation between the factor; age structure and its significance; population pyramids; survivorship curves; three general shapes R and K strategies.
- (b) Human populations (Malthusian model and demographic transition).
- (c) Population regulation: growth without regulation (exponential); simple population regulation (logistic growth curve); factors regulating population size (space, food and water, territories, predators, weather and climate, parasite and diseases, disasters and self-regulation).
- (d) Human population control: family planning; education; economic growth; status of women.
- (e) Threats to the ecosystem: habitat destruction; genetic erosion; loss of diversity; expanding agriculture; impound water; waste from human societies; increasing human consumption.
- (f) Conservation: importance; the critical state of Indian forests; conflicts surrounding forested areas- populations and trebles and their rights -tourism -poaching - roads - development projects - dams; scientific forestry and its limitations; social forestry; the role of the forest department; NGOs; joint forestry management; wild life - sanctuaries, conservation and management in India; Project Tiger as a case study in conservation.

## 3. Planning for Environmental Conservation and Protection

12 marks

- (a) Ecosystem analysis: understanding complex systems; critical and state variables as system indicator; indicators of inter-relationships; successions and systems resilience; predicting and assessing system responses to impacts and their interventions; rapid appraisal methods.
- (b) Human environment interaction: quality of life Vs. quality of environment; environmental issues and problems; role of belief and value; analyzing brief statement for underlying values; issues analysis - separating symptoms from problems; identifying the players and their positions; understanding interacting problems and identifying critical control points; problems analysis; identifying variables (human behaviors, values, ecological, etc); determining the relationships between variables; formulating questions for research; planning research; generating problems, solutions, briefs and specifications.
- (c) Evaluation and assessment of impacts: approaches and techniques of environment and social impact assessment; environment impact assessment as a planning tool and a decision making instrument; interpreting environment impact assessments.

## 4. Technology and Environment

12 marks

- (a) Technological evolution and models: hi-tech; low-tech; intermediate; appropriate; traditional; interaction between technology, resources environment and development; energy as a binding factor; the need for reorienting technology.

- (b) Renewable energy: limitations of conventional sources; sources of renewable energy and their features (solar, wind, biomass, micro-hydel and muscle power)
- (c) Health: incidents of disease as an indicator of the health of the environment; prevention of diseases by better nutrition, sanitation, access to clean water, etc.; communicable and non-communicable diseases; techniques of low cost sanitation; policy and organization to provide access to basic health service for all; the role of traditional and local systems of medicine.
- (d) Biotechnology: potential; limitations.

## 5. Pollution

13 marks

- (a) Disruption of nutrient cycles and habitats: atmospheric pollution; human activities that change the composition of the atmosphere; connection between pollution and development; local and global effects (greenhouse effect, ozone depletion) and their impact on human life; burning of fossil fuel products- effect on ecosystem and human health.
- (b) Pollution control approaches-prevention and control: as applied to fossil fuel burning; the role of PCBs; industrial pollution control-principles-devices-costs-policy incentives; combating global warming; third world interest; impact on economic growth. The international political dimensions; third world interest; impact on economic growth.
- (c) Water pollution: Water cycle; pollution of surface water, ground water, ocean water; industrial pollution and its effects; domestic sewage and its treatment - techniques and appropriate technology; marine ecosystem protection and coastal zone management; soil pollution-source - effects.

## 6. Legal Regimes for Sustainable Development

10 marks

- (a) National legislative frameworks for environment protection and conservation; survey of constitutional provisions (including directive principles); national laws; state laws of India.
- (b) International legal regimes: on trade and environment (GATT, WTO, IPR, TNC regional arrangement and preferential trade arrangements); on climate; on common resources (forests, bio-diversities, oceans and space); international institutions (UNEP, UNCTAD, WHO, UNDP, etc.); international initiatives (Earth Summit, Agenda 21).

## Course Work / Project Work

Marks: 20

### Suggested Assignments

The practical/project work carrying 20 marks has to be undertaken under the guidance of the teacher and to be evaluated as a part of the External Assessment. The project work could take one of the following forms:

1. Address a current environmental problem (preferably at local or regional scale) and should include problem identification and analysis, use of secondary data as well as some collection of primary data, design of solution, documentation of the entire process in the form of a solution proposal or make a field study of the effect of human interaction on the natural

environment and write a project report (1500 words) on the likely impact of the interaction on the global environment.

2. Design and conduct an environment impact assessment. The candidates may use secondary data, demonstrate their capacity to collect and analyse primary data by incorporating some primary data collected and use it in a few sectors of their work or prepare an original study/essay (2000 words) on an area of the prescribed curriculum that is indicative of his/her appreciation/ concern for environmental issues and make a functional model to support the above.
3. Systematic monitoring of an aspect of the local environment over a period of at least six months. The candidate must use quantitative techniques of monitoring, sampling scientifically. The data collection must be interpreted and presented in the form of a project report (1500 words).
4. Conduct a study on the density and population of plants growing in a particular area using the quadrat method and prepare a report.
5. Make a field study of the effect of human interaction on the natural environment and write a project report (1500 words) on the likely impact of the interaction on the global environment.
6. Prepare an original study/essay (2000 words) on an area of the prescribed curriculum that is indicative of his/her appreciation/concern for environmental issues and make a functional model to support the above.

### **TEXTBOOK PRESCRIBED:**

A textbook of Environmental Science for class XII published by J and K State Bosc in collaboration with Foundation Book Pvt. Limited, New Delhi.

# PHYSICAL EDUCATION

Max. Marks 100

Time: 2.30 hrs.

Theory: 60 Marks

Practical: 40 Marks (External: 25, Internal: 15)

## THEORY

### Unit I. PHYSICAL FITNESS 05 Marks

- Meaning and importance of Physical Fitness
- Components and types of Physical Fitness
- Factors effecting Physical Fitness

### Unit II. TRAINING METHODS 10 Marks

- Meaning and concept of training.
- Methods of training: Isometric and Iso-kinetic Exercise, Continuous Method, Interval Training and Fertlek, Circuit training, Acceleration Runs and Pace Races.

### Unit III. SOCIOLOGICAL ASPECTS OF PHYSICAL EDUCATION 10 Marks

- Meaning of Sociology and its Importance in Physical Education and Sports.
- Games and Sports as man's cultural heritage.
- Development of leadership qualities and group dynamics through Physical Education.
- Value Education through Physical Education programmes.

### Unit IV. MORAL EDUCATION 05 Marks

- Need and Importance of Moral Education.
- Moral Education through Physical Education.

### Unit V. SPORTS AND ENVIRONMENT 10 Marks

- Concept of environment.
- Need of environment in physical education programme.
- Role of individual in improvement of environment for health promotion and prevention of sports related accidents.

### Unit VI. YOGA 05 Marks

- Meaning and importance of yoga.
- Yoga and Indian heritage.
- Elements of Yoga.

**Unit VII. CONCEPT OF MAJOR GAMES/ SPORTS****10 Marks**

- Cricket, Athletics, Basketball and Table Tennis.
- History of games (Above Games)
- Rules, measurement of the field/court. (Above Games)

**Unit VIII. SPORTS MEDICINE FIRST AID REHABILITATION****05 Marks**

- Meaning and Importance of Sports Medicine
- Doping (meaning and drugs for doping)
- First Aid and Rehabilitation of the following sports injuries:
  - Acute injuries: such as dehydration, heat stroke and exercise-induced asthma.
  - Chronic injuries: such as aches and pain of unknown origin, tendinitis (swelling in the tendons), and stress fractures (hairline fractures of the bone due to overuse).

**PRACTICAL:****40 Marks****Internal Assessment:****15 Marks**

Internal assessment shall comprise Games/ sports (kho-kho, badminton, shot put) and Project work.

The break up of the marks is as under:

- |   |          |
|---|----------|
| 1. Games/ Sports (kho-kho, badminton, shot put) | 10 Marks |
| 2. Trekking                                     | 05 Marks |

**External Assessment:****25 Marks**

External assessment shall comprise skill test of Games/ sports (any game/ sport of student's choice) and Record file (the students shall maintain the practical file by drawing the field/ court with measurement and rules of the games/sports. The break up of the marks is as under:

- |   |          |
|---|----------|
| 1. Skill test of Games/sports. (students choice game) | 15 Marks |
| 2. Record file  | 05 Marks |
| 3. Vivo-voce  | 05 Marks |

# BUDDHIST STUDIES

Max. Marks: 100 Marks

Time Allowed: 03 hours

I. Trisharanagamana (Refuge to Three Jewels)	Marks 10
II. Panchashila	Marks 10
III. Karma and Re-birth	Marks 10
IV. Post Gautama Buddha Preceptors	Marks 10
V. Buddhism and Modern World	Marks 10
VI. Introduction to Sacred Books of Buddhism	Marks 10
VII. Introduction to Sadalankara (Six Acharyas of Buddhism)	Marks 10
VIII. Bodhichitta	Marks 10
IX. Paramita	Marks 10
X. Introduction to the Buddhist Art and Architecture	Marks 10

## Unit I : Trisharanagamana

- (i) Definition of Taking Refuge
- (ii) Cause for Taking Refuge
- (iii) Literal Meaning of Jewel
- (iv) Precepts Concerning Taking Refuge
- (v) Benefits of Taking Refuge

## Unit II : Panchashila

- (I) Classification of Panchashila
- (II) Explanation of Panchashila

## Unit III : Karma and Rebirth

- (i) Definition of Karma
- (ii) Classification of Karma
- (iii) Concept of Re-berth

## Unit IV : Post Gautama Buddha Preceptors

- (i) Mahakashyapa
- (ii) Ananda
- (iii) Upagupta
- (iv) Shvenastra
- (v) Dhidhika

- (vi) Krishna
- (vii) Sudarshana

#### **Unit V : Buddhism and Modern World**

- (i) Buddhism and World Peace
- (ii) Buddhism and Science
- (iii) Buddhism and Ecology

#### **Unit VI : Introduction to Sacred Books of Buddhism**

- (i) Tripitaka
- (ii) Kangyur
- (iii) Stangyur

#### **Unit VII : Introduction to Sadalankara (Six Acharyas of Buddhism)**

- (i) Nagarjuna
- (ii) Asanga
- (iii) Vasubandhu
- (iv) Aryadeva
- (v) Dinnaga
- (vi) Dharmakirti

#### **Unit VIII : Bodhichitta**

- (i) Definition of Bodhichitta
- (ii) Classification of Bodhichitta
- (iv) Cultivating of Bodhichitta
- (v) Benefits of Bodhichitta

#### **Unit IX : Paramita**

- (i) Definition of Paramita
- (ii) Classification of Paramita
- (iii) Practice of Paramita
- (iv) Benefits of Paramita

#### **Unit X : Introduction to the Buddhist Art and Architecture**

- (i) The Buddhist Art and Architecture of Kashmir
- (ii) The Buddhist Art and Architecture of Jammu
- (iii) The Buddhist Art and Architecture of Ladakh

# ELECTRONICS

**Total Marks : 100**

**Theory : 70 marks**

**Practicals : 30 marks**

**Internal Assessment: 10 marks**

**External Exam : 20 marks**

## UNIT - I

**(08 Marks)**

### MEASUREMENT & PMMC MOVEMENT

Significance of measurement, methods of measurement (Direct and Indirect methods). Basic definitions of instruments, Performance parameters: Accuracy, Precision, Sensitivity, Resolution, Types of Errors, Significant figure, D'Arsonval movement, Construction and working, Conversion of PMMC to voltmeter & Ammeter.

## UNIT - II

**(08 Marks)**

### Instruments:

Multi range voltmeter and ammeter. Series ohmmeter. Introduction to multimeter (qualitative treatment only). CRO: Construction (Electron Gun, Electrostatic focusing, deflection plates). Block diagram of CRO. Working of CRO, Measurement of voltage, Frequency and phase angle.

## UNIT-III

**(08 Marks)**

### Transducers :

Classification of transducers (active and passive), types of transducers (temperature , pressure, light and displacement). Working of transducers - Strain gauge, gauge factor, thermocouple, LDR. Measurement of temperature and resistance

## UNIT — IV

**(16 Marks)**

### Electronics communication :

Elements of communication system: transmitter, communication channel (various types), receiver. Function of each element with examples like telephone and Radio.

Types of Electronic Communication: Simplex, duplex, analog, digital, baseband and modulated.

Electromagnetic spectrum and Bandwidth: Idea of electromagnetic spectrum used in electronic communication, various frequency ranges used for communication\*, idea of band width, and its importance in limiting the number of communication channels.

Modulation: necessity, types (AM & FM only), Expression for amplitude modulation, basic wave forms. Modulation index and percentage of modulation. Idea of side bands. Basic principles of FM, idea of side bands. Merits/demerits of FM over AM.

Satellite Communication (qualitative treatment only): Geo synchronous satellite, idea of a transponder, application of satellite communication (TV, Telephony, surveillance, observation).

Students need not remember the values of there frequency ranges for the examination purpose.

## UNIT – V

(12 Marks)

### Number system and logic gates:

Number system- decimal, binary, octal, hexadecimal, inter conversion of various number systems. Binary Addition, subtraction, multiplication & division, 2's complement of a number, Boolean algebra & De-Morgan's Theorem, Logic gates, OR, AND, NOT, NAND, NOR EX-OR gates Truth Table & NAND/NOR as universal gates. Implementation of simple logic expressions using Logic Gates.

## UNIT – VI

(10 Marks)

### Combinational Logic circuits :

Half adder, full adder, half subtractor and full subtractor, comparator (2 bit), Multiplexer, Demultiplexer, Encoder, Decoder, Parity checker and generator.

## UNIT – VII

(08 Marks )

### Fundamentals of computer :

Block Diagram of computer (input-output, ALU, Control Unit, Main Memory, Secondary Memory, Control and Data Lines (busses). software, hardware, firmware. Classifications of computers (on the basis of type, data processing capability, word length and application). Input devices- keyboard, mouse, MICR, optical scanner; Output devices — Display, printers, plotter. Memory : RAM (Static and Dynamic), ROM, PROM, EPROM, EEPROM. Secondary Memory: Floppy Disk, Hard Disk, Compact Disk (CDROM), magnetic tape.

### Recommended/ Suggested books

1. Electronic Instrumentation by Cooper Helfrick.
2. Basic Electronics by A.P.Godse & U.A. Bakhshi.

3. Eletronic Communiatiion by Dennis Roddy.
4. Digital electronics by R.P. Jain.
5. Principles of Electronics by V.K. Mehta & R. Mehta

## PRACTICALS HSP II

Marks : 30

Marks Internal : 10 Marks

External: 20 Marks

### Section I

1. To construct a voltmeter using a galvanometer
2. To construct an ammeter using a galvanometer.
3. To extend the range of a voltmeter.
4. To extend the range of an ammeter.
5. To study and analyze Multimeter for various measurements.
6. To study front panel controls of CRO.
7. To calculate the amplitude, time period and frequency of a sinusoidal wave Using CRO.
8. To generate various waveforms using a waveform generator and study their characteristics.with the help of a CRO.
9. To generate an A.M wave and find the Modulation index using a CRO. Modulation Index= $(E_{max}-E_{min})/(E_{max}+E_{min})$

### Section II

1. To Study OR gate using IC-7432.
2. To Study AND gate using IC-7408.
3. To Study NOT gate using IC-7404.
4. To Study NAND gate.
5. To Study NOR gate.
6. To Study Ex-OR gate.
7. To study half adder.
8. To study full adder.
9. To study half subtractor.
10. To study parity checker/generator.
11. To study NAND gate as a universal gate.
12. To study NOR gate as a universal gate.

# COMMERCE STREAM

## BUSINESS STUDIES

Max Marks: 100

Time: 03 hours

### Part A: Principles and Functions of Management

#### Unit 1: Nature and Significance of Management

Marks 07

- Management - concept, objectives, importance
- Management as Science, Art, Profession.
- Levels of management
- Management functions - planning, organizing, staffing, directing and controlling
- Coordination - characteristics and importance

#### Unit 2: Principles of Management

Marks 07

- Principles of Management - concept, nature and significance
- Fayol's principles of management
- Taylor's Scientific Management - principles and techniques

#### Unit 3: Management and Business Environment

Marks 05

- Business Environment - importance
- Dimensions of Business Environment - Economic, Social, Technological, Political and Legal
- Economic Environment in India; Impact of Government policy changes on business and industry, with special reference to adoption of the policies of liberalization, privatization and globalisation.

#### Unit 4: Planning

Marks 07

- Concept, features, importance, limitations
- Planning process
- Types of Plans - Objectives, Strategy, Policy, Procedure, Method, Rule, Budget, programme.

#### Unit 5: Organising

Marks 10

- Concept and importance.
- Steps in the process of organizing.
- Structure of organization - functional and divisional.
- Formal and informal organization.

- Delegation: concept, elements and importance.
- Decentralization: concept and importance.
- Difference between delegation and Decentralization

#### Unit 6: Staffing

Marks 08

- Concept and importance of staffing
- Staffing as a part of Human Resource Management
- Staffing process
- Recruitment - meaning and sources
- Selection - process
- Training and Development - Concept and importance. Methods of training

#### Unit 7: Directing

Marks 10

- Concept and importance
- Elements of Directing
  - Supervision - concept and role
  - Motivation - concept, Maslow's hierarchy of needs; Financial and non-financial incentives.
  - Leadership - concept; qualities of a good leader
  - Communication - concept, formal and informal communication; barriers to effective communication.

#### Unit 8: Controlling

Marks 06

- Concept and importance
- Relationship between planning and controlling
- Steps in the process of control
- Techniques of controlling : budgetary control,

### Part B : Business Finance and Marketing

#### Unit 9: Business Finance

Marks 12

- Concept, importance, objectives of Business finance
- Financial decisions : factors affecting
- Financial planning - concept and importance.
- Capital Structure - concept and factors affecting
- Fixed and Working Capital - concept and factors affecting its requirements.
- Difference between Capital Market and Money Market.

### Unit 10: Financial Markets

Marks 08

- Concept of Financial Market: Money Market and its instruments.
- Capital market and types - primary and secondary market.
- Stock Exchange - Functions, Trading Procedure, NSEI, OCTEL.
- Securities and Exchange Board of India (SEBI)- Objectives and Functions.

### Unit 11: Marketing Management

Marks 14

- Marketing - meaning, functions and role, marketing and selling
- Marketing mix - elements
  - Product - nature, classification, branding, labeling and packaging
  - Price - Factors determining fixation of price
  - Physical distribution: Elements; Channels of distribution: types, function, choice of channels
  - Promotion-Elements of promotion mix; Advertising - role, limitations, objections against advertising.
- Personal selling - concept, importance; Sales promotion - merits, limitations, methods; Publicity - concept and role.
- Personal Setting
- Sales promotions

### Unit 12: Consumer Protection

Marks 06

- Importance of consumer protection
- Consumer rights
- Consumer responsibilities
- Ways and means of consumer protection - Consumer awareness and legal redressal with reference to Consumer Protection Act.
- Role of consumer organizations and NGOs.

### Suggested textbook

1. Business Studies published by NCERT, New Delhi

# ACCOUNTANCY

Max Marks: 100

Time: 03 hours

Theory: 80 Marks

Project work: Marks 20

Internal : 05 Marks

External : 15 Marks

**Part A: Accounting for partnership firms and companies**

**Marks 60**

**Unit-1: Accounting for partnership firms**

**A. Fundamentals and Admission of a partner**

**Marks 15**

1. Partnership features, partnership deed.
2. Provision of the Indian partnership Act 1932 in the absence of partnership deed.
3. Fixed vs Fluctuating capital accounts, preparation of profit and loss appropriation account, division of profit among partners.
4. Past adjustments (relating to interest on capitals interest as drawings, salary and profit sharing ratio)
5. Goodwill : Nature, factors affecting and methods of valuation, Average profit, super profit, weighted average profit and capitalization of average and super profit.
6. Calculation of sacrificing ratio and new profit sharing ratio. Treatment for revaluation of assets and reassessment profits, adjustments of capital accounts and preparation of balance sheet.

**B. Retirement and death of a partner.**

**Marks 10**

1. Calculation of Gaining ratio and new profit sharing ratio, treatment of goodwill as per AS-26, treatment for re-valuation of assets and re-assessment of liabilities, adjustment of accumulated profits and balance sheet, preparation of loan account of the retiring partner.
2. Calculation of deceased partners share of profit till the date of death, preparation of deceased partners capital account-executors account.

**C. Dissolution of Partnership firm:**

**Marks 10**

1. Types of dissolution of a firm, settlement of accounts, preparation of realization account and other related accounts: Capital Accounts of partners, cash / bank account.

**Unit-2 Accounting for Companies.**

**A. Accounting for share capital**

**Marks 15**

1. Share and share capital nature and types.
2. Disclosure of share capital in company's balance sheet.
3. Accounting for share capital Issue and allotment of equity and preference shares. Public subscription of shares, oversubscription and under subscription of shares, Issue of shares at par, at premium and at

discount, calls in advance and arrears, issue of shares in consideration other than cash, Meaning of private placement of shares, employees stock option, sweat equity shares and right issue.

- Accounting treatment for forfeiture and reissue of shares.

#### **B Accounting for Debentures**

**Marks 10**

- Issue of debentures at par, at premium and at a discount, issue of debenture for consideration other than cash writing off discount and loss on issue of debentures, issue of debentures with terms of redemption.
- Issue of debentures as collateral security journal entries for interest on debentures.
- Sources of redemption of debentures-out of profit, out of capital and creation debenture redemption reserve.
- Methods of redemption Lump sum method, draw of lots, purchase in open market and conversion into equity shares and new debentures.

#### **Part B:**

##### **Unit-3 Financial Statement Analysis:**

**Marks 12**

- Financial Statement of company-preparation of simple Balance sheet of a company in prescribed form as per schedule III to the Companies Act 2013, with major headings only.
- Financials statement analysis- meaning, significance, limitations.
- Accounting ratios - meaning and objectives.

#### **Types of ratios-**

**Liquidity ratios-** Current ratio, liquid ratio.

**Solvency ratios-** Debt to equity, proprietary ratio.

Total asset to debt ratio.

**Activity ratios-** Inventory turnover ratio, debtors turnover ratio, working capital turnover.

**Profitably ratio-** Gross profit ratio, net profit ratio, operating ratio, operating net profit ratio, return on investment.

#### **Unit 4 : Cash Flow statement**

**Marks 8**

- Meaning, objective and preparations of cash flow statement (as per AS3 (revised) (Indirect method only)
- Adjustment relating to depreciation, profit or loss on sale of assets, dividend and tax.

#### **Part C: Project Work**

- Project file - 3 marks**
- Written Test - 9 marks (one hour)**
- Viva-voca - 3 marks**

**Note:**

1. Written test of 9 marks should be from Part - B only (analysis of financial statement).
2. Project work should include one comprehensive problem and one specific problem.
3. Comprehensive problem should include full accounting process i.e. journal, posting trial balance, final accounts and its analysis (expressed in ratios)
4. One specific problem relating to the analysis of balance sheet of any multinational corporation or body corporate (Using comparative statement or common-size statements or ratio analysis)
5. Representation of data in the form of bar graphs, pie-diagram, tables or tally marks.

**Or**

**Part B: Computerized accounting**

**Unit-3: Overview of computerized accounting system**

**Marks 5**

1. Concept of computer accounting system.
2. Features and types of computer accounting systems (Generic, specific, tailor-made)
3. Structure of a computerized accounting system.
4. Accounting software packages - tally, busy (latest version)

**Unit 4: Accounting using Database Management system (DBSM)**

**Marks 8**

1. Concept of DBSM.
2. DBSM in business application
3. Creating data tables for accounting.
4. Applications of DBSM in generating accounting information such as shareholders records, sales report, customer's profile, supplier's profile, payroll, employee's profile and petty cash register.

**Unit 5: Accounting Applications of Electronics Spread.**

**Marks 7**

1. Concept and features of electronic spreadsheet.
2. Applications of electronic in generating accounting information, preparing depreciation schedule, loan repayment schedule, payroll accounting and other such applications.

**Part C : Project Work**

4. **Project file - 3 marks**
5. **Written Test - 9 marks (one hour)**
6. **Viva -voce - 3 marks**

# ENTREPRENEURSHIP

Maximum Marks: 100

Theory: 80

Practicals: 20

Internal: 05 Marks

External: 15 Marks

Time: - 3 Hours

## UNIT-I

20 Marks

### ENTREPRENEURIAL OPPORTUNITIES & ENTERPRISE CREATION

- I. Entrepreneurial Opportunities: Meaning & Objectives.
- II. Environment Scanning: Meaning & Importance.
- III. Market Assessment: Meaning & Steps in Market Assessment.
- IV. Factors affecting Identification of Entrepreneurial Opportunities.
- V. Factors in selection of an enterprise.
- VI. Steps in setting up of an enterprise.

## UNIT-II

30 Marks

### ENTERPRISE PLANNING & RESOURCING

- I. Business Planning: Meaning, Importance & Steps in business planning.
- II. Preparation of a Project Report.
- III. Resource Assessment: Financial & Non Financial, Meaning, Definition & Importance.
- IV. Fixed & Working Capital requirement: Meaning, Factors affecting the estimation of fixed and working capital.
- V. Mobilising Financial & non-financial resources for setting up of an enterprise.

## UNIT-III

30 Marks

### ENTERPRISE MANAGEMENT

- I. General Management: Basic Management Function.
- II. Managing Market: Meaning, Functions of marketing & Marketing Mix-Product, Price, Place, Promotion (Advertising & Sales promotion).
- III. Managing Finance: Sources of long term & Short term finances.
- IV. Human Resource Management: Meaning, objectives and functions.
- V. Managing Growth & Sustenance: Meaning & Importance of Modernisation, Expansion, Diversification, Franchising & Merger.
- VI. Entrepreneurial Discipline: Law of Land, Ecology, Consumer's concept, Adherence to contracts & credits.

- |                                 |          |
|---------------------------------|----------|
| 1. Project Report/Survey Report | 09 Marks |
| 2. Viva-Voce on PW /SR          | 03 Marks |
| 3. Case Study                   | 03 Marks |

**Guidelines for Project Report/Survey Report.****1. Project Report/Market Survey Report 09 Marks****a) Project Report:**

Preparation of a Project Report for an enterprise involving products/services

Students may be provided adequate guidance to choose a project based on their interests and availability of information and authentic inputs in the locality. The specimen proforma of project report given in the textbook may be used for preparing the report. However, mechanical preparation of the report by filling in the information in the proforma should be discouraged.

Further, as the students will be required to appear for a Viva-voce on the basis of their projects, sufficient care should be taken by the students to prepare the report after studying the various aspects involved thoroughly. In a nutshell, the project report should lead to viable enterprise.

**b) Market Survey Report**

Market research is the process and technique of finding out who your potential customers are and what they want. The survey may be on products and services already available in the market or students may also conduct surveys for new products and services. The report of the survey should be organised under the following broad headings:

1. Objectives.
2. Methods and tools (interviews, questionnaires etc.) to be used to collect information.
3. Records of data and information.
4. Analysis of data and information.
5. Interpretation and conclusion.

For example, a survey may be conducted to find out the choice of households in toiletry soap, tooth paste etc. The data may be analysed to establish a pattern that may be useful to an entrepreneur.

**Guidelines for assessment of Project Report / Survey Report**

1. Presentation: Format, Clarity, Use of graphs, tables and other visuals, organisation, methodical recording of data and information and general neatness of execution. **4 marks**
2. Originality and Creativity **3 marks**
3. Authenticity of information and correctness of calculations and general feasibility of the project/ sustainability of conclusion drawn in the survey. **2 marks**

**2. Viva Voce on the Project /Market Survey Report 03 Marks**

The questions should establish that the report is the original work of the student and that the student has a reasonably clear understanding of the work carried out by him/her. Entrepreneurial qualities such as leadership, self-belief, creativity, originality, initiative etc. may also be assessed by asking a variety of questions related to the report.

### 3. Case Study

03 marks

A case study is a focused research on an organization, enterprise, practice, behavior or person undertaken to highlight an aspect that the study attempts to examine. For instance, a case study may be conducted on the pollution control methods being employed by an industry. Or a successful industrialist may be chosen as a subject of a case study to analyze and understand the strategies that the industrialist adopted: to achieve success. Ideally, a case study should be conducted on subjects with the objectives of bringing to the fore beliefs, practices, strategies, values etc. that have made them what they are. Such studies help us to understand the way in which great minds think and operate. We may also conduct case studies on failures; why a company collapsed, how a service lost its market etc. From both the types of case study, we learn lessons; how to do something or how not to do something. They also provide valuable insight into the processes involved in an enterprise. A few topics are suggested for carrying out case studies:

- i) Drawing a profile of a successful entrepreneur.
- ii) Studying a public sector undertaking and highlighting its success/failure, by analyzing the factors responsible.
- iii) Studying a small scale unit in the locality to bring out the procedures and processes adopted by the unit to become a feasible business venture.
- iv) A study of competition in business by choosing two or more rivals in the market and analyzing their strengths and weaknesses.
- v) Take the school itself for a case study and analyze any two aspects of the school plant for chalking out a plan of action: infrastructure, academics, co-curricular activities etc.
- vi) A case study on a thriving fast food shop/restaurant in your locality. What makes it so popular?
- vii) A case study on the ways in which a business unit has mobilized its financial resources.
- viii) A case study on the enterprise management techniques adopted by a business house.
- ix) A case study on the marketing strategies of a successful consumer durable company.
- x) A case study on the financial management of a Public Limited Company.
- xi) A case study on any Specialized Institution that supports and guides the establishment of a small scale unit.
- xii) Studying the balance sheets of two big private companies to assess their trade and credit worthiness.
- xiii) Studying the inventory management of a large manufacturing industry to ascertain the processes involved for optimizing cost.
- xiv) Carrying out a case study on an established industrial house/company to find out the value system of the company and how it fulfils its social commitment/obligations.
- xv) Carrying out a case study on an established industry to ascertain the processes followed to reduce/prevent pollution.
- xvi) Study on environment friendly companies and their contribution to preservation.

#### Assessment of Case Studies

- i) Presentation: Format, accuracy, clarity, authenticity and general neatness
- ii) Analysis and Conclusions

# TYPEWRITING AND SHORTHAND

Maximum Marks : 100

Time allowed : 3 hours

External : 60

Internal : 40

## Section A

### (TYPEWRITING ON TYPE MACHINE/COMPUTER KEY BOARD)

External Examination : 30

Internal assessment : 20 marks

There shall be one practical paper of 30 marks and 3 hours duration. The paper shall contain the following exercises :

- |                                       |          |
|---------------------------------------|----------|
| i) Passage of 400 – 500 words (prose) | 10 Marks |
| ii) A business letter                 | 08 Marks |
| iii) A tabular statement              | 07 Marks |
| iv) Viva – voce                       | 05 Marks |

In viva-voce, knowledge of the following be tested :

- Key board of Typing machine/Computer.
- Function of different parts of machine, Type writer/Computer
- Table setting and
- Maintenance of typewriter shall be tested.

The length of the above material will be in accordance with the time allowed.

Accuracy and arrangement shall be given paramount importance.

The speed expected of the examinees shall be 30 words per minute.

Actual time taken by the examinees in typing out the passage shall be noted on the answer sheet.

### INTERNAL ASSESSEMENT : 20 Marks

20 Marks allocated for internal assessment shall be awarded on the basis of two tests one of 10 marks and the other of 10 marks.

1<sup>ST</sup> TEST : 10 Marks

SECOND TEST : 10 Marks

## Section B (SHORTHAND)

External Examination : 30 marks

Internal assessment : 20 marks

### EXTERNAL EXAMINATION :

The candidates shall be required to take down dictation in shorthand at speed of 60 words per minute. The material for shorthand may be a passage of 800 – 1000 words.

After taking down dictation students shall be required to transcribe the same in their own handwriting, in long hand.

The outline of the shorthand shall have to be attached by the candidate with the answer sheet. 7 marks are reserved for outline (shorthand).

Outline 07 Marks

Transcription in long hand 18 marks

Viva-voce 05 marks

In Viva-voce, knowledge of consonants and vowels, Grammoalogues.

Contractions, abbreviations, suffixes and prefixes, etc shall be tested.

### INTERNAL ASSESSMENT

Marks in internal assessment shall be awarded on the basis of two tests (internal) as given below:

1<sup>st</sup> Test 10 marks

2<sup>nd</sup> Test 10 marks

**Note :** The school shall maintain a cumulative record card indicating marks awarded to candidates in the internal assessment both in typewriting and shorthand.

# HOME SCIENCE (FULL STREAM)

## HUMAN DEVELOPMENT

Maximum Marks : 100

Theory: 70 marks

Time: 3 Hours

Practicals: 30 Marks (External: 20; Internal:10)

### UNIT I: GROWTH AND DEVELOPMENT

- Understanding the concept of child development, History and scope of child development.
- Child study and its Importance, methods of child study.
- Meaning and definition of growth and development.
- Principles & characteristics of growth & development.
- Heredity and environment: - Factors influencing hereditary and environment.
- Influence of hereditary and environment on the development of the child.

Marks: 14  
Periods: 22

### UNIT II: PRENATAL DEVELOPMENT

- The menstrual cycle.
- Preparatory process before life begins (maturation, ovulation and fertilization).
- Importance of Fertilization.
- Stages of prenatal development.
- Factors affecting prenatal development.
- Hazards during prenatal period.

Marks: 14  
Periods: 22

### UNIT III: POST NATAL CARE

Post natal care of the mother.

Post natal care of the infant sleeping, bathing, clothing and feeding.

Immunization — Importance and immunization schedule.

Characteristics and changes in infancy and babyhood.

- Development of motor skills, developmental task from 0 to 2 yrs.
- Language development.

**Marks: 14**  
**Periods: 22**

#### **UNIT IV: DEVELOPMENT DURING EARLY CHILDHOOD**

- Characteristics and changes in early childhood.
- Needs of early childhood. Social and self help skill developed during early childhood.
- Play — Importance and types, factors affecting play in children, causes of imbalance in play.
- Creative activities: - Importance and need.
- Importance of story-telling and music.

**Marks: 14**  
**Periods: 22**

#### **UNIT V: DEVELOPMENT DURING LATE CHILDHOOD**

- Characteristics and changes in late childhood.
- Meaning and definition of socialization.
- Functions of socialization.
- Agents of socialization, family, school, peer group and community.
- Moral development — discipline, role of reward and punishment in maintaining the discipline.

**Marks: 14**  
**Periods: 22**

#### **PRACTICALS**

- 1) Visit to a Primary Health Care Center.
- 2) Visit to a baby clinic.
- 3) Preparing a kit for a new born baby.
- 4) Preparing of weaning foods.
- 5) Visit to a nursery school and observe the various play activities of children.
- 6) Prepare a packed lunch for a school going child (6 to 12 years)
- 7) Prepare a chart showing prenatal development in a tabular form.

**Marks: 30**  
**Periods: 24**

# CLOTHING FOR THE FAMILY

**Maximum Marks : 100**

**Theory: 70 marks**

**Time: 3 Hours**

**Practicals: 30 Marks (External: 20; Internal:10)**

## **UNIT I: CLOTHING**

- Clothing needs of the family with reference to climate, family income, age of family members, activity and fashion.
- The clothing budget, choice of textiles with reference to utility, durability and cost.

**Period: 15  
Marks: 10**

## **UNIT II: FABRIC CONSTRUCTIONS**

- Classification of Textile Fabric (Fibre).
- Characteristics, physical and chemical properties of cotton, wool, silk, rayon, polyester, Dacron and nylon.
- Various types of yarns and basic procedure of making yarn.
- Weaving—Construction of weaves—Plain, Basket, Twill sateen, Satin, Rib weave. A brief mention of special weaves pile and Jacquard weaves.
- Knitting and non woven fabrics, felting and bonding.

**Period: 30  
Marks: 20**

## **UNIT III: FABRIC FINISHES**

- Meaning and its importance.
- Classification of finishes: - Basic finishes — Calendaring, scouring, seinging, stiffening, tentering, bleaching.
- Special finishes—Mercerisation, shrinkage control, sanforizing, water proofing, dyeing and printing.

**Period: 18  
Mark: 15**

## **UNIT IV: WASHING AND FINISHING OF GARMENTS**

- Different method of washing: Friction, suction method, by kneading and squeezing, washing by machine.
- General methods for drying and ironing.
- Washing and finishing of cotton, wool, silk, rayon and nylon.
- Removal of common stains.

**Periods: 15  
Marks: 10**

## UNIT V: EQUIPMENT AND SUPPLIES USED IN CLOTHING CONSTRUCTION

- Their use and care with special reference to sewing machine and its accessories.
- A study of Anthropometry (Body measurement)
- Factors to be considered while taking body measurements — Round neck, round bust, round waist, round hip, Armhole line, waist front and back length, across back, across front and across shoulder, Arm length.
- Definition of drafting, important points to be considered while making draft.
- Drafting of Apron, Jangia, and baby frock.
- Basic principles involved in laying out pattern on cloth.
- Mending of cloth, darning and patching.
- Handlooms of Jammu and Kashmir.

Periods: 30

Marks: 15

### PRACTICALS

- 1) Identification of fibres, microscopic appearance of fibres, physical and chemical test.
- 2) Washing and finishing of cotton, wool and silk.
- 3) Removal of common stains.
- 4) Ability to use following stitches.
  - a) Tacking
  - b) Running stitch
  - c) Back stitch
  - d) Hemming.
- Seams
  - a) Plain
  - b) French seam
  - c) Run and fell seam
- Hems — Straight and curved
- Fasteners—
  - a) Hook and eye
  - b) Button hole
  - c) Placket opening
  - d) Zippers
  - e) Press button
- Decorative stitches at least (6 to 8)
- 5) Methods of mending garments darning and patching.
- 6) Drafting of Jangia and apron.

M Marks: 30

Periods: 25

# EXTENSION EDUCATION

Maximum Marks: 100

Theory: Marks 70

Practicals: Marks 30

Time: 3 hours

External: 20, Internal : 10

## UNIT I: CONCEPT OF HOME EXTENSION

- Meaning, philosophy and scope of Home science.
- Historical review of development of Home Science in India and Abroad.
- Meaning and scope of Extension Education. Its philosophy and Contribution to Women empowerment.
- Objectives of Home Science in relation to objectives of extension education.

Period: 22

Marks: 14

## UNIT II: INTERDISCIPLINARY NATURE OF HOME SCIENCE

- Branches of Home science – Food & Nutrition, Human Development and family resource, management of resources, clothing and textiles, extension education, the areas studied under these branches.
- The role of Home science scientist in the community.

Period: 22

Marks: 14

## UNIT III: METHODS OF TEACHING AND PLANNING

- Methods of Teaching Home science in formal and non-formal situation
- Steps in teaching Home Science extension.
- Extension teaching process - for any effective education prgm.
- Evaluation - meaning, importance, scope and types of evaluation.
- Qualities of a Good extension worker.
- Developmental programs in Home Science extension.

Period: 22

Marks : 14

## UNIT IV: DEVELOPMENT COMMUNICATION

- Concept, meaning, purpose of Communication, importance of communication and development.
- Types of Communication
  - Verbal and non-verbal

- Intra-personal & inter-personal
- Formal and informal
- Traditional and modern

Communication through mass media - Concept, Characteristic of mass communication, mass communication media, functions of mass Communication, advertising and effect of mass communication.

**Period: 20**

**Marks: 14**

#### **UNITY: COMMUNICATION**

- Mass Communication in Home science. Familiarity with various media for Communication: visual media, Audio media, Audio-visual media, Literature, books and journals.
- Learning to prepare a lesson for a class; realization/appreciation understanding of Home Science programs on radio, TV, articles or features in newspapers, magazines, etc. Preparing simple low-cost materials for communication purposes, charts, flip charts, exhibits, graphs, flash cards, radio and TV scripts writing & illustrating a story of children.
- Demonstration of the use of commonly available equipment.
- Approaches of Communication in development.
  - i) Individual – personal rents, phone calls, letters.
  - ii) Group lectures, Group discussions, demonstration, excursions and field trips.
  - iii) Audio-visual aids, meaning, classification, importance, advantages, limitations and use.

**Period: 20**

**Marks: 14**

#### **PRACTICALS:**

- 1) Prepare a chart to depict interdisciplinary nature of Home Science.
- 2) Prepare a chart showing scope of employment/self employment in the areas of Home Science.
- 3) Planning and organizing a shot extension program within the school itself.
- 4) Preparation of visual aids – charts, posters, flash cards, transparencies.
- 5) Displaying Material on bulletin board, Flannel graph board.
- 6) Practical experience in giving demonstration.
- 7) Preparation of folk media of J&K.
- 8) Organization of an exhibition displaying decorative items prepared out of waste material.
- 9) Preparation of printed material – leaflets, holders, pamphlets.

**Marks: 30**

**Periods: 24**

# हिंदी (Hindi)

समय 3 घंटे

पूर्णांक 100

पाठ्य क्रम एवं अंक विभाजन

अंक

क निबंध लेखन	08
ख काव्य भाग मानसर	24
ग काव्य नाटक अंधा युग	24
घ उपन्यास निर्मला	24
ङ हिंदी साहित्य का इतिहास	20
ए (आधुनिक काल-द्विवेदी युग छायावाद तथा प्रगतिवाद) काल परिचय विशेषताएं एवं कवि ज्ञान बी भाषा राज भाषा राष्ट्रभाषा एवं सम्पर्क भाषा (अंतर महत्व एवं हिंदी में स्थान)	

## खण्ड क

1. रचनात्मक लेखन (निबंध)  
विषय सामाजिक समस्याएं विज्ञान एवं तकनीक देश-प्रेम, अनुशासन, खेल संबंधी एक प्रश्न होगा? 08
2. काव्य भाग मानसर में से विकल्प सहित सप्रसंग व्याख्या संबंधी एक प्रश्न होगा? 05
3. काव्य भाग मानसर में से कविता सार साहित्य परिचय  
आलोचनात्मक एक प्रश्न पूछा जाएगा (विकल्प सहित) 05
4. हिंदी साहित्य का इतिहास में से विकल्प सहित एक प्रश्न पूछा जाएगा 05
5. काव्य नाटक अंधा युग में से विकल्प सहित एक सप्रसंग व्याख्या संबंधी प्रश्न पूछा जाएगा। 05
6. काव्य नाटक अंधा युग में से विकल्प सहित अंक सार चरित्र-चित्रण एवं आलोचनात्मक संबंधी  
प्रश्न पूछा जाएगा। 05
7. उपन्यास निर्मला में से विकल्प सहित चरित्र-चित्रण एवं आलोचनात्मक एक प्रश्न पूछा जाएगा। 05

## खण्ड (ख) (लघु उत्तरापेक्षी प्रश्न)

8. काव्य भाग मानसर में से कविता संबंधी 2 प्रश्न पूछे जाएंगे। (2Q×3M=6)
9. काव्य नाटक अंधा युग में से कविता संबंधी 2 प्रश्न पूछे जाएंगे (2Q×3M=6)
10. हिंदी साहित्य (आधुनिक काल 2 प्रश्न भाषा संबंधी 1 प्रश्न) में से 3 प्रश्न पूछे जाएंगे। (3Q×3M=9)
11. उपन्यास निर्मला में से 3 प्रश्न पूछे जाएंगे दो प्रश्न उपन्यास संबंधी होंगे तथा एक प्रश्न गद्यांश प्रश्नोत्तर  
संबंधी (3Q×3M=9)

### खण्ड ग (अति लघुतरोक्षी प्रश्न केवल बारह)

12. काव्य भाग मानसर में से कवि और कविता संबंधी 3 प्रश्न पूछे जाएंगे (3Q×2M=6)
13. हिंदी साहित्य का इतिहास में से इतिहास एवं भाषा संबंधी 2 प्रश्न पूछे जाएंगे। (2Q×2M=4)
14. काव्य नाटक अंधा युग में से नाटक कार एवं काव्य नाटक संबंधी 3 प्रश्न पूछे जाएंगे। (3Q×2M=6)
15. उपन्यास निर्मला में से उपन्यास एवं उपन्यास कार संबंधी 4 प्रश्न पूछे जाएंगे (4Q×2M=8)

### खण्ड घ

#### वस्तुनिष्ठ प्रश्न केवल

16. (क) काव्य भाग मानसर में से दो प्रश्न पूछे जाएंगे (2Q×1M=2)
- (आ) काव्य भाग अंधा युग में से दो प्रश्न पूछे जाएंगे (2Q×1M=2)
- (इ) उपन्यास निर्मला में से दो प्रश्न पूछे जाएंगे (2Q×1M=2)
- (ई) हिन्दी साहित्य का इतिहास में से दो प्रश्न पूछे जाएंगे (2Q×1M=2)

#### पाठ्यक्रम में निर्धारित पुस्तक

1. काव्य भाग 'मानसर' - जम्मू एव कश्मीर राज्य विद्यालय शिक्षा बोर्ड द्वारा प्रकाशित
2. हिंदी साहित्य का परिचयात्मक इतिहास भागीरथ मिश्र लेखक राष्ट्रीय शैक्षिक अनुसंधान विकास परिषद द्वारा प्रकाशित।
3. काव्य नाटक : 'अनुसंधान' लेखक डॉ धर्मवीर भारती - प्रकाशन महल इलाहाबाद द्वारा
4. उपन्यास 'निर्मला' लेख उपन्यासकार सम्राट मुंशी प्रेमचंद प्रकाशन कला मंदिर दिल्ली द्वारा

**नोट-** उपन्यास निर्मला में से सप्रसंग व्याख्या से संबंधित कोई प्रश्न नहीं पूछा जाएगा।

**नोट-** परीक्षा में प्रश्न-पत्र निर्माण हेतु मार्गदर्शन

प्र. 1	8 अंक	08 अंक	
प्र. 2-7		6×5	30 अंक
प्र. 8-17		10×3 अंक	30 अंक
प्र. 18-29	12×2 अंक	24 अंक	
प्र. 30	8×1 अंक	08 अंक	
	30 प्रश्न	100 अंक	

## PUNJABI

Max. Marks: 100

Time : 3 Hours

1. ਪੁਸਤਕ 'ਕਾਵਿ ਪ੍ਰਵਾਹ' ਵਿਚੋਂ - 30 Marks
2. ਪੁਸਤਕ 'ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ' ਵਿਚੋਂ - 26 Marks
3. ਪੁਸਤਕ 'ਆਰਸੀ' ਵਿਚੋਂ - 26 Marks
4. ਵਿਆਕਰਨਕ ਭਾਗ - 18 Marks

(i) 'ਕਾਵਿ ਪ੍ਰਵਾਹ' ਪੁਸਤਕ ਵਿਚੋਂ ਇਹਨਾਂ ਕਵੀਆਂ ਦੀਆਂ ਕਵਿਤਾਵਾਂ ਅਤੇ ਜੀਵਨੀਆਂ ਹਨ।

- (ੳ) ਭਾਈ ਵੀਰ ਸਿੰਘ
- (ਅ) ਪ੍ਰੋ. ਪੂਰਨ ਸਿੰਘ
- (ੲ) ਪ੍ਰੋ. ਮੋਹਨ ਸਿੰਘ
- (ਸ) ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ
- (ਹ) ਪਿਆਰਾ ਸਿੰਘ ਸਹਿਰਾਈ।

(ii) 'ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ' ਪੁਸਤਕ ਦੀਆਂ 13 ਕਹਾਣੀਆਂ ਵਿਚੋਂ ਹੇਠ ਲਿਖੀਆਂ 3 ਕਹਾਣੀਆਂ (Non-Evaluative) ਹਨ।

- (ੳ) ਸਫ਼ਰ
- (ਅ) ਕੇ ਨਹੀਂ ਲਿਖਣੀ
- (ੲ) ਸੜਕ ਵਾਪਸ ਜਾਂਦੀ ਹੈ।

(iii) 'ਆਰਸੀ' (ਸਵੈਜੀਵਨੀ) ਪ੍ਰੋ. ਤੇਜਾ ਸਿੰਘ।

(iv) ਵਿਆਕਰਨ

- (1) ਲੇਖ-ਚਰਚਨਾ
- (2) ਬਹੁਆਰਥਕ ਸ਼ਬਦ, ਉਲਟ-ਭਾਵੀ ਸ਼ਬਦ, ਸ਼ੁੱਧ ਸਰੂਪ ਵਾਲੇ ਸ਼ਬਦ।

### Books Prescribed

1. ਕਾਵਿ ਪ੍ਰਵਾਹ (ਆਧੁਨਿਕ-ਕਾਵਿ) ਸੰਪਾਦਕ ਦੀਵਾਨ ਸਿੰਘ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨਿਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
2. ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ, ਸੰਪਾਦਕ ਅਮਰੀਕ ਸਿੰਘ। ਜੇ ਐੱਡ ਕੇ ਕਲਚਰਲ ਅਕੈਡਮੀ, ਜੰਮੂ।
3. ਆਰਸੀ (ਸਵੈਜੀਵਨੀ) ਪ੍ਰੋ. ਤੇਜਾ ਸਿੰਘ, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।
4. ਪੰਜਾਬੀ ਵਿਆਕਰਨ ਅਤੇ ਲੇਖ ਚਰਚਨਾ। by ਨਰਿੰਦਰ ਸਿੰਘ 'ਦੁੱਗਲ'।

# SCHEME OF ASSESSMENT

Max. Marks: 100

Time Allowed : 3 Hours.

## Long Answer Type Questions

1. ਕਾਵਿ-ਪ੍ਰਵਾਹ ਪੁਸਤਕ 'ਚੋਂ ਇੱਕ ਬੰਦ ਦੀ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ ਕਰੋ (ਕੋਈ ਦੋ ਚੋਂ ਇੱਕ)। 05
2. ਕਾਵਿ-ਪ੍ਰਵਾਹ ਪੁਸਤਕ 'ਚੋਂ ਇੱਕ ਕਵਿਤਾ ਦਾ ਸਾਰ (ਕੋਈ ਤਿੰਨ ਚੋਂ ਇੱਕ) 05
3. ਕਾਵਿ-ਪ੍ਰਵਾਹ ਪੁਸਤਕ 'ਚੋਂ ਇੱਕ ਕਵੀ ਦੀ ਜੀਵਨੀ (ਕੋਈ ਦੋ ਚੋਂ ਇੱਕ) 05
4. ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ ਪੁਸਤਕ 'ਚੋਂ - ਕਹਾਣੀ ਉੱਤੇ ਚਰਨਾ ਸੰਬੰਧੀ ਪ੍ਰਸ਼ਨ। (ਕੋਈ ਦੋ ਚੋਂ ਇੱਕ) 05
5. ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ ਪੁਸਤਕ 'ਚੋਂ - ਪਾਤਰ ਚਿਤਰਣ ਸੰਬੰਧੀ ਪ੍ਰਸ਼ਨ। (ਕੋਈ ਤਿੰਨ ਚੋਂ ਇੱਕ) 05
6. 'ਆਰਸੀ' ਪੁਸਤਕ 'ਚੋਂ - ਇੱਕ ਵਾਰਤਕ - ਟੋਟੇ ਦੀ ਪ੍ਰਸੰਗ ਦੱਸ ਕੇ ਵਿਆਖਿਆ। (ਕੋਈ ਦੋ ਚੋਂ ਇੱਕ) 05
7. ਆਰਸੀ ਪੁਸਤਕ 'ਚੋਂ ਕਿਸੇ ਇੱਕ ਲੇਖ ਉੱਤੇ ਨੋਟ। (ਕੋਈ ਦੋ ਚੋਂ ਇੱਕ) 05
8. ਵਿਆਕਰਣ 'ਚੋਂ ਲੇਖ-ਰਚਨਾ (Essays) (ਕੋਈ ਤਿੰਨ ਚੋਂ ਇੱਕ) 05

## Short Answer Type Questions

9. ਕਾਵਿ-ਪ੍ਰਵਾਹ ਪੁਸਤਕ 'ਚੋਂ ਕੋਈ ਤਿੰਨ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। (ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ 3 ਹਨ)  $3 \times 3 = 09$   
ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ ਪੁਸਤਕ 'ਚੋਂ ਤਿੰਨ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। (ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ 3 ਹਨ)  
 $3 \times 3 = 09$
10. ਆਰਸੀ ਪੁਸਤਕ 'ਚੋਂ ਤਿੰਨ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। (ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ 2 ਹਨ)  $3 \times 3 = 09$   
ਵਿਆਕਰਨ ਵਿਚੋਂ - ਬਹੁਆਰਥਕ ਸ਼ਬਦ, ਉਲਟੇ ਸ਼ਬਦ ਅਤੇ ਸ਼ੁੱਧ ਕਰਨੇ ਲਿਖੇ ਆਇਓ।  $3 \times 3 = 09$

## Very Short Answer Type Questions

- ਕਾਵਿ ਪ੍ਰਵਾਹ ਪੁਸਤਕ 'ਚੋਂ ਕੋਈ ਦੋ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। (ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ 2 ਹਨ)  $2 \times 2 = 04$   
ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ ਪੁਸਤਕ 'ਚੋਂ ਕੋਈ ਦੋ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। (ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ 2 ਹਨ)  
 $2 \times 2 = 04$
11. ਆਰਸੀ ਪੁਸਤਕ 'ਚੋਂ ਕੋਈ ਦੋ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। (ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ 2 ਹਨ)  $2 \times 2 = 04$   
ਵਿਆਕਰਨ 'ਚੋਂ ਕੋਈ ਦੋ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। (ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ 2 ਹਨ)  $2 \times 2 = 04$

## Multiple Choice Type Questions

- ਕਾਵਿ ਪ੍ਰਵਾਹ ਪੁਸਤਕ 'ਚੋਂ ਦੋ ਕਰਨੇ ਹਨ।  $1 + 1 = 02$
- ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ ਪੁਸਤਕ 'ਚੋਂ ਤਿੰਨ ਕਰਨੇ ਹਨ।  $1 + 1 + 1 = 03$
- ਆਰਸੀ ਪੁਸਤਕ 'ਚੋਂ ਤਿੰਨ ਕਰਨੇ ਹਨ।  $1 + 1 + 1 = 03$

**Total = 100 Marks**

- प्र.1 "इन्दर-धनख" पुस्तक का संकलन काव्य-रचनाएं चा
- (क) कुसै इक पद्यांष की सप्रसंग व्याख्या जां षैऽरें दी व्याख्या (अंदरूनी विकल्प समेत) 5
- (ख) "इन्दर-धनख" पुस्तक च संकलत निबंधें चा कुसै इक गद्यांष दी सप्रसंग व्याख्या (अंदरूनी विकल्प समेत) 5
- (ग) "इन्दर-धनख" पुस्तक च संकलत कहानियें थमां कुसै इक गद्यांष दी सप्रसंग व्याख्या (अंदरूनी विकल्प समेत) 5
- प्र.2 (क) "इन्दर-धनख" पुस्तक च संकलत कुसै इक कवि दा जीवन ते साहित्यक परिचे (अंदरूनी विकल्प समेत) 5
- (ख) "इन्दर-धनख" पुस्तक च संकलत कुसै इक काव्य-रचना दा सार ते केंद्री भाव (अंदरूनी विकल्प समेत) 5
- (ग) "इन्दर-धनख" पुस्तक चा कुसै इक निबंधकार दा जीवन ते साहित्यक परिचे (अंदरूनी विकल्प समेत) 5
- (घ) "इन्दर-धनख" पुस्तक च संकलत गजगोऽ षायरें चा कुसै इक षायर दी षायरी ते ओदी विषेषता बारै सुआल (अंदरूनी विकल्प समेत) 5

लौहके जवाब

- प्र.3 इन्दर-धनख पुस्तक च संकलत
- (क) काव्य-रचनाएं बारै 4 सुआल ..... 3+3+3+3=12
- (ख) निबंधें बारै 3 सुआल ..... 3+3+3=9
- (ग) कहानियें बारै 3 सुआल ..... 3+3+3=9

मते लौहके जवाब

- प्र.4 (क) "डोगरी साहित्य दा इतिहास" थमां उपन्यास ते नाटक दी विकास-यात्रा बारे 2 सुआल ..... 2+2=4
- (ख) "डोगरी साहित्य दा इतिहास" थमां गजल दी विकास-यात्रा बारे इक सुआल ..... 2
- (ग) "इन्दर-धनख" पुस्तक दे निबंधे दी पादय समग्री थमां 3 सुआल ..... 2+2+2=6
- (घ) "इन्दर-धनख" पुस्तक दे निबंधे दी पादय समग्री थमां 3 सुआल ..... 2+2+2=6
- (ङ.) "इन्दर-धनख" पुस्तक दिये काव्य-रचनाएं थमां 4 सुआल ..... 2+2+2+2=8

वस्तुनिष्ठ सुआल

- प्र.5 "इन्दर-धनख" पुस्तक दिये
- (क) काव्य-रचनाएं थमां 2 सुआल ..... 1+1=2
- (ख) कहानिये थमां 2 सुआल ..... 1+1=2
- (ग) निबंधे थमां 2 सुआल ..... 1+1=2
- (घ) "डोगरी साहित्य दा इतिहास" चा नाटक, उपन्यास ते प्राचीन कविये बारे 3 सुआल ..... 1+1+1=3

# संस्कृत (SANSKRIT)

Marks: 100

Time: 3 Hours

प्र 1 09 वस्तुनिष्ठ प्रश्न

- क) 3 प्रश्न 'प्रतिमा नाटक' से 3  
ख) 2 प्रश्न संस्कृत साहित्य की रूपरेखा से 2  
ग) 2 प्रश्न 'मेघदूत' से 2  
घ) 2 प्रश्न व्याकरण से 2

प्र 2) संस्कृत साहित्य से सम्बन्धित 3 प्रश्न:-

- क) संस्कृत साहित्य की उत्पत्ति पर एक लघु टिप्पणी, अथवा रामायण तथा महाभारत महाकाव्य का संक्षिप्त वर्णन एवं संस्कृत साहित्य का महत्वा। (आन्तरिक विकल्प सहित) 5  
ख) शूद्रक, अश्वघोष तथा हर्ष नाटककारों में से किसी एक नाटककार के जीवन तथा उसकी कृतियों का संक्षिप्त वर्णन (आन्तरिक विकल्प सहित) 4  
ग) दण्डी, सबनधु तथा बाणभट्ट लेखकों में से किसी एक गद्यकार के जीवन तथा उसकी कृतियों का संक्षिप्त परिचय (आन्तरिक विकल्प सहित) 4

प्र 3 'प्रतिमानाटकम्' में से किन्ही तीन श्लोकों की प्रसंग सहित व्याख्या।

प्रत्येक श्लोक अपने आप में पूर्ण होना चाहिए। श्लोकों अथवा दोनों का संस्कृत से हिन्दी अनुवाद (आन्तरिक विकल्प सहित) 6+6+6=18

प्र 4 'प्रतिमानाटकम्' में से किन्ही दो गद्यांशों, श्लोकों अथवा दोनों का संस्कृत से हिन्दी अनुवाद (आन्तरिक विकल्प सहित) 4+4=8

प्र 5 'प्रतिमानाटक' के पाठ्यविषय से सम्बन्धित एक प्रश्न:-

चरित्र-चित्रण अथवा नाटक के प्राकृतिकम् पक्ष के प्रश्न एवं प्रतिमानाटक के पहले चार अंकों में से एक अंक का सार 5

प्र 6 'मेघदूत' के दो श्लोकों की सप्रसंग व्याख्या 5+5=10

एक श्लोक 1 से 15 में से तथा एक श्लोक 16 से 30 श्लोकों में से हो।

(प्रत्येक श्लोक आन्तरिक विकल्प सहित)

प्र 7 'मेघदूत' के चार श्लोकों का हिन्दी में अनुवाद।

2 श्लोक 1 से 17 में से हो तथा 2 श्लोक 18 से 35 में से हों। 3+3+3+3=12

प्र 8 'मेघदूत' से पाठ्य-विषय संबंधी एक प्रश्न गीतिकाव्यों में मेघदूत का स्थान अथवा मेघ के जाने वाले मार्ग का वर्णन अथवा मेघदूत में प्राकृतिक वर्णन (आन्तरिक विकल्प सहित) 5

प्र 9 व्याकरण:-

- क) 1. हल संधि, विराम संधि 2+2=4  
2. हल संधिच्छेद (आन्तरिक विकल्प सहित)
- ख) 1. दो हलन्त शब्दों की रूपावली तीनों वचनों में:-  
राजन्, श्वन्, विद्वस् चन्द्रमस् 3+3=6  
2. दो सर्वनाम शब्दों की रूपावली तीनों लिंगों में:  
युष्मद् अस्मद् तथा तद् (आन्तरिक विकल्प सहित)
- ग) धातुओं के क्रियारूप (केवल परस्मैपद)  
दिवादिगणः नश् नृत् तथा भ्रम्  
(दो धातु प्रत्येक गण से बहुविकल्प सहित) 2+2=4
- ध) कृदन्त प्रत्ययः तुमुनः क्त्वा, ल्यप् अनीयर, यत्।  
(कोई तीन प्रत्यय बहुविकल्प) 3
- इ) अव्यय का सामान्य परिचय उदाहरण सहित 1
- व) समास-बहुव्रीहि और अव्ययीभाव (प्रत्येक समास का एक-एक उदाहरण आन्तरिक विकल्प सहित) 2

प्रतिमानाटक के आखिरी तीन अंक (5,6,7)

Non-evaluative

## PERSIAN

Maximum Marks: 100

Time : 3 Hours

There shall be one theory paper of 100 marks of 3 hours duration that contains three following parts:

1. Language portion of the prescribed textbook 40
2. Prose portion of the prescribed textbook 30

**Selected Chapter:-**

۱. به نام خدا ۲. هند طیب با بیمار ۳. حکایت از گلستان (۱۰۲، ۶)  
۴. شام در رستوران ۵. حکایت از رساله دلگشا (۲، ۴)  
۶. روباه و خروس ۷. ابن سینا و ابن مسکویه

3. Poetry portion of the prescribed textbook 30

**Selected Chapter:-**

۱. گل، آئینه، قرآن ۲. نوبت دیدار ۳. آرام جان ۴. دوست  
۵. مادر ۶. بی ثباتی این جهان (۱-۳) ۷. خصلت  
۸. کدو بن

**Scheme of Assessment:-**

1. Translation of five Persian Sentences into English/Urdu out of eight sentences 5 Marks
2. Translation of five English/Urdu sentences into Persian out of eight sentences 5 Marks
3. One seen passage from "Gulistan-i-Farsi-II" Followed by questions with internal choice. 5 Marks
4. Congugation of Persian verbs with respect to Past, Present and Future tense with internal choice. 5 Marks
5. Fill in the blanks with suitable Persian words with internal choice. 5 Marks
6. (a) To write the meaning and sentences of five Persian words out of eight 5 Marks  
(b) Persian verbs  $2^{1/2} \times 2^{1/2}$
7. Arrangement of sentences 5 Marks
8. To write down the five Persian sentences about any following topic: 5 Marks

بهار در کشمیر، هوای کشمیر، خزان در کشمیر، استاد و مدرسه کتابخانه

### Part - II (Prose)

1. Translation of selected Persian Prose portion into English/Urdu (3 part with internal choice) **(3×5) 15 Marks**
2. Translation of selected prose portion from English/Urdu to Persian (3 part with internal choice). **(3×5) 15 Marks**

### Part - III (Poetry)

1. Translation of one selected Persian verse into English/Urdu (3 parts with internal choice) **(3×5) 15 Marks**
2. Translation and explanation with reference to context of two selected Persian verse into English/Urdu (2 parts with internal choice) **(2×5) 10 Marks**
3. One objective type question consisting of 5MCQs based on prescribed prose and poetry section. **5 Marks**

### Textbook Prescribed

A textbook of Persian entitled **گلستانِ فارسی دوم** for class 12th published by Jammu and Kashmir State Board of school education.

# ARABIC

**Maximum Marks: 100**

**Time : 3 Hours.**

The Paper shall have four Parts i.e. Part-I (Prose), Part-II (Quranic Portion and Al-hadith), Part-III (Writing Skills) and Part-IV (Grammar).

## **Part-I (Prose)**

1. Translation of Quranic Verses of the prescribed textbook into Urdu or English with internal choice. **5 Marks**
2. Translation of Al-hadith and phrases of Arabic into Urdu or English with internal choice. **5 Marks**
3. Explanation with reference to context in Urdu or English based on passage extracted from the prescribed textbook with internal choice. **5 Marks**
4. One literary question pertaining to the topics contained in the prose portion of the textbook. **5 Marks**
5. One question regarding the sum and substance of the topics of prose portion with internal choice. **5 Marks**
6. Meaning of ten words from the prose portion with internal choice. **5 Marks**

## **Poetry-II (Quranic Portion and Al-hadith)**

1. Translation of two poetry sections out of three into Urdu and English. **5 Marks**
2. Explanation with reference to context of two poetry sections out of three into Urdu or English. **5 Marks**
3. One literary question pertaining to the poetry portion of the textbook prescribed. **5 Marks**
4. A note of 100-150 words on life and contribution of a poet prescribed in the textbook. **5 Marks**

## **Part-III (Writing Skill)**

- A. Write a short paragraph in Arabic with internal choice. **5 Marks**
- B. Five multiple choice questions from prose portion of the prescribed textbook. **5 Marks**
- C. Five multiple choice questions from poetry portion of the prescribed textbook. **5 Marks**
- D. Translation of ten simple sentences of Urdu into Arabic. **5 Marks**

Question on Applied Grammar.

The topics are:

- ١- أبواب الفعل الثلاثي المجرد - لم - لزا صب الف  
 ٢- أبواب الفعل الرباعي المجرد - ٥ - حروف الجبر  
 ٣- المشتقات اسم الناعل - اسم المفعول ٤- الأفعال ناقصة  
 ٥- التوابع  
 ٦- اسم الصفة - اسم التفضيل ٧- الأعراب  
 ٨- الحروف المشبهة بالفعل

#### Textbook Prescribed

A textbook of Arabic entitled "تسهيل العربية" for Class-12th published by Jammu and Kashmir State Board of School Education

(۲) نصاب میں شامل شعراء میں سے کسی ایک کے حالات زندگی یا شاعرانہ خصوصیات قلمبند

کرنا۔ (۵ نمبرات)

(۳) شامل نصاب نظموں سے دی گئی دو نظموں میں سے کسی ایک کا خلاصہ تحریر کرنا۔

(۴ نمبرات)

(۴) تین شعری اصناف میں سے کسی ایک شعری صنف پر نوٹ لکھنا۔ (۴ نمبرات)

(۵) دی گئی چار شعری اصطلاحات میں سے دو کی تعریف کرنا اور مثالیں دینا:

(مطلع۔ قافیہ۔ تشبیہ۔ حسن تعلیل۔ تلمیح۔ صفت تجنیس)

یا

منظومات کے آخر پر دیے گئے چار مختصر سوالات میں سے دو کا جواب تحریر کرنا۔ (۶ نمبرات)

حصہ ج ..... (تخلیقی کام)

۱۔ دیے گئے پانچ غیر روایتی عنوانات میں سے کسی ایک پر مضمون تحریر کرنا۔ (۱۰ نمبرات)

۲۔ خط یا درخواست لکھنا (تین میں سے ایک) (۸ نمبرات)

۳۔ کسی واقعہ کی اخباری رپورٹ یا کوئی تشہیری پیغام یا کسی جگہ کی کاروائی تحریر کرنا۔ (۷ نمبرات)

حصہ د ..... اُردو ادب کی تاریخ سے متعلق سوالات اور objective

سوالات

i پوچھے گئے ۴ سوالات میں سے دو کے جوابات:

۱۔ علی گڑھ تحریک

۲۔ ترقی پسند تحریک

۳۔ اُردو زبان کا آغاز و ارتقاء

۴۔ دبستان دلی یا دبستان لکنؤ کی ادبی اہمیت

۵۔ خطوط غالب

(۱۵ = ۷ + ۷ + ۱) نمبرات)

ii نصاب میں شامل نثری اسباق، شعری مشمولات اور تاریخ ادب اور گرائمر پر مبنی دس

(۱۰ = ۱x۱)

Objective سوالات۔

## اُردو

طلبہ کو بہارستان اُردو کی بارہویں کتاب میں شامل نثری اسباق اور منظومات کا مطالعہ کرنا ہوگا۔ امتحان میں شامل کتاب نثری اسباق کے حوالے سے ۲۵ نمبرات کے سوالات پوچھے جائیں گے جب کہ منظومات کے حوالے سے بھی ۲۵ نمبرات کے سوالات پوچھے جائیں گے۔ طلبہ کی تحریری اور تخلیقی صلاحیتوں کو جانچنے کے لیے ۲۵ نمبرات کے سوالات پوچھے جائیں گے جب کہ تاریخ ادب اُردو اور objective نوعیت کے سوالات کے لیے ۲۵ نمبرات مختص ہوں گے۔

امتحانی پرچہ چار حصوں پر مشتمل ہوگا۔ ہر حصے کے حدود خال کچھ اس طرح ہوں گے۔

### حصہ الف ..... نثر

(۱) نثری اسباق سے لیے گئے دو مختصر اقتباسات میں سے مضمون اور مصنف کا حوالہ دے کر ایک کی تشریح کرنا۔  
۵ نمبرات

(۲) نثری اسباق سے لیے گئے دو اقتباسات میں سے کسی ایک کے بارے میں پوچھے گئے تین سوالات کا مختصر جواب لکھنا۔  
۲+۲+۲=۶ نمبرات

(۳) دیے گئے دو اسباق میں سے کسی ایک کا خلاصہ تحریر کرنا (۵ نمبرات)

(۴) نصاب میں شامل اسباق سے متعلق چار میں سے دو سوالات کا جواب لکھنا۔  
۲+۲+۲=۶ نمبرات

(۵) نصابی کتاب میں شامل تین نثر نگاروں میں سے کسی ایک کے حالات زندگی اور ادبی

کارناموں پر روشنی ڈالنا۔ ..... یا

شامل کتاب دو نثری اصناف میں سے کسی ایک پر نوٹ لکھنا۔ (۵ نمبرات)

### حصہ ب ..... شاعری

(۱) نصابی کتاب میں شامل غزلیات سے لیے گئے چھ اشعار میں سے تین اشعار بحوالہ شاعر

تشریح کرنا..... یا

اصناف شعر (ما سوائے غزلیات) سے دیے گئے دو شعری اجزا میں سے کسی ایک کا مفہوم

بحوالہ شاعر و عنوان تحریر کرنا۔ (۶ نمبرات)

### حصہ.....حاعری

☆ کتابہ منر کڈنہ آمتہ اٹھو شعر و منر حاعری بند حوالہ دتھ ژورن ہنز تشریح۔.....4 نمبر

☆ کتابہ منر حاعری منر اکر ہنز زندگی پٹھ نوٹ۔ یا

کدی شعری صلبہ مخلق مختصر نوٹ۔ زنگھر 150 تا 200 لفظن تام۔.....4 نمبر

☆ کتابہ منر حاعری منظوماتن و بندس اُخس پٹھ و بند آمتہ ہنیز مشقی سوالو منر وزن بند جواب۔ زنگھر 100 پٹھ

150 لفظن تام۔.....9=3+3+3 نمبر

☆ اٹھ سبجہ ہے موخمر سوال

1+1+1+1+1+1+1+1=8 نمبر

### حصہ ج.....تخلیقی پتہ تحریری سوال

☆ مزید اشاراتی خاکو منر اُکس پٹھ 200 پٹھ 250 لفظن بند مضمون۔.....10 نمبر

☆ چٹھگر یاد رخاس۔.....8 نمبر

☆ اخباری رپورٹ، میننگہ ہنز کارو آبی، پوسٹریا اشتہار لکھن۔ 7 نمبر

حصہ د.....گرامر

☆ نیمہ جمائو ہنز کاشیر کتابہ منر حاعری پتہ کدی و بند آژن مشقن ہنز حوالہ گرامر۔

15 سوالو منر 10 ہن سوالن ہنز کدی جواب۔

4+4+3+3+3+2+2+2+1+1=25





- ३ རྟག་རྒྱ་དམ་པའི་ཡོན་ཏན་རྣམས། ཞེས་པ་ནས། དམ་པའི་ཡོན་ཏན་སྤྲས་སྐྱུར་གྱིང་། ཞེས་པའི་  
བར།
- ༤ ལྷོ་བོ་ངན་པ་འབྱོར་ཐོབ་གྱིང་། ཞེས་པ་ནས། ལྷོ་བོའི་དབུས་ན་དག་འཛིང་ཅེ། ཞེས་པའི་བར།
- ༥ ལྷོ་རྣམས་འབད་པས་འཛིན་བྱེད་ཅིང་། ཞེས་པ་ནས། ལྷོ་བོ་ངན་པའི་ཚོགས་ནང་། ཞེས་པའི་  
བར།

ག༽ བད་སྐྱོད་དང་སྐྱུར་དག

- ༡ རྫོང་རྒྱ་མི་དོ་བོ་དང་དབྱེ་བ།    ༢ འགོག་རྒྱ་མི་དོ་བོ་དང་དབྱེ་བ།    ༣ དོན་གཞན་གྲོག་  
པའི་རྒྱ་མི་དོ་བོ་དང་དབྱེ་བ།    ༤ ལྷོ་ག་པ་ཅན་རྒྱ་མི་མཚན་ཉིད་དང་དབྱེ་བ།    ༥ ཚོག་དགའ་  
བ་བརྒྱའི་དོན་གྱིས་ཉེ་བརྗོད་པ་བཟོ་རྒྱ།
- ༦ མའོན་བརྗོད་ལས། ས་གཞི། ལྷུང་སྤོང་། ཚངས་པ། འཇམ་པའི་དབུངས། རྩ། ཉ།  
མ། ལྷ། བརྒྱུན།
- ༧ བཤད་པ་ཞིག་འཕྱི་རྒྱ། ལ་དུགས་ཀྱི་ལོ་གསར། ང་ཡི་སྤྱེ་ཡུལ། ཁོར་ཡུག་སྤུང་སྐྱོབ་སྐོར།  
ང་ཡི་དགོ་ཚུ།

# GEOLOGY-XII

Max Marks : 100

Theory : 70

Practicals : 30

Time : 3 Hrs

Unit I	GEODYNAMICS	Marks 12
Unit II	GENERAL GEOLOGY	Marks 12
Unit III	PALAEONTOLOGY	Marks 11
Unit IV	REMOTE SENSING	Marks 10
Unit V	ECONOMIC GEOLOGY	Marks 14
Unit VI	STRUCTURAL GEOLOGY	Marks 11

## Unit I GEODYNAMICS

### A. Volcanoes

- (i) Definition
- (ii) Parts of a Volcano
- (iii) Types of volcanoes
- (iv) Products of volcanoes
- (v) Distribution of volcanoes in the world

### B. Earthquakes

- (i) Definition
- (ii) Causes and effects of earthquakes
- (iii) Focus and epicenter
- (iv) Seismic waves
- (v) Richter scale of earthquake intensity
- (vi) Seismograph and seismograms
- (vii) Seismic belts of the world

## **Unit II      GENERAL GEOLOGY**

A. Elementary study of the interior of the earth.

B. Age of the Earth

- (i) Methods based on rate of sedimentation and rate of increase of salinity of seawater.
- (ii) Radioactive methods, Uranium - Lead ratio method and C<sup>14</sup> method

## **Unit III      PALAENTOLOGY**

A. Morphological description of the following :

- (i) Brachiopoda
- (ii) Bivalvia (Lamelibranchia)
- (iii) Trilobita

B. Systematic position, Stratigraphical range and morphological features of the following genera :  
Spirifer, Productus, Syringothyris, Cardita, Trigonina, Pecten, Calymene, Paradoxides and Agnostus

## **Unit IV      REMOTE SENSING**

- (i) Definition of remote Sensing.
- (ii) Scope and advantages of Remote Sensing.
- (iii) Remote Sensing Platforms viz; Ballons, Air crafts, Rockets and Satellites.
- (iv) Aerial Photography and types of aerial photographs.

## **UNIT V      ECONOMIC GEOLOGY**

- (i) Definition; Economic minerals, Critical, Strategic and Essential minerals.
- (ii) Physical characters, chemical composition and distribution of ores of Copper, Iron and Aluminum in India.
- (iii) Distribution of coal and petroleum in India.
- (iv) Mineral wealth of J&K State.

**A. FOLDS**

- (i) Definition of Fold.
- (ii) Description of the following types of folds: Anti-Clinorium, Synclorium, Symmetrical fold, Asymmetrical fold, Over turned fold, Dome and Basin.

**B. FAULTS**

- (i) Definition of fault
- (ii) Description of the following types of faults : Normal Fault, Reverse fault, Step fault, Horst and Graben, Thrust fault and strike slip fault.

**C. UNCONFORMITY**

- (i) Definition of Unconformity
- (ii) Types and importance of unconformities

**PRACTICALS**

Max Marks : 30

Time : 3 Hrs

Internal Assessment : 10

External Assessment : 20

1. Systematic position, Stratigraphical range and description (with suitable sketches) of the following genera :  
Spirifer, Productus, Syringothyris, Cardita, Trigonina, Pecten, Calymene, Paradoxides and Agnostus.
2. Megascopic, description and identification of the following minerals. Hornblende Orthoclase, Hematite, Chalcopyrite, Malachite, Bauxite, Quartz, Muscovite, Biotite, Megacrite, Beryl, Tourmaline and Galena
3. Drawing of a section of a simple geological map.
4. Fieldwork and viva-voce : Field Work compulsory for at least fifteen days.

**Books Suggested :-**

1. A Textbook of Geology by P.K Mukherjee
2. A Textbook of Palaentology by S.K Chadha
3. Engineering Geology by K.M Banger
4. Ruttleys Elements of Mineralogy by H.H Read
5. Principles of Remote Sensing by Surindera & Patel.

# PUBLIC ADMINISTRATION

## (INDIAN ADMINISTRATION)

Maximum Marks: 100

Time: 3 hours

### Unit I: Historical Background

Ancient Indian Administration, Delhi Sultanate and Mughal Administration, British Administration in India. Indian Administration - Continuity and Change.

### Unit II: Indian Constitution

Formulation of Indian Constitution and Constituent Assembly Salient Features of Indian Constitution. Fundamental Rights and Duties.

### Unit III: Central Administration

President, Prime Minister and Parliament and Judiciary Cabinet Secretariat; Ministries and Departments

### Unit IV: Personnel Administration in India

Evolution of Civil Service in India, Recruitment Training Process; Recruitment Agencies; UPSC and JKPS

### Unit V: Planning in India

NITI AAYOG- Role, Composition and Function; National Development Council; Finance Commission; National Informatics Centre

### Unit VI: Centre State Relations

Union—State Administrative, Legislative and Financial Relations, Emerging Contours and Issues

### Unit VII: State Administration

Governor; Chief Minister, Council of Ministers; Chief Secretary; State Secretariat and Directorates

### Unit VIII: District Administration

Institution of Deputy Commissioner and Changing Role of the Deputy Commissioner; District Administration and Democratic Decentralization

### Unit IX: Rural and Urban Government

Rural Local Government and Panchayati Raj; Main Features and Structures; 73rd Constitutional Amendment;  
Urban Local Government; Main Features and Structures; 74th Constitutional Amendment

### Unit X: E-Governance

Concept and Meaning of E-Governance; Application of E-Governance In Jammu and Kashmir, Khidmat Center and Himayat

## Secheme of Assessment for Public Administration

( Class HSP -II)

Total weightage = 100 marks

Time : 3.00 hrs

- |   |                |
|---|----------------|
| 1) 3 very long type questions (250-300 words) of 10 marks each with internal choice | 3x10= 30 marks |
| 2) 3 long type questions (200-250 words) of 8 marks each with internal choice       | 3x8 =24 marks  |
| 3) 6 short answer type questions with internal choice of 4 marks each :             | 6x4=24 marks   |
| 4) 4 very short answer type questions with internal choice of 3 marks each :        | 4x3=12 marks   |
| 5) 10 MCQ's of 01 marks each  | 10x1= 10 marks |

### Suggested Readings

Aravind, S., Indian Administration, Himalaya Publishing House, New Delhi, 1992.

Avasti and Avasti, Indian Administration, Lakshmi Narain Agarwal, Agra, 1998.

Basu, D.D., An Introduction to the Constitution a India, Prentice Hall, New Delhi, 2006.

Fadia, B.L. & Fadia, Kuldeep-Indian Administration-Sahitya Bhawan Publications, 2005, Agra

General Studies Manual, Tata McGraw Hills, New Delhi, 2008

Gupta, M.C. and Kamal N. Kabra, Public Administration in India, Gyan Publishing House, New Delhi, 1999.

Jain R.B., Public Administration in India: 21st Century Challenges for Good Governance, Deep and Deep Publications, New Delhi, 2002.

Kashyap Subash, C. Our Constitution, NBT, New Delhi, 1994.

Krishna K. Tummala, Public Administration in India, Allied Publishers Limited, New Delhi, 1996.

Laxmikanth, Indian Polity, Tata McGraw Hills, New Delhi, 2008

Maheshwari, S.R., (2000) Indian Administration, Orient Longman, New Delhi,

Ramesh K. Arora and Rajni Goyal. Indian Public Administration-Institution and Issues, Wishwa Prakashan, New Delhi, 2004.

Sriram Maheshwari, Indian Administration, Orient Longman, New Delhi, 2000.

Vishnu Bhagawan and Vidya Bhushan, Indian Administration, S.Chand & Company. 1994.

# FUNCTIONAL ENGLISH

Max. Marks: 100

Time: 3 hrs.

## A) Literature Reader II

### Prose:

- The Turning Point
- Polar Meltdown
- Forests – Desperate Measures Needed Taking up Challenge

### A

One question based on the reading comprehension of prose passage of 10 marks, followed by questions such as multiple choice questions; fill in the blanks, true / false, vocabulary etc. (seen Vs unseen) **(1 × 10 = 10 marks)**

One questions based on the summary / precise of the given prose of 10 marks with internal choice (seen Vs unseen) **(10 × 1 = 10 marks)**

One question of 05 marks on the textual understanding of prose lesson with internal choice. **(5 × 1 = 5 marks)**

### Short Stories

- Some Hill Stations Ghosts
- The Rightful Inheritor the Earth
- Ha' Penny
- The Devil Outwitted

One question based on the reading comprehension of short story followed by question based on vocabulary, fill in the blanks, true / false or a question based on the development of a story from a given outline and theme. **(10 × 1 = 10 marks)**

One question of 05 marks based on the moral / theme / style etc. with internal choice **(5 × 1 = 5 marks)**

### Poetry

- Abraham Lincoln's Letter to His Son's Teacher
- The Secret Machines

Two question based on the stanzas of the poem followed by questions with internal choice. This shall carry 03 marks. **(03 × 2 = 6 marks)**

Three very short answer type questions based on literary devices, of two marks with internal choice, also by asking about broader terms in general such as metaphor, simile, imagery etc. **(03 × 2 = 6 marks)**

## Drama

- Don't Call Out or You'll Be Shot
- The Count's Revenge

One question based on the description of event / situation / character / theme / conversation etc. of 08 marks with internal choice. (8 × 1 = 8 marks)

One question on note making or note taking of a given passage with internal choice. (5 marks)

One question on writing of an advertisement on the given caption with internal choice. (classified vs commercial) (5 marks)

One question based on the writing of memorandum on any given topic with internal choice. (5 marks)

One question on writing of a circular on a given topic with internal choice (5 marks)

One question on writing of report on any of the given topics with internal choice. (5 marks)

One question based on the formation of tables, bar charts, histograms etc. and their interpretation on the given topics with internal choice (5 marks)

One question on the editing / proof reading of the given prose passage. (5 marks)

One question on writing the notes on any one of the following topics:

- a) Dialect                      b) Accent                      c) Register                      d) Style (5 marks)

## Books Suggested

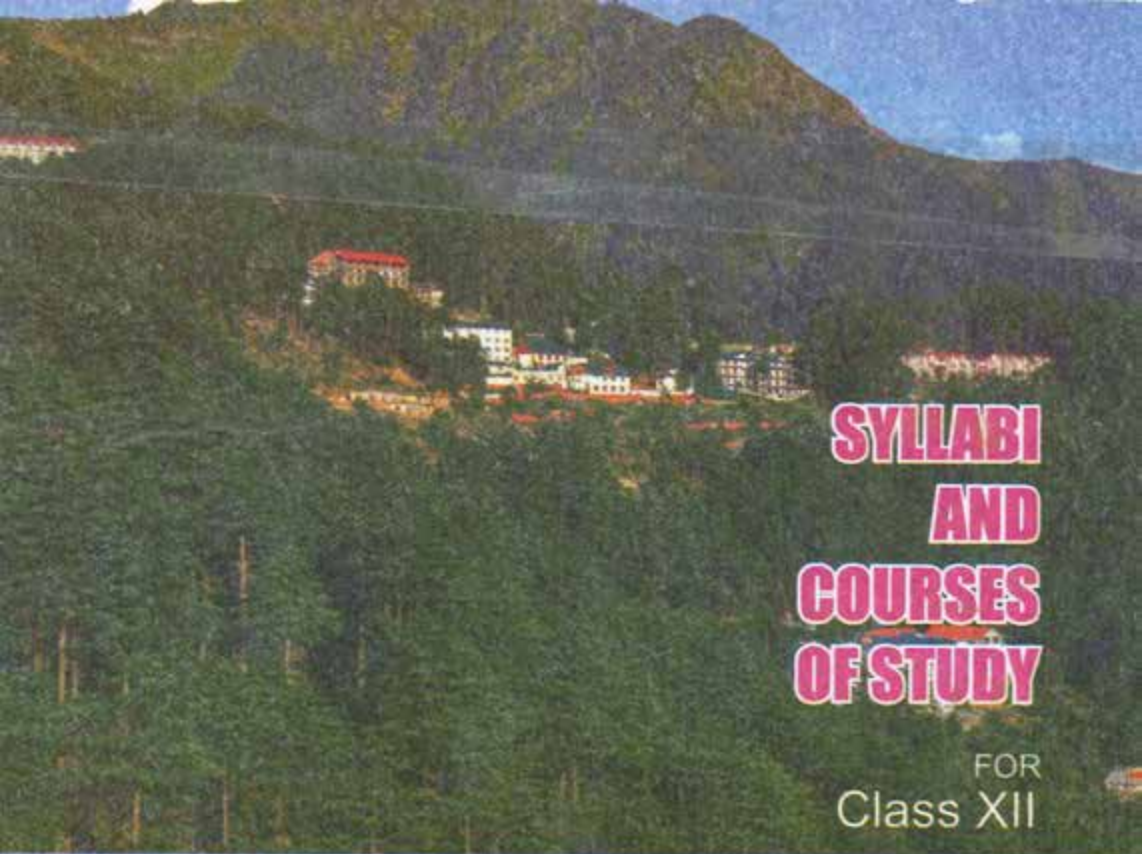
- Textbook of Functional English Published by Goyal Brothers in Collaboration with J&K State Board of School Education.
- Literature Reader II
- Language Skills Book











**SYLLABI  
AND  
COURSES  
OF STUDY**

FOR  
Class XII



**The Jammu & Kashmir State Board of School Education**



**The Jammu & Kashmir  
State Board of  
School Education**

# **SYLLABI AND COURSES OF STUDY**

FOR

**Class XI**

**Kashmir Division/Jammu Division (Winter Zone) 2017-18  
Jammu Division (Summer Zone) 2018-19**

Published By  
**THE JAMMU & KASHMIR STATE BOARD OF SCHOOL EDUCATION**

The Jammu and Kashmir State Board of School Education



**SYLLABI AND COURSES OF STUDY  
FOR**

**CLASS XI**

Kashmir Division/Jammu Division (Winter Zone) 2017-18  
Jammu Division (Summer Zone) 2018-19

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**The J&K State Board of School Education**  
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## SCHEME OF STUDIES/ COMBINATION OF SUBJECTS

The Scheme of Studies and the combination of subjects at +2 stage has been prepared as per new scheme of studies. The combination of subjects is as per the standard at National Level particularly the standard set by the CBSE and other Boards has vertical linkage with under graduate courses offered by the University of Kashmir, Jammu and other national institutes.

The students who will seek admission in Higher Secondary Part-I (Class 11<sup>th</sup>) from the academic Session (Oct-Nov). 2017 in case of Kashmir Division including Winter Zone of Jammu Division and Academic Session (April-May) 2018 in case of Summer Zone areas of Jammu Division shall follow the given below Scheme/ Combination of subjects.

### **Subject Combination at Higher Secondary Part-I**

#### **Faculty of Science:**

Group-I	Group-II	Group-III	Group-IV	Group-V	Group-VI	Group-VII	Group-VIII Vocational Courses level-III
General English (Compulsory)	Physics (Compulsory)	Chemistry (Compulsory)	Mathematics Applied-Mathematics	Biology Statistics Geography	Geography Biotechnology Microbiology Biochemistry	Computer-Science. Information-Practices. Environmental-Science. Functional-English. Physical-Education. Islamic Studies Vedic Studies Buddhist-Studies Electronics.	IT & ITes. Retail. Healthcare. Tourism. Security. Agriculture. Telecommunication Media and Entertainment. Beauty and Wellness. Physical Education and Sports

- Note:** i- A student shall have to opt any two subjects from IV to VII group, but not more than one from each group (for non Vocational students only).  
ii-The students who have passed Vocational subject/s at level 1 and level 2 and intend to opt for Vocational subject at Higher Secondary Part-1<sup>st</sup> (Level-3) will have to opt 5<sup>th</sup> subject from Group VIII.

#### **Faculty of Home Science:**

Group-I	Group-II	Group-III	Group-IV	Group-V	Group-VI Vocational Course (Level-III)
General English (Compulsory)	Family, Health Care & Prevention. (Compulsory)	Food Science (Compulsory)	Management of Resources. (Compulsory)	Computer Science. Information Practices Environmental Science Functional English Islamic Studies Vedic Studies Buddhist Studies Physical Education Travel, Tourism & Hotel Management	IT & ITes. Retail. Healthcare. Tourism. Security. Agriculture. Telecommunication Media and Entertainment. Beauty and Wellness. Physical Education and Sports

- Note:** i- A student shall have to opt any one subjects from V.(for non vocational students only).  
ii-The students who have passed their Vocational subject at level 1 and level 2 and intend to opt vocational subject at Higher Secondary Part-1<sup>st</sup> (Level-3), will have to opt 5<sup>th</sup> subject from Group VI.

## Faculty of Commerce:

Group-I	Group-II	Group-III	Group-IV	Group-V	Group-VI	Group-VII Vocational Courses level-III
General English (Compulsory)	Business Studies (Compulsory)	Accountancy Mathematics	Entrepreneurship Or Economics	Type writing & Shorthand Business-Mathematics Public Administration	Computer- Science. Information-Practices. Environmental-Science. Functional-English. Islamic Studies Vedic Studies Buddhist-Studies Physical-Education. Education Travel, Tourism & Hotel Management	IT & ITes. Retail. Healthcare. Tourism. Security. Agriculture. Telecommunication Media and Entertainment. Beauty and Wellness. Physical Education and Sports

- Note:**
- A student shall have to opt any two subjects from IV-VI group but not more than one from each group (for non vocational students only).
  - The students who have passed their Vocational subject at level 1 and level 2 and intend to opt for Vocational subject at Higher Secondary Part 1<sup>st</sup> (Level-3) will have to opt any one subject from Group IV to Group VI and 5<sup>th</sup> subject from Group VII.

## Faculty of Humanities:

Group-I	Group-II	Group-III	Group-IV	Group-V	Group-VI	Group-VII	Group-VIII	Group-IX Vocational Courses level-III
General English (Compulsory)	Urdu Hindi Kashmiri Dogri Punjabi Bhoti	Arabic Sanskrit Persian Economics	Mathematics Applied-Mathematics Sociology	Psychology Music Geography Philosophy Education	History Home-Science (Elective) Public Administration	Statistics Political Science	Computer- Science. Information-Practices. Environmental-Science. Functional-English. Islamic Studies Physical-Education. Education Travel, Tourism & Hotel Management English Literature Vedic Studies. Buddhist Studies.	IT & ITes. Retail. Healthcare. Tourism. Security. Agriculture. Telecommunication Media and Entertainment. Beauty and Wellness. Physical Education and Sports

**Note:**

- A student shall have to opt any four subjects from II-VIII group but not more than one from each group (for non vocational students only).
- The students who have passed their Vocational subject/s at level 1 and level 2 and intend to opt for Vocational courses at Higher Secondary Part -1st (Level-3) will have to opt any three subjects from Group No. II to Group VIII and 5th subject from Group No. IX.
- No repetition/similarity or incomplete combination of subjects is allowed.
- While choosing subjects students are advised to opt for such subjects or combination of subject which are available and taught in the institution as per the above mentioned.

## SCHEME OF ASSESSMENT/EXAMINATION

The Higher Secondary Part-1<sup>st</sup> (11<sup>th</sup>) Examination conducted by the Board at the end of academic session on the basis of syllabi prescribed for class 11th is open to eligible candidates and shall be conducted according to the following scheme of examination.

### Marks

Subject	Theory Marks	Practical Marks		Total Marks
		Internal Assessment	External Examination	
1- General English	100	---	---	100
2- History	90	Project work 10 marks	---	100
3- Economics	90	10 marks project/Viva	---	100
4- Geography	70	10 marks	20 marks	100
5- Political Science	100	---	---	100
6- Philosophy	100	---	---	100
7- Education	100	---	---	100
8- Psychology	70	10	20	100
9- Sociology	100	---	---	100
10- Home Science (Elective)	70	10	20	100
11- Music	50	25	25	100
12- Statistics	70	10	20	100
13- Mathematics	100	---	---	100
14- Islamic Studies	100	---	---	100
15- Vedic Studies	100	---	---	100
16- Hindi	100	---	---	100
17- Dogri	100	---	---	100
18- Philosophy	100	---	---	100
19- Bhoti	100	---	---	100
20- Punjabi	100	---	---	100

21- Public Administration	100	---	---	100
22- English Literature	100	---	---	100
23- Urdu	100	---	---	100
24- Kashmiri	100	---	---	100
25- Arabic	100	---	---	100
26- Persian	100	---	---	100
27- Buddhist	100	---	---	100
28- Applied	100	---	---	
28- Physics	70	10	20	100
29- Chemistry	70	10	20	100
30- Biology	70	10	20	100
31- Geology	70	10	20	100
32- Biotechnology	70	10	20	100
33- Microbiology	70	10	20	100
34- Environmental	70	10	20	100
35- Functional English	100	---	---	100
36- Bio-Chemistry	70	10	20	100
37- Computer Science	70	10	20	100
38- Information Practices	70	10	20	100
39- Physical Education	70	10	20	100
40- Electronics	70	10	20	100
41- Family Health Care & Prevention	70	10	20	100
42- Food Science	70	10	20	100
43- Management of Resources	70	10	20	100
44- Accountancy	80	05	15	100
45- Entrepreneurship	70	10	20	100
46- Typewriting & Shorthand		50	50	100
47- Business Mathematics	90	10 Project Work	---	100
48- Travel, Tourism Hotel Management	100	---	---	100

**A- Subjects having weightage of 70 marks for Theory and 30 marks for Practical's**

**Maximum Marks: 70**

**Time Allowed: 3 hrs**

Pattern of Questions	Marks per Question	No. of Questions	Total Marks
Long Answer type	05 marks	4	20
Short Answer Type	03 marks	8	24
Very Short Answer type	02 marks	8	16
Objective type	01 mark	10	10
		<b>30</b>	<b>70</b>

Note: There shall be internal choice in case of long answer type questions only.

**B- Subjects having weightage of 90 marks for Theory and 10 marks for Practical's**

Pattern of Questions	Marks per Question	No. of Questions	Total Marks
Long Answer type	5 marks	6	30
Short Answer Type	3 marks	10	30
Very Short Answer type	2 marks	10	20
Objective type	1 mark	10	10
		<b>36</b>	<b>90</b>

**C- Subjects having weightage of 80 marks for Theory and 20 marks for Practical's**

Pattern of Questions	Marks per Question	No. of Questions	Total Marks
Long Answer type	5 marks	5	25
Short Answer Type	3 marks	9	27
Very Short Answer type	2 marks	9	18
Objective type	1 mark	10	10
		<b>33</b>	<b>80</b>

Note: There shall be internal choice in case of long answer type questions only.

**D- Subjects having weightage of 100 marks (except languages) for Theory.**

Pattern of Questions	Marks per Question	No. of Questions	Total Marks
Long Answer type	6 marks	5	30
Short Answer Type	4 marks	10	40
Very Short Answer type	2 marks	10	20
Objective type	1 mark	10	10
		<b>35</b>	<b>100</b>

Note: There shall be internal choice in case of long answer type questions only.

**E- Subjects having weightage of 50 marks for theory and 50 Marks for practical's**

Pattern of Questions	Marks per Question	No. of Questions	Total Marks
Long Answer type	6 marks	3	18
Short Answer Type	4 marks	4	16
Very Short Answer type	2 marks	5	10
Objective type	1 mark	06	6
		<b>18</b>	<b>50</b>

Note: There shall be internal choice in case of long answer type questions only.

**Code : 201**

## **GENERAL ENGLISH**

### **I. General aims of Teaching English**

1. To develop student's ability to use English language accurately, appropriately, effectively and fluently for communication in various situations.
2. To develop student's ability to read and understand texts in English on different subjects and topics with minimal help from teachers.
3. To develop student's ability to use English language appropriately for effective written communication.
4. To hone their ability to listen to and understand English language when used in academic and social situations.
5. To enable students to become self reliant for learning many aspects of language and also to learn other content subjects.
6. To enrich their knowledge of grammar for accurate and precise communication.
7. To enrich their vocabulary and to enable them to use words most appropriate to situations.
8. To develop their skills to read and appreciate literature and develop a liking towards English language.

### **II. Domains**

The major domains of teaching English are:

1. Listening
2. Speaking
3. Reading
4. Writing
5. Communication
6. Grammar
7. Vocabulary

8. Study Skills
9. Literary skills

### III. Specific Objectives of Teaching English as a Second language in Class XI

#### A. Listening

1. To develop students' ability to listen to and understand instructions.
2. To develop their ability to listen to lectures, talks, interviews on familiar topics and get specific items of information.
3. To develop their ability to listen to and get an overall idea of the content of lectures, talks, discussions etc.
4. To develop their ability to gather almost full information by listening to live discussions, talks, lectures and also by listening to radio and television.

#### B. Speaking:

1. To enable students to pronounce words and phrases accurately.
2. To use pauses meaningfully in long utterances.
3. To use the right intonation to communicate the intended meaning.
4. To read prose passages, dialogues and poems aloud with correct pronunciation, stress and intonation.

#### C. Communication:

1. To enable students to use English language in day to day situations for common communicative functions.
2. To enable students to use English language appropriately in academic and social situations.
3. To enable students to speak reasonably fluently, with minimal hesitations.

#### D. Reading:

1. To enable students to read and understand prose and poems on a variety of academic and general topics from textbooks, reference sources and other common sources such as newspapers and magazines.

2. To enable students to employ the right reading strategies to suit the purpose of reading.
3. To develop students' ability to read and gather specific items of information from a variety of sources.
4. To develop their ability to read for an overall idea of the content of texts.
5. To develop their ability to read texts for full understanding.
6. To develop their ability to read fluently with reasonable degree of comprehension.
7. To develop in students an interest towards English Literature.

**E. Writing:**

1. To familiarize students with qualities of good and effective writing.
2. To develop their ability to write coherently and cohesively.
3. To develop their ability to write accurately and appropriately using language appropriate to the audience, situation and purpose of writing.
4. To develop their ability to write short paragraphs and essays on variety of topics.
5. To develop their ability to use English for writing letters for a variety of purposes.
6. To develop their ability to use English for e-mail communication.

**F. Study Skills:**

1. To sharpen their ability to use dictionary as a reference tool.
2. To develop their ability to read and make notes for study purposes.
3. To develop their ability to transcend information from verbal to visual format and vice-versa.
4. To develop their ability to make summaries of long prose passages.

**G. Grammar:**

1. To enhance their understanding of grammatical concepts.
2. To develop their ability to apply grammar rules in communicative situations.
3. To develop their ability to monitor their own language behavior.

4. To develop their ability to use the knowledge of grammar while listening, speaking, reading and writing.

**H. Vocabulary:**

1. To enrich their vocabulary.
2. To familiarize them with the concepts of synonyms, antonyms, collocations etc.
3. To develop their ability to use words most appropriate to the communicative situation.
4. To equip them with the strategies to cope up with unfamiliar words while reading texts in English.

**IV Course Books Prescribed:**

1. *Chinar I* – An Anthology of Prose and Poetry for class XI – Published by Cambridge University Press in cooperation with Jammu and Kashmir State Board of School Education.
2. A Course in English Grammar and Composition – for classes XI and XII, Published by Cambridge University Press in cooperation with Jammu and Kashmir State Board of School Education.

## SYLLABUS CLASS XI

### GENERAL ENGLISH

Total M. Marks = 100

Time: 3 Hrs

#### SECTION:- A (LITERATURE)

Marks:- 40

- Q.1 One LAT question (100 Words) from prose based chapters on character sketch/ discription of Scene/ title etc be attempted out of two. 01x08= 08
- Q.2 One LAT question (100 Words) from poetry based on theme/ style/ critical appreciation etc to be attempted out of two. 01x07= 07
- Q.3 Two SAT questions (50-80 Words) from prose to be attempted out of four. 02x05= 10
- Q.4 Three SAT questions from poetry based on poetic devices to be attempted out of five. 03x03= 09
- Q.5 One reference to the context type question based on prose/ poetry to be attempted out of two. 01x06= 06

#### SECTION:- B (READING COMPREHENSION)

Marks:- 15

- Q.6 One out of two poetic passages from the textbook followed by questions and MCQ's, fill ups etc. 01x05= 05
- Q.7 One / Two unseen prose passages followed by comprehension questions:
- (a) T/F, Yes/No, MCQ's and Fill ups 01x05 = 05
  - (b) Vocabulary (word meaning, collocation, spelling, synonym/ antonym, homophones, homonyms ect) 01x05= 05

## SYLLABUS CLASS XI

### SECTION:- C (WRITING SKILLS)

Marks:- 20

- I. Paragraph writing (Descriptive/ narrative) (60-80 word) with internal choice. 01x04 = 04
- II. Essay Writing (100-150 word) with internal choice  
(The examiner will give some clues regarding the topic) 01x07= 07
- III. Letter Writing (Formal/ Informal) with internal choice. 01x04 = 04
- IV. Note Making 01x05 = 05

### SECTION:- D (GRAMMAR)

Marks:- 25

- I. Simple, Compound, Complex sentences
- II. Tenses
- III. Auxiliaries
- IV. Relative Clauses
- V. Conditional Clauses

5x5 = 25

**HISTORY**  
Introduction to World History

Maximum Marks: 100  
Theory: 90 marks

Time: 3 hours  
Project: 10 marks

Unit

Section A: Early Societies

- |    |   |   |
|----|---|---|
| 1. | From the beginning of time.   | 6 |
|    | <p><b>Focus:</b> Africa, Europe till 15000 B.C.</p> <p>a) Views on the origin of Human beings</p> <p>b) Early societies</p> <p>c) Historians' views on present day hunter-gathering societies</p> |   |
| 2. | Early Cities  | 6 |
|    | <p><b>Focus:</b> Iraq 3<sup>rd</sup> Millennium B.C.</p> <p>a) Growth of towns</p> <p>b) Nature of early urban societies</p> <p>c) Historians' debate of uses of writing</p>                      |   |

Section B: Empires

- |    |  |   |
|----|--|---|
| 3. | An empire across three continents  | 9 |
|    | <p><b>Focus:</b> Roman Empire, 27 B.C. to AD 600</p> <p>a) Political evolution</p> <p>b) Economic expansion</p> <p>c) Religion</p> <p>d) Late Antiquity</p> <p>e) Debate on the institution of slavery</p> |   |
| 4. | Central Islamic lands  | 8 |
|    | <p><b>Focus:</b> 7<sup>th</sup> to 12<sup>th</sup> Centuries</p> <p>a) Polity</p> <p>b) Economy</p> <p>c) Culture</p> <p>d) Historians' viewpoints on the nature of the crusaders</p>                      |   |
| 5. | Nomadic Empires  | 8 |
|    | <p><b>Focus:</b> The Mongol, 13th to 14th Century</p> <p>a) The nature of nomadism</p> <p>b) Formation of empires</p>  |   |

## SYLLABUS CLASS XI

- c) Conquests and relations with other states
- d) Historians' view on nomadic societies and state formation

### Section C: Changing Traditions

#### 6. Three orders 8

**Focus:** Western Europe, 13th to 16th Century

- a) Feudal society and economy
- b) Formation of states
- c) Church and society
- d) Historians' view on decline of feudalism

#### Project Work: Project No. 1 - Heritage sites of J&K State 5

#### 7. Changing Cultural traditions 9

**Focus:** Europe 14th to 17th Century

- a) New ideas, and new trends in literature and arts
- b) Relationship with earlier ideas
- c) The contribution of the West Asia
- d) Historians' viewpoints on the validity of the notion 'European Renaissance'

#### 8. Confrontation of cultures 9

**Focus:** America, 15th to 18th Century

- a) European voyages of exploration
- b) Search for gold; enslavement, raids, extermination
- c) Indigenous people and cultures-the Arawaks, the Azetecs, the Incas
- d) The history of displacements
- e) Historians' viewpoints on the slave trade

### Section D: Paths to Modernization

#### 9. The Industrial Revolution 9

**Focus:** England, 18th and 19th Centuries

- a) Innovations and 19th Centuries
- b) Pattern of growth

- c) Emergence of working class
- d) Historians' viewpoint, debate on 'was there an industrial Revolution'

**10. Displacing indigenous People**

9

**Focus:** North America and Australia, 18th to 20th Century

- a) European colonists in North America and Australia
- b) Formation of white settler societies
- c) Displacement and repression of local people
- d) Historians' viewpoints on the impact of European settlement on indigenous population

**11. Paths to modernization**

9

**Focus:** East Asia, late 19th and 20th Century

- a) Militarisation and economic growth in Japan
- b) China and the communist alternative
- c) Historians' debate on the meaning of modernisation

**Project work: Project No. 2 - Bhakti and Sufi traditions in J&K State/ Arts and Crafts in J&K State**

5

**BOOKS SUGGESTED:**

Theme in History NCERT New Delhi

**Code : 214**

## **ECONOMICS**

**M. Marks: 100**  
**Theory: 90 Marks**  
**Practical: 10 Marks**

**Time: 3 hours**

### **Unit 1: Introduction**

**7 marks**

What is Economics ?

Meaning: scope and importance of statistics in Economics

### **Unit 2: Collection, Organisation and Presentation of Data. 13 marks**

- Collection of data- Sources of data- primary and secondary; how basic data is collected: Methods of collecting data; Some important sources of secondary data; Census of India and National Sample Survey Organization.
- Organisation of Data: Meaning and types of variables; Frequency Distribution.
- Presentation of Data: Tabular Presentation and Diagrammatic Presentation of data
  - i) Geometric forms (bar diagram and pie diagrams.
  - ii) Frequency diagrams (histogram, polygon and ogive) and
  - iii) Arithmetic line graphs (time series graph).

### **Unit 3: Statistical Tools and Interpretation**

**20 marks**

(For all the numerical problems and solutions, the appropriate economic interpretation may be attempted. This means, the students need to solve the problems and provide interpretation for the results derived).

- Measures of Central Tendency- mean (simple and weighted), median and mode.
- Measures of Dispersion- absolute dispersion (range, quartile deviation, mean deviation and standard deviation); relative dispersion (co-efficient of variation); Lorenz Curve: Meaning and its application.
- Correlation- meaning, scatter diagram; Measures of correlation- Karl Pearson's method (two variables ungrouped data), Spearman's rank correlation.
- Introduction to Index Numbers- meaning, types- wholesale price index, consumer

price index and index of industrial production, uses of index numbers; Inflation and index numbers.

**Unit 4: Developing Projects in Economics**

**10 marks**

The students may be encouraged to develop projects, which have primary data, secondary data or both. Case studies of a few organization/ outlets may also be encouraged. Some of the examples of the projects are as follows (they are not mandatory but suggestive);

- i) A report on demographic structure of your neighborhood;
- ii) Consumer awareness amongst households
- iii) Changing prices of a few vegetables in your market
- iv) Study of a cooperative institution: milk cooperatives

The idea behind introducing this unit is to enable the students to develop the ways and means by which a project can be developed using the skills learned in the course. This includes all the steps involved in designing a project starting from choosing a title, exploring the information relating to the title collection of primary and secondary data, analyzing the data, presentation of the project and using various statistical tools and their interpretation and conclusion

**UNIT 5.**

**10 Marks**

**Indian Economic Development:  
Development Policies and Experience (1947-90):**

- A brief introduction of the state of Indian economy on the eve of independence.
- Common goals of Five Year Plans.

- Main features, problems and policies of agriculture (institutional aspects and new agricultural strategy, etc.), industry (industrial licensing, etc.) and foreign trade

**UNIT 6**

**Economic Reforms since 1991: 10 marks**

- Need and main features- liberalization, globalisation and privatization;
- An appraisal of LPG policies

**UNIT 7**

**Current Challenges Facing Indian Economy 20 marks**

- Poverty- absolute and relative; Main programmes for poverty alleviation; A critical assessment
- Rural development: Key issues- credit and marketing role of cooperatives, agricultural diversification ; alternative farming organic farming
- Human Capital Formation; how people become resource; Role of human capital in economic development; Growth of Education Sector in India
- Employment: Growth, informalisation and other issues; Problems and policies
- Infrastructure: Meaning and types: Case Studies: Energy and Health: Problems and Policies- A critical assessment ;
- Sustainable Economic Development.  
Meaning: Effects of Economic Development on Resources and Environment

**UNIT 8**

**Developing Experience of India: 10 marks**

- A Comparison with neighbors
- India and Pakistan
- India and China

**Issues: growth, population, and other developmental indicators.**

Code : 215

## GEOGRAPHY

Maximum Marks: 100

Theory: 70 marks

Time: 3 hours

Practical: 30 marks

### A. Fundamentals of Physical Geography

#### Unit I: Geography as a Discipline 5 marks

- ♦ Geography as an integrating discipline, as a science of spatial attributes ;
- ♦ Branches of geography, importance of physical geography

#### Unit II: The Earth 5 marks

- ♦ Origin and evolution of the earth; interior of the earth Wegener's continental drift theory and plate tectonics; Earthquakes and volcanoes;

#### Unit III: Land Forms 6 marks

- ♦ Rocks and minerals –major types of rocks and their characteristics;
- ♦ Land forms and their evolution
- ♦ Geomorphic processes-weathering, mass wasting, erosion and deposition; soils – formation

#### Unit IV: Climate 11 marks

- ♦ Atmosphere- compositions and structure, elements of weather and climate;
- ♦ Insolation-angle of incidence and distribution; heat budget of the earth – heating and cooling of atmosphere (conduction, convection, terrestrial radiation, advection): temperature – factors controlling temperature; distribution of temperature-horizontal and vertical; inversion of temperature

- ◆ Pressure- pressure belts; winds-planetary seasonal and local, air masses and fronts; tropical and extra tropical cyclones;
- ◆ Precipitation –evaporation ; condensation –dew, frost, fog, mist and cloud; rainfall –types and world distribution ;
- ◆ World climates–classification (Koeppen), greenhouse effect, global warming and climatic changes.

**Unit V : Water (Oceans)**

**4 Marks**

- ◆ Hydrological Cycle ;
- ◆ Oceans – submarine relief; distribution of temperature and salinity; movements of ocean water waves, tides and currents.

**Unit VI : Life on the Earth**

**4 Marks**

- ◆ Biosphere - importance of plants and other organisms; biodiversity and conservation; ecosystems, bio-geochemical cycle, and ecological balance.

**B. India–Physical Environment**

**Unit VII : Introduction**

**5 Marks**

- ◆ Location – space relations and India's place in the world.

**Unit VIII : Physiography**

**7 Marks**

- ◆ Structure and Relief;
- ◆ Drainage systems: concept of water sheds; the Himalayan and the Peninsular ;
- ◆ Physiographic divisions.

**Unit IX : Climate, Vegetation and Soil**

**14 Marks**

- ♦ Weather and Climate – spatial and temporal distribution of temperature, pressure, winds and rainfall; Indian monsoons: mechanism, onset and variability – spatial and temporal; climatic types;
- ♦ Natural vegetation –forest types and distribution; wild life; conservation; biosphere reserves ;
- ♦ Soils – major types (ICAR's classification) and their distribution, soil degradation and conservation.

**Unit X : Natural Hazards and Disasters: Causes, Consequences and Management (One case study to be introduced for each tropic)**

**9 Marks**

- ♦ Floods and droughts
- ♦ Earthquakes and Tsunami
- ♦ Cyclones
- ♦ Landslides

**C Practical Work**

**Unit I: Fundamentals of Maps**

- ♦ Maps – types ; scales –types ; construction of linear scales, measuring distance finding direction and use of symbols;
- ♦ Latitude, Longitude and time ;
- ♦ Map projection – typology, construction and properties of conical with one standard parallel and Mercator's projection.

**Unit II: Topographic and Weather Maps**

**30 Marks**

- ♦ Study of topographic maps (1:50,000 or 1:25,000, Survey of India Maps) : contour cross section and identification of landforms – slopes hills, valleys, waterfalls, cliff; distribution of settlements;

- ♦ **Aerial Photographs and Satellite Images ;**  
*Aerial Photographs:* Types and Geometry – vertical aerial photographs; difference between maps and aerial photographs; photo scale determination.  
*Satellite images:* Stages in remote sensing data acquisition, platform and sensors and data products (photographic and digital)  
Interpretation of physical and cultural features from aerial photographs and satellite imageries.
- ♦ **Use of weather instruments:** thermometer, wet and dry – bulb thermometer, barometer wind vane, rain gauge.
- ♦ **Use of weather charts:** describing pressure, wind and rainfall distribution .

Code : 220

**POLITICAL SCIENCE**

Maximum Marks: 100

Time: 3 hours

**Unit : I****Indian Constitution at work:**

1. **Making of the constitution:** why do we need constitution? What does a constitution do? Who made our constitution? How did the country's partition affect the working of the constitution assembly? What were the sources of constitution? **4 Marks**
2. **Fundamental Rights:** Why do we need for a bill of rights in the constitution? What are the fundamental rights provided by the constitution? Why was the right of the property removed from fundamental rights? How have the interpretation by the courts influenced Fundamental Rights? How has provision of Fundamental Rights provided the basis for civil liberties movement in India? What are the fundamental Duties? **6 Marks**
3. **System of representational democracy:** What are the different methods of election? How do these methods affect parties and politics? Why was the post system chosen in India? What have been the effects of this system? Why is there a system of reserved seats? What are the provisions to ensure free and fair elections? What does the Election Commission do? **6 Marks**

**Unit II**

4. **Executive in a parliamentary system:** Why was parliamentary system chosen over other forms of government? Why does the parliamentary system need a constitutional head? How are the Prime Minister and the Chief Ministers elected? What are the formal and real powers of the President of India? What are the powers of Prime Minister or the Chief Ministers and the Council of Ministers? What are the powers of the Governor? **6 Marks**

5. **Legislature at the central and state level:** Why does the Parliament of India have two Houses? How are the parliament and the state Assemblies constituted? What are the 3 powers of the Rajya Sabha and Lok Sabha? How are the laws passed? How is the executive made accountable? What are the constitutional means to prevent defection? **4 Marks**
6. **Judiciary:** What is the rule of law? Why do we need an independent judiciary? What are the provisions that ensure the independence of judiciary in India? How are judges appointed? What are the powers of the Supreme Court and the High Courts? How do they use their powers for public interest? **5 Marks**
7. **Federalism:** What is Federalism? How does federalism ensure accommodation of diversities? In which ways is the Indian constitution federal? In which ways does the constitution strengthen the centre? Why are there special provision for some states and areas? **4 Marks**
8. **Local government:** Why do we need decentralization of powers? What has been the status of local government in the constitution? What are the basic features of rural and urban local governments? What has been the effect of giving constitutional status to local governments? **5 Marks**
9. **Political philosophy underlying the constitution:** What are the core provisions of the constitution? What are the visions underlying these core provisions? How are these shaped by modern Indian political thought? **5 Marks**
10. **Constitution as a living document:** How has the constitution changed since it inception? What further changes are being debated? What has the working of democracy done to the constitution? **5 Marks**
  
11. **Introduction to Political Theory:** What is Politics? Do we find politics in seemingly non-political domain? Can political argument be resolved through reasoning? Why do we need political theory? **5 Marks**
12. **Freedom:** What is freedom? What are reasonable constrains on individual liberty? How are limits defined? **5 Marks**

- 13 **Equality:** Do all differences involve inequality? Does equality imply sameness? What are the major forms of inequality? How can equality be realized? **5 Marks**
- 14 **Social Justice:** Is justice all about fairness? What is the relationship between justice and equality? What are the different forms of injustice? In which ways can justice be secured? **5 Marks**
- 15 **Rights:** How is a right different from any claim? What are the major kinds of right claims? How do we resolve a conflict between individual and community rights. How does the state enable and obstruct rights? **6 Marks**
- 16 **Citizenship:** Who is a citizen? What are relevant grounds for inclusion and exclusion? How are new claims to citizenship negotiated? Can we have a global citizenship? **5 Marks**
- 17 **Nationalism:** How are the boundaries of a nation defined? Must every nation have a state? What demands can a nation make on its citizens? What is the basis of the right to self determination? **5 Marks**
- 18 **Secularism:** What is secularism? Which domains of life does it relate to? What is a secular state? Why do we need secular state in modern life? Is secularism suitable for India? **6 Marks**
- 19 **Peace:** What is peace? Does peace always require non-violence? Under what conditions is war justified? Can armament promote global peace? **4 Marks**
- 20 **Development:** What is development? Is there a universally accepted model of development? How to balance the claims of present generation with claims of future generation? **4 Marks**

Code : 216

## INTRODUCTION OF PHILOSOPHY

Maximum Marks: 100

Time: 3 hours

**Unit -I Nature and scope of philosophy:**

**10 Marks**

- (i) Meaning and definition of philosophy
- (ii) Nature of Philosophy
- (iii) Branches of Philosophy

**UNIT-II**

**10 Marks**

- (i) Origin of Philosophy
- (ii) Relation of Philosophy with Science.
- (iii) Relation of Philosophy with Religion.

**UNIT-III Theories of Knowledge**

**10 Marks**

- (i) Rationalism
- (ii) Empiricism
- (iii) Intuitionism

**Unit-IV Different concepts of God**

**10 Marks**

- (i) Deism
- (ii) Pantheism
- (iii) Theism.

**Unit-V Nature and scope of logic.**

**10 Marks**

- (i) What is logic
- (ii) Uses and applications of logic.

**Suggested text-book**

- (i) An introduction to Philosophy by J.N. Sinha.
- (ii) History of Philosophy by R.N. Sharma.
- (iii) History of Philosophy by Bertrand Russell.
- (iv) History of Philosophy by Frank Thilly.
- (v) Introduction to Philosophy by Y. Maisah.
- (vi) Introduction to logic by I.M. Copi.
- (vii) introduction to logic by Vatsayan.

**Introduction to Ethics.**

**Unit VI:**

**10 Marks**

- (i) Definition and Meaning of Ethics
- (ii) Nature of Ethic
- (iii) Scope of Ethics

**Unit VII: Hedonism**

**10 Marks**

- (i) Meaning of Hedonism
- (ii) Psychological and Ethical Hedonism
- (iii) Utilitarianism

**Unit VIII: Theories of Punishment**

**10 Marks**

- (i) Crime
- (ii) Punishment, theories of Punishment. (Preventive, reformatory, retributive)

**Unit IX:**

**10 Marks**

Mahatama Gandhi – Ahimsa (Non-Violence)  
Gautam Buddha – Four noble truth  
Socrates – Virtue

**Unit X: Terms and Propositions**

**10 Marks**

- (i) Definition of Term, Denotation and connotation of terms.
- (ii) Proposition, Classification of propositions.

**Books Recommended**

- (i) A manual of Ethics by J.N. Sinha.
- (ii) A manual of Ethics by J.S. Mackenzie.
- (iii) An introduction to Ethics by William Lilly.
- (iv) Introduction to logic by I.M. Copi.

Code : 217

## EDUCATION

Maximum Marks: 100

Time: 3 hours

### Objective:

1. To have complete conceptual clarity of Education and its role.
2. To be familiar with various aims of education and their importance.
3. To have a working knowledge of various agencies leading to education of children.
4. To have current understanding of pre-primary system of education both in Theory and Practice.
5. To have clear understanding of Educational Psychology.

### Unit : I Meaning and Concept of Education

- 1.1 Etymological meaning of education
- 1.2 Narrow and Broader meaning of education
- 1.3 Definitions-- Pestalozzi, Redden, M. K. Gandhi,  
Dr. Zakir Hussain, Dr. Sir Muhammad Iqbal
- 1.4 Need and importance of education

10 marks

### UNIT - 2 Understanding Aims of Education

- 2.1 Meaning of aims of education
- 2.2 Meaning and importance of following aims:-
  - \*\* individual aims
  - \*\* moral and spiritual aim
  - \*\* social aim
  - \*\* cultural aim
  - \*\* vocational aim

10 marks

**UNIT -3 Understanding Agencies of Education**

- 3.1 Meaning of agencies of education
- 3.2 Types
  - \*\* Formal..... School and religious institutions
  - \*\* Informal.... Family and Society
  - \*\* Non-formal.... Open school, Distance education and Mass Media.

**10 marks**

**UNIT-4 Organization & Structure of Education in India**

- 4.1 Pre-primary education
  - 4.2 Primary education
  - 4.3 Secondary education
  - 4.4 Higher education
- (to be discussed with special reference to organization, structure and aims)

**10 marks**

**UNIT-5 Universalization of Elementary Education**

- 5.1 Concept of universalization of elementary education
- 5.2 Problems of universalization
- 5.3 Initiatives of elementary education
  - \*\* Non formal education
  - \*\* Early childhood care and education
  - \*\* Sarva Shiksha Abhiyan
  - \*\* Right to Education Act (1997)
- 5.4 Wastage and Stagnation.....causes and control

**10 marks**

**Unit 6 : Educational Psychology**

- 6.1 Meaning and definition of Educational Psychology
- Stern ,Skinner, Judd, Crow & Crow

## SYLLABUS CLASS XI

6.2 Need and scope of educational psychology

6.3 Methods of educational psychology

\*\* Observation method

\*\* Case-study method

**10 marks**

### Unit 7 : Emotions

7.1 Understanding the concept of emotions

7.2 Definitions : McDougall, Woodworth, Gates

7.3 Characteristics of emotions

7.4 Types of emotions—Fear, Anger, Jealousy

7.5 Classification proposed by McDougall

7.6 Training of emotions:-Sublimation and Catharsis

7.7 Importance of training of emotions

**10 Marks**

### Unit 8 : Value Education

8.1 Conceptual clarity of value education

8.2 Types of values (Social, Moral and Religious)

8.3 Need and importance of value education

8.4 Role of education in imbibing values

**10 Marks**

### Unit 9 : Elementary Statistics

9.1 Meaning of statistics

9.2 Tabulation of Data into frequency distribution

9.3 Graphic Representation of Data

\*\* Frequency Polygon

\*\* Histogram

\*\* Pie-chart

\*\* Ogive

## **SYLLABUS CLASS XI**

- 9.4 Measures of central tendency —Mean, Median and Mode (calculations only) **10 marks**

### **Unit 10: Environmental Education**

- 10.1 Concept of environmental education  
10.2 Aims and objectives of environmental education  
10.3 Need and importance of environmental education  
10.4 Environmental Pollution....Air, Water and Noise  
(Meaning, Causes and Control) **10 marks**

#### **Books Suggested:**

1. A textbook of Education by Dr. G. Rasool and Dr. H.P. Mangotra.
2. Education for Beginners by N.A. Nadeem. Fullbright Publishing Co., Karan Nagar, Srinagar.
3. Principles & Techniques of Education by Safaya and B.D. Shida.
4. Educational Psychology by S.K. Mangal.

# **PSYCHOLOGY**

**Maximum Marks: 100**  
**Theory: 70 Marks**  
**Practical: 30 Marks**

**Time: 3 hours**

## **UNIT-I INTRODUCTION TO PSYCHOLOGY**

- ◆ Nature and scope of Psychology
- ◆ Brief historical background of Psychology
- ◆ Branches of Psychology: *Educational, Social, Abnormal, Experimental, Clinical, Industrial and Cognitive Psychology*
- ◆ Schools of thought in Psychology: *Structuralism, Functionalism, Behaviourism and Psychoanalysis* **9 marks**

## **UNIT-II METHODS IN PSYCHOLOGY**

- ◆ Observation, Experimental, Survey & Case Study method.
- ◆ Psychological Testing and its characteristics: Reliability & validity **5 marks**

## **UNIT-III THE BASIS OF HUMAN BEHAVIOUR**

- ◆ Biology of behaviour: *Structure and functions of Nervous system.*
- ◆ Locations and functions of endocrine systems & its effect on behaviour.
- ◆ Heredity and Behaviour: *Genes and Chromosomes*
- ◆ Socio-cultural basis of behaviour: Family, Neighbourhood and School **7 marks**

## **UNIT-IV HUMAN DEVELOPMENT**

- ◆ Meaning of growth and development.

## SYLLABUS CLASS XI

- ◆ Factors influencing development.
  - ◆ Overview of developmental stages: *Infancy, Childhood, Adolescence, Adulthood and Old Age.*
- 7 Marks**

### UNIT-V SENSORY, ATTENTIONAL AND PERCEPTUAL PROCESSES

- ◆ Meaning of Sensation, Attention and Perception.
  - ◆ Laws of perceptual organization.
  - ◆ Attentional processes: *Selective and Sustained Attention, Illusions.*
  - ◆ Sense Modalities: *Visual and Auditory Modalities.*
- 7 Marks**

### Unit VI: LEARNING

- ◆ Meaning and characteristics of Learning.
  - ◆ Classical and Operant Learning, Observational Learning, Verbal Learning, Skill learning.
  - ◆ Factors facilitating Learning, Transfer of Learning.
- 8 marks**

### Unit VII: MEMORY AND FORGETTING

- ◆ Meaning of Memory & its components.
  - ◆ Levels of processing: *Sensory memory, Short-term memory, Long-term memory.*
  - ◆ Forgetting: *Nature of Forgetting, Theories of Forgetting (Trace decay, Interference, Retrieval failure).*
- 8 marks**

## SYLLABUS CLASS XI

### Unit VIII: THINKING AND LANGUAGE

- ♦ Nature of thinking
- ♦ Process of thinking, Reasoning, Problem solving and Decision making.
- ♦ Nature and process of creative thinking.
- ♦ Thought and Language, Development of Language and Language use **6 marks**

### Unit IX: MOTIVATION

- ♦ Meaning, Cycle of motivation.
- ♦ Biological Motives.
- ♦ Psycho-social motives: *Achievement, Affiliation and Power.*
- ♦ Maslow's Hierarchy of needs. **7 marks**

### Unit X: EMOTIONS

- ♦ Meaning of emotion and its characteristics
- ♦ Theories of emotion: *James-Lange Theory, Cannon-Bard Theory*
- ♦ Emotional reactions: *Happiness, Optimism, Anger and Fear.* **6 Marks**

### PRACTICALS

**30 Marks**

- ♦ Memory and forgetting by using memory drum.
- ♦ Learning: (*Star shape*) Bilateral transfer of learning.
- ♦ Attention

**Code : 219**

## **SOCIOLOGY**

Maximum Marks: 100

Time: 3 hours

### **Unit I : Introduction to Sociology**

**10 Marks**

- Concept of Sociology :- Nature and Subject Matter
- Emergence of Sociology :- Enlightenment, Industrial Revolution, French Revolution
- Society:- Concept, Structure, function & Types
- Society:- Functional and Conflict Perspective

### **Unit II : Basic Concepts**

**10 Marks**

- Social Groups:- Concept and Nature, Primary, Secondary and Reference groups
- Social Stratification:- Concept and Nature, Caste & Class
- Social Control:- Concept and Nature, Agencies of Social Control
- Status and Role:- Concept and Nature, Types of Status and Role

### **Unit III : Social Institutions - I**

**10 Marks**

- Concept and Definition of Social Institution
- Family:- Structure and Functions
- Marriage:- Concept and Types of Marriage
- Kinship:- Concept Terminologies, Types & Rules

### **Unit IV : Social Institutions - II**

**10 Marks**

- Religion:- Concept, Role and Functions
- Education:- Role and Functions
- Polity:- State, Sovereignty, Legislature, Executive, Judiciary
- Economy:- Concept and Nature, Jajmani system, Socialistic & Capitalistic System

## SYLLABUS CLASS XI

### Unit V : Culture and Society

10 Marks

- Culture:- Concept and Dimensions
- Values, Norms, Folkways, Customs
- Socialization: Agencies of Socialization
- Pluralistic and Cultural Ethos - With special reference to J&K

MAXIMUM MARKS: 50

Time: 2 ½ hrs

### Unit VI: Classical Sociological Thought

10 Marks

- August Comte:- Law of three-Stages
- Karl Marx:- Class and Class struggle
- Emile Durkheim:- Social Fact-Suicide
- Max Weber:- Religion

### Unit VII: Indian Sociological Thought

10 Marks

- G S Ghurye: Caste and Race in India
- D P Mukherjee: Tradition and Modernity
- M N Srinivas: Sanskritization
- Imtiyaz Ahmad: Arsharfization and Ajlafization

### Unit VIII: Social Structure and Processes in Indian Society

10 Marks

- Social Structure: Concept
- Social Processes: Concept, Nature & Types
- Cooperation, Division of labour
- Conflict and Competition

### Unit IX : Social Change

10 Marks

- Social Change: Conflict model and Evolutionary model
- Social Order: Deviance and Conformity

## SYLLABUS CLASS XI

- Social Change in Rural society (Structural & Functional)
- Social Change in Urban Society (Structural & Functional)

### Unit X : Environment and Society

10 Marks

- Ecology and Social Environment (Relationship)
- Preservation of water bodies and their significance With special reference to J&K Dal Lake, Wular, Jhelum, Tawi and Mansar.
- Deforestation and its impact on society
- Social response to Natural Disaster :Earth quake, Floods (J&K)

### Books Prescribed :-

1. Introducing Sociology: A textbook Class XI by NCERT, New Delhi
2. Understanding Society: A textbook Class XI by NCERT, New Delhi
3. Indian Society by NCERT, New Delhi.

**Code : 221**

## **HOME SCIENCE**

**(ELECTIVE)**

Home Science as a discipline aims to empower learners by developing understanding of four different areas, namely:

- ♦ Food and Nutrition
- ♦ Human Development
- ♦ Community Resource Management and Extension
- ♦ Fabric and Apparel Science

The subject helps students to understand changing needs of Indian society, academic principles as well as develop professional skills.

This would make them competent to meet challenges of becoming a responsible citizen.

### **Objectives:**

The Syllabus at Senior Secondary level develops in the learners an understanding that the knowledge and skills acquired through Home Science facilitates development of self, family and community. It endeavors to -

1. Acquaint learners with the basics of human development with specific reference to self and child.
2. Help develop skills of judicious management of various resources.
3. Enable learners to become alert and aware consumers.
4. Impart knowledge of nutrition and lifestyles to enable prevention and management of disease.
5. Inculcate healthy food habits.
6. Help develop understanding of textiles for selection and care of clothes.
7. Develop skills of communication to assist in advocacy and dissemination of knowledge to community.

## SYLLABUS CLASS XI

**Maximum Marks: 100**  
**Theory: 70 Marks**  
**Practical: 30 Marks**

**Time: 3 hours**

### **Unit I : Concept of Home Science and its Scope**

**3 Marks**

- Definition and meaning of Home Science.
- Historical review of development of Home Science as a discipline.
- Its scope and interdisciplinary approach.

### **Unit II : Growth & Development**

**12 Marks**

- Understanding the concept of Growth and development: The basic principles of development and the difference b/w Growth and development.
- Life span of different stages of growth.
- Adolescence definition.
- Characteristics
- Physical development - Growth spurt, Sexual development.
- Social and emotional development: Family and socialization, Parental Control techniques, Role of siblings and grandparents, Development of peer relationship & Friendship pattern, Interest in opposite sex, development of gender role, stereotype, Role of school and teacher, Identity crises, storm and stress, Anger Management.
- Cognitive development: - Meaning & Characteristics.

### **Unit III : Some Problems Related to Adolescence**

**12 Marks**

- Awkwardness due to growth spurt, freedom and control, depression, alcohol, drugs and smoking; delinquency, problems related to sex; ignorance and increased Curiosity, Prevention of HIV / AIDS and other sexually transmitted diseases; Adolescence a period of stress.

### **Important Developmental Task**

- Role of heredity and environment (family, peers, school and neighbourhood), preparing, Role of parents and teachers solving adolescence problems.

## SYLLABUS CLASS XI

### Population Education

- Population explosion definition - Causes, effects of over population and it's Control.
- Population Education and its aim.
- Importance of girl child; Govt incentives to improve status of girl child (With special ref. to state)

### Unit IV : Introduction to Fabrics

8 Marks

- **Classification of fibres:**

Natural (Cotton, silk and wool.)

Man-made (Regenerated & Synthetic), (Rayon, nylon and polyester).

Blends - Characteristics ( terry cot, terry silk, terry wool)

Characteristics of fibres : Physical & Chemical properties.

- **Fabric Construction:**

Yarn making: - Basic procedure of making yarn.

Weaving: - Construction of weaves, types of weaves - plain (Basket and rib), twill, sateen & satin weave.

A brief mention of special weaves (Pile and jacquard weaves).

Knitting and non woven fabrics.

Felting and bonding.

Effect of weaves on appearance, durability and maintenance of garments.

- **Fabric Finishes:**

Meaning and importance.

Classification of finishes.

Basic finishes: - (Cleaning, scouring), singeing, bleaching, stiffening, calendaring and tentering)

Special finishes (Mercerization, shrinkage control). (Sanforizing, water proofing), dyeing & Printing.

Handlooms of J&K.

**Unit -V : Nutrition for Family**

**9 Marks**

- Definition and relationship between food, nutrition, health: nutritional status, signs of good health; physical status, psychological status, mental ability, mortality and longevity.
- Classification of foods on the basis of nutrients and functions: - Physiological, psychological and socio-cultural, nutritional status and calorie intake on the basis of poverty line.
- Selection of foods for optimum nutrition and good health: basic knowledge of nutrients - sources, function, deficiency and prevention | proteins, Carbohydrates, fat, dietary fibre, vitamin - A, D, B, B2 Niacin, Folic acid B12 and Vit C, minerals - Calcium, Iron and Iodine. Basic foods group. (ICMR) and their contribution, concept of balanced diet food and nutritional requirement for family (ICMR Tables); factors influencing selection of food culture, family food practices, media, peer group and availability of foods (with special reference to J&K)
- Nutritional problems of adolescents -IDD, Anaemia.
- Eating disorders of adolescents.

**Unit VI : Maximum Nutritive Value From Food by Proper Selection, Preparation, Cooking and Storage:**

**9 Marks**

- Selection and storage of foods - perishable, semi-perishable, non-perishable, convenience foods, reasons for spoilage; brief description of household methods of preservation - refrigeration, dehydration use of chemicals and house hold preservation, Cooking: Principles of cooking: Methods of cooking boiling, steaming, pressure cooking, deep and shallow frying parboiling, sautéing, roasting and grilling, effects of cooking on the nutritive value of food. Method of enhancing nutritive value - germination, fermentation, fortification and proper food combination.

## SYLLABUS CLASS XI

### Unit VII : Resource Management.

9 Marks

- Resource - Meaning, types and characteristics.
- Community facility/shared resources: school, parks, hospitals, roads, transports, water, electricity, library fuel and fodder.  
Need to manage the resources and methods of Conservation of shared resources.
- Management.
- Meaning need and steps in management.
- Decision making and its role in management.

### Unit VIII : Time and Energy Management.

8 Marks

- Need and procedure for managing time for occupation and leisure.
- Work simplification meaning and methods, types and ways of reducing fatigue.
- Work ethics - meaning and its importance.

### PRACTICAL

Marks : 30

Time: 3 Hours

### UNIT MARKS

- |    |                               |         |
|----|-------------------------------|---------|
| 1. | Concept of Home Science       |         |
| 2. | Growth & Development          |         |
| 3. | Nutrition for self and family | 8 marks |
| 4. | Resources management          | 8 marks |
| 5. | Clothing, selection & care    | 7 marks |
| 6. | Record                        | 5 marks |
| 7. | Viva                          | 2 marks |

### Unit I : Concept of Home Science - Making Charts and Posters.

#### Unit II :

- Observation of Adolescence strength and weaknesses and suggestions for utilization of strength and weaknesses to overcome them.

### Unit III : Nutrition for Self & Family

## **SYLLABUS CLASS XI**

Activity:- Look for signs of good health within your family.

Activity:- Make a list of food available in the local market according to food groups.

Practical:- Diet plan for Adolescence.

Practical:- Preparing nutritious snacks, Canteen meal .Using different methods of cooking.

Practical: - Household methods of food preservation (Jam, Squash, Pickles/Chutney)

### **Unit IV : Resource Management**

Activity:- Observe & list resources available at home & in neighbour and suggest improvements.

Activity:- Observe and make a list of resources materials, surrounding at home & community-  
make an article of waste product.

Practical: make flower & foliage arrangements, floor decorations. Clean & polish copper or  
brass, glass & iron

### **Unit V : Introduction to Clothing.**

Activity:- Collect samples of fabrics & study characteristics for identification.

Activity: - Collect samples of weaves & identify them.

Practical: - Carry out burning test, slippage test, tearing test & test for colour fastness.

Practical: - Dyeing: - tie & dye, Block printing.

## SYLLABUS CLASS XI

Code : 235

### MUSIC

Max. Marks: 100

Theory: 50

Practical: 50

Time: 2½ hours

Marks : 25

#### Unit-I

1. Writing of atleast ten Alankars in Shudh Swaras only.
2. Writing of Swar Malika or Lakshan Geet in Raag Bilawal and Rag Yaman.
3. Write the Notation of the Taalas in single and double layakaries prescribed in the course of study (i) Teen tal (ii) Kehuva (iii) Dadra

#### Unit-II

1. Define the following Musical Terms:-  
Naad, Shruti, Swar, Saptak, Sangeet, Vadi Swar, Samvadi Swar, Anuvadi Swar, Varjya Swar, Alankar, Aroh, Avroh, Pakad.
2. Detail Study of the following with its comparison:  
(i) Thaata-Raag (ii) Classical-Semi-Classical music
3. Swar:- Chal, Achal, Shudh, Komal, Teervra swar (with examples)

Marks : 25

#### Unit-III

1. Write Notation in Bhatkhande Notation System of the following Raags  
(Chota Khayal/Razakhani Gat)
2. Full Definition of the Raagas prescribed in the course of study.

#### Unit-IV

1. Life History and contributions of the following Musicians:  
(i) Pt. Vishnu Narayan Bhatkhande (ii) Swami Haridas
2. Essay type  
(i) Lok Sangeet and Shastriya Sangeet  
(ii) Importance of Taal and Laya in Music  
(iii) Importance of Music in life
3. Draw and explain the parts of Tanpura/Sitar
4. Style of Singing and Playing  
(i) Khayal Gayaki (ii) Dhrupad Gayaki (iii) Maseetkhani Gat & Razakhani Gat

## SYLLABUS CLASS XI

### PRACTICALS

Time : 3 hrs.

50 Marks

	Marks
1 <sup>st</sup> Test in Practical	20
2 <sup>nd</sup> Test in Practical	20
Practical file and Impression	10

- 1 Alankars in Bilawal Thaata.
- 2 Raag Bilawal and Raag Yaman (Swar Malika/Lakshan Geet).
- 3 Playing of Teen Taal in Single and double Layakaries.
- 4 Any folk song of your State/Different Bols of Mizrab
5. Singing/playing of Alankars in Kalyan thaata.
6. Raag Bilawal and Raag yaman (Chota Khayal or Razakhani Gat with four Tanas and Todas.
7. Playing of Teentaal, Dadra and Kehuva Taal in Single and double layakaries.
8. Any Classical based Filmi song or Folk song .

### BOOKS SUGGESTED:

1. Sangeet Visharad.
2. Sangeet shastra Darpan I and II.
3. Kramik Pustak Malika Part-I and Part-II.

# **STATISTICS**

**Maximum Marks: 100**

**Maximum Marks (Theory): 70**

**Maximum Marks (Practical): 30**

## **Unit I: Introduction to Statistics**

- Origin, Definition and Meaning of Statistics. Importance and Scope of Statistics.
- Limitations of Statistics. Data and its types (Primary, Secondary, Qualitative and Quantitative data), Sources of secondary data. **6 marks**

## **Unit II: Data Collection.**

Concept of Population and Sample. Methods of data collection (Questionnaire and Interview Method). Merits and Demerits of these Methods. Presentation, Classification and Tabulation of data. Discrete and continuous data. Frequency and frequency distribution. **6 marks**

## **Unit III: Graphical representation of data**

Representation of data by Graph, its advantages. Construction of diagrams/Charts (Bar chart, Multiple Bar diagram, Pie chart). Frequency graphs (Histogram, Frequency Polygon, Frequency Curve, Ogive Curves) **7 marks**

## **Unit IV: Measures of Location**

Centre Tendency and its Measures (Mean, Median, Mode, Geometric Mean and Harmonic Mean). Essentials of good average. Merits and Demerits of Measures of Central Tendency. Combined and Weighted Mean. **8 marks**

## **Unit V: Partitation Values**

Graphical Location of Median, Concept of Quartiles, Deciles and Percentiles.

Percentile Rank. Empirical relation between Mean, Median and Mode. Symmetrical and Asymmetrical data. **8 marks**

### **Unit VI: Dispersion**

Dispersion and its absolute measures (Range, Quartile Deviation, Mean Deviation and Standard Deviation). Merits and Demerits of these measures. Relative measures of Dispersion (Co-efficient of Range, Co-efficient of Quartile deviation, Co-efficient of Standard deviation). Co-efficient of variation (C.V.). **8 marks**

### **Unit VII: Moments**

Define Moments, Types of Moments (Raw Moments and Centre Moments for discrete and continuous data). Relationship between Raw and Central Moments. Numerical illustration based on Moments. **6 marks**

### **Unit VIII: Skewness and Kurtosis**

Define Skewness and its types, Measures of Skewness (Karl Pearson, Bowleys and Moment based measure), Kurtosis and its types. Measures of Kurtosis.

**7 marks**

### **Unit IX: Correlation**

Bivariate data, Scattered diagram, Concept of Correlation and its types. Methods of measuring Correlation ( Product moment method, Graphical method). Properties of Correlation co-efficient. Rank correlation for simple and repeated Ranks.

**8 marks**

### **Unit X: Introduction to Computers**

Basic idea about computers, Functional components (Input/Output Units, Hardware

and Software). Generation of Computers, Concept of flow charts, Classification of computers.

**6 marks**

**Practical Work (weightage 30 marks )**

1. Practical's based on Baye's thermo.
2. Calculation of two Regression lines.
3. Practical's based on measures of fertility and mortality .
4. Estimates of Trend values by free hand and semi average method.
5. Drawing of Charts through Excel.
6. Measures of Central Tendency through Excel.

**MATHEMATICS****Maximum Marks: 100****Time: 3 hrs**

<b>Topics</b>	<b>Marks</b>
Unit-I Sets	06
Unit-II Relations and Functions	06
Unit-III Trigonometry	12
Unit-IV Mathematical Induction	04
Unit-V Permutation and Combinations	06
Unit-VI Complex Numbers and Linear In equations	06
Unit-VII Limits and Derivatives	10
Unit-VIII Co-ordinate Geometry (Straight Line)	06
Unit-XI Conic Section (Circles) Parabola, Ellipse, Hyperbola	10
Unit-X Probability	06
Unit-XI Statistics	06
Unit-XII Binomial Theorem	06
Unit-XIII Sequences and Series	08
Unit-XIV Three Dimensional Geometry	04
Unit-XV Mathematical Reasoning	04

**Unit-I****Sets**

Sets and their representation. Empty set. Finite and Infinite sets. Equal sets Subsets. Subsets of the set of real numbers especially intervals (with notations).

Power set. Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Compliment of a set.

Ordered pairs, Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the reals with itself (up to  $R \times R \times R$ ).

**Unit-II****Relations and Functions**

Definition of relation, pictorial diagrams, domain, co-domain and range of relation. Function as a special kind of relation from one set to another. Pictorial representation of a function, domain and co-domain and range of a function. Real valued function of the real variable, domain and range of these functions. Constant, identity, polynomial, rational, modulus, signum and greatest integer functions with their graphics. Sum, difference, product and quotients of functions.

**Unit-III****Trigonometry**

Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity  $\sin^2 x + \cos^2 x = 1$ , for all  $x$ . Signs of trigonometric functions and sketch of their graphs. Expressing  $\sin(x \pm y)$  and  $\cos(x \pm y)$  in terms of  $\sin x$ ,  $\sin y$ ,  $\cos x$  and  $\cos y$ . Deducing the following identities:

$$\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y}, \quad \cot(x \pm y) = \frac{\cot x \cot y \mp 1}{\cot y \pm \cot x}$$

$$\sin x + \sin y = 2 \sin \frac{x+y}{2} \cos \frac{x-y}{2}, \quad \cos x + \cos y = 2 \cos \frac{x+y}{2} \cos \frac{x-y}{2},$$

$$\sin x - \sin y = 2 \cos \frac{x+y}{2} \sin \frac{x-y}{2}, \quad \cos x - \cos y = -2 \sin \frac{x+y}{2} \sin \frac{x-y}{2}.$$

Identities related to  $\sin 2x$ ,  $\cos 2x$ ,  $\tan 2x$ ,  $\sin 3x$ ,  $\cos 3x$  and  $\tan 3x$ . General solution of trigonometric equations of the type  $\sin \theta = \sin \alpha$ ,  $\cos \theta = \cos \alpha$  and  $\tan \theta = \tan \alpha$ . Proofs and simple applications of sine and cosine formulae.

## SYLLABUS CLASS XI

### Unit-IV Mathematical Induction

The Principal of Mathematical induction and Simple Applications.

### Unit-V Permutation and Combinations

Fundamental principle of counting. Factorial  $n$ . Permutations and combinations, derivation of formulae and their connections, simple applications.

### Unit-VI

### Complex Numbers and Linear Inequations

Need for complex numbers, especially  $\sqrt{-1}$ , to be motivated by inability to solve every quadratic equation. Brief description of algebraic properties of complex numbers. Argand plane and polar representation of complex numbers. Statement of Fundamental Theorem of Algebra, solution of quadratic equation in the complex number system.

Linear inequalities. Algebraic solution of linear inequalities in one variable and their representation on the number line. Graphical solution of linear inequalities in two variables. Solution of system of linear inequalities in two variables - graphically.

### Unit-VII Limits and Derivates

Derivative introduced as rate of change both as that of distance function and geometrically, intuitive idea of limit. Definition of derivative, relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions

### Unit-VIII Straight Lines

Brief recall of 2d from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a parallel to axes, point-slope form, slope-intercept form, two-point form, intercepts form and normal form. General equation of a line. Distance of a point from a line.

### Unit-IX Conic Sections (Circles)

Sections of a cone: Circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.

## SYLLABUS CLASS XI

### Unit-X Probability

Random experiments: Outcomes, spaces (set representation). Events: Occurrence of events, 'not', 'and' & 'or' events, mutually exclusive events. Axiomatic (set theoretic) probability, connections with the theories of earlier classes.

### Unit-XI Statistics

Measure of dispersion: mean deviation, variance and standard deviation of ungrouped/grouped data. Analysis of frequency distributions with equal means but different variances.

### Unit-XII Binomial Theorem

History, Statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, general and middle term in binomial expansion, simple applications.

### Unit-XIII Sequence and Series

Sequence and Series. Arithmetic Progression (A.P.), arithmetic mean (A.M.). Geometric progression (G.P.) general term of a G.P., sum of  $n$  terms if a G.P. and A.P. Geometric mean (G.M.), relation between A.M. and G.M. Sum to  $n$  terms of the special series:  $\sum n$ ,  $\sum n^2$  and  $\sum n^3$ .

### Unit-XIV Three-dimensional Geometry

Coordinates axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points and section formula.

### Unit-XV Mathematical Reasoning

Mathematically acceptable statements. Connecting words/phrases-consolidating the understanding of "if and only if (necessary and sufficient) condition", "implies", "and/or", "implied by", "and", "or", "there exists" and their use through variety of examples related to real life and Mathematics. Validating the statements involving the connecting words-difference between contradiction, converse and contrapositive.

Code : 250

## APPLIED MATHEMATICS

Max Marks :- 100

Time: 3 hrs

### Unit 1<sup>st</sup>. Sets, Relations and Functions

Sets and their representation . finite and infinite sets . empty sets. equality of sets. subset, powerset, universal set, venn diagram, compliment of a set. Algebra of sets (Union, intersection and difference of sets). Demorgan's laws, Cartesian product of sets.

Relations , types of relations (equivalence relation).

Definition of a function and its various types.

13 marks

**Unit 2<sup>nd</sup>. Complex numbers and quadratic equations**

Definition of a complex number, its representation. Conjugate of a complex number, modulus of a complex number, amplitude of a complex number. Square root of a complex number. Cube roots of unity and its properties. Quadratic Equations with complex coefficients and roots.

**13 marks**

**Unit 3<sup>rd</sup>. Sequences and Series**

Geometric progression, general term sum to  $n$  terms, and sum to infinity of a geometric series. Geometric and arithmetic means, Evaluation of  $\sum n$ ,  $\sum n^2$ ,  $\sum n^3$

**13 marks**

**Unit 4<sup>th</sup>. Trigonometry**

Trigonometric ratios of allied angles (without proof). sum, difference formulae and their applications. Solution of trigonometric equations.

**11 marks**

**Unit 5<sup>th</sup>. Permutations, Combinations & Binomial theorem**

Factorial notation, fundamental principle of counting. Meaning of  $P(n, r)$  &  $C(n, r)$  and their relations with simple applications.

Binomial theorem for any index. General term, middle term/s of a Binomial Expansion. Applications of binomial expansion.

**15 marks**

**Unit 6<sup>th</sup>. Co-ordinate Geometry**

**2-Dimensional Geometry:** Applications of section formula (centroid, incentre and orthocenter of a triangle). Equation of straight line in various forms. condition of perpendicularity and parallelism.

Equation of a circle in general and standard form and in diametric form.

**3-Dimensional Geometry:** Distance formula, Section formula, direction cosines and direction ratios. Projection of a line with respect to another line. Angle between two lines. **13 marks**

**Unit 7th. Probability**

Random experiment and sample space. Event of a sample space and its various types. Axiomatic probability. **12 marks**

**Unit 8th. Vectors**

Definition of a vector & its representation, types of vectors, components of a vector, Addition of vectors, scalar (or dot) product of vectors, Vector (or cross) product of vectors, Scalar tripple product (Geometrical representation). **10 marks**

**Suggested Textbook:** A Textbook of Mathematics for class XI published by NCERT, New Delhi

**Code : 224**

## **ISLAMIC STUDIES**

Islamic education is divided into what is called individual and social education. Individual education aims at familiarizing the individual with:

- a. his relation with the Creator of the universe;
- b. his individual responsibilities in life;
- c. his responsibility towards the human community;
- d. his social relations;
- e. his relation to other creatures;
- f. his relationship to the universe and universal phenomena and exploration of nature's laws in order to utilize and exploit them for the welfare of mankind;
- g. His Masters creative wisdom apparent in His creation.

### **Islamic Studies curricula also aims at:**

1. Building a society of good, pious and God-fearing individuals where social justice prevails;
2. Building a society where tolerance, co-existence, brotherhood, love, mercy, goodness and righteousness are predominant;
3. Building a society based on mutual consultation and the maximum exploitation of the individual's intellectual capacities;
4. Building a society where individuals enjoy freedom of thought and are competent to take responsibility;
5. Building a society where individuals can live an ideal, pure and prosperous life.

**ISLAMIC STUDIES**

**Maximum Marks: 100**

**Time: 3 hours**

**UNIT I: Islamic Studies: Definitions and Scope**

**10 Marks**

- a. Islamic Studies: Definitions
- b. Nature of Islamic Studies
- c. Basic sources of Islamic Studies (The Qur'an and the Sunnah)
- d. Scope of Islamic Studies

**UNIT II: Faith in Islam and its Articles**

**10 Marks**

- a. Islam: the Divine Religion
- b. Faith (Iman): Definition
- c. Faith in Allah
- d. Faith in Divine Books

**UNIT III: Prophethood (*Risalah*) in Islam**

**10 Marks**

- a. Concept of prophethood (Necessity and divine sanction)
- b. Role of Prophets in human society:
  - i. Educational and
  - ii. As Reformers
- c. Early Prophets and their universal message
- d. Introduction to some prominent prophets:
  - i. Adam (AS)
  - ii. Ibrahim (AS)
  - iii. Yusuf (AS)
  - iv. Musa (AS)
  - v. 'Isa(AS),

**UNIT IV: Man in the Universe**

**10 Marks**

- a. Allah, the Creator and the Master of universe.
- b. Creation of universe: purposes
- c. Status of man (Vicegerency)

**UNIT V: Faith in Practice**

**10 Marks**

- a. Impact of Faith upon the behavior of an individual
- b. Sense of responsibility and accountability (consciousness, dutifulness and sincerity)
- c. The social behavior of God-conscious persons (Piety, honesty, modesty and kindness).

**Unit VI: Life of Prophet Muhammad (SAW) at Makkah**

**10 Marks**

- a. Prior to *Nabuwwah*: birth, childhood, marriage and the construction of Ka'bah
- b. *Nabuwwah* and its proclamation
- c. Post-*Nabuwwah*: major events
- d. *Hijrah* of the Prophet (SAW)

**Unit-VII: Life of Prophet Muhammad (SAW) at Madinah**

**10 Marks**

- a. Emergence of Muslim community
- b. Characteristics of Muslim community:
  - i. Brotherhood (*muakhat*)
  - ii. Generosity (*sakhawat*)
  - iii. Sincerity (*ikhlas*)

**Unit-VIII: Treatment Towards Other Communities**

**10 Marks**

- a. Jews
- b. Christians
- c. Mushrikin
- d. Importance of the treaties with other communities

**Unit-IX: Da'wah and other Developments**

**10 Marks**

- a. Preaching of Islam at Madinah
- b. Treaty of Hudaibiyah
- c. Conquest of Makkah
- d. The sermon of *Hajjat-ul-Wida* and its significance
- e. Muhammad (SAW) the seal of Prophethood

**Unit-X: The Day to Day Life of the Prophet (a brief account)**

**10 Marks**

- a. Worship (*Salah and Sawm*)
- b. Family life
- c. Treatment towards the neighbours
- d. Treatment towards orphans and the weaker sections of the society

**Textbooks Suggested**

1. *Introduction to Islam* by Dr. Hamidullah, Kitab Bhawan, Delhi.
2. *Islam at a Glance* by Sadruddin Islahi, Markazi Maktaba Islami, Delhi.
3. *The Noble Life of Muhammad (SAW)* by Muhammad Abdul Hai, Al-Hasanad Books, Delhi.
4. Muhammad Shaltut, "Islamic Beliefs and Code of Life", in *Islam: The Straight Path*, edited by Kenneth W. Morgan, Motilal Banarasidas, Delhi.



## VEDIC STUDIES

Maximum Marks: 100

Time: 3 hours

**Unit I: Vedic Studies : Definition and Scope** **13 Marks**

- (i) Definition and Scope of Vedic Studies
- (ii) What is Veda?
- (iii) Importance of Vedas
- (iv) The Vedas - Rigveda, Yajurveda, Samveda and Atharva Veda

**Unit II: Origin of Vedas** **13 Marks**

- (i) Paurusheya or Apaurusheya
- (ii) Rishis and Rishikas.

**Unit III: Vedic gods and goddesses** **11 Marks**

- (i) The nature and classification of the Vedic gods
  - (a) Terrestrial
  - (b) Aerial or Intermediate
  - (c) Celestial
- (ii) Pantheism and Monotheism

**Unit IV: The Later Vedic Literature** **13 Marks**

- (i) The Brahmanas
- (ii) The Aranyakas
- (iii) The Upanishads

**Book Prescribed :**

Vedic Studies Part-I

Published by Jammu and Kashmir State Board of School Education

**Unit V : Vedic Society 10 Marks**

- (i) Family, Vish (Clan), Jana (Tribe) Varnas.
- (ii) Education, Dress, Food and Drinks.
- (iii) Habits and customs, Manners and the four Ashramas.

**Unit VI: Role and Status of Women 10 Marks**

- (i) Right to Education.
- (ii) Institution of Marriage & Women.
- (iii) Position of Widow.
- (iv) Proprietary Rights.

**Unit VII: Polity and Administration 10 Marks**

- (i) The Nature of the State-Monarchical and Republican.
- (ii) The Vedic Kings and Chief Officials.
- (iii) Popular Assemblies.

**Unit VIII: Economic Life 10 Marks**

- (i) Agriculture and Cattle rearing.
- (ii) Occupations and Industries
- (iii) Trade and Commerce

**Unit IX: Vedic Values 10 Marks**

- (i) Social Values (ii) Ethical Values

**BUDDHIST STUDIES**

**Max Marks :- 100**

**Time: 3 hrs**

**Unit - I Life of Gautama Buddha**

**10 Marks**

- i. Birth
- ii. Renunciation
- iii. Enlightenment
- iv. Dharmachakrapravartana
- v. Mahaparinirvana

**Unit-II Buddhist Councils**

**10 Marks**

- i. First Buddhist Council
- ii. Second Buddhist Council
- iii. Third Buddhist Council

**Unit - III Royal Patronage to Buddhism**

**10 Marks**

- i. Ashoka
- ii. Menander
- iii. Kanishka
- iv. Lalitaditya

**Unit - IV Introduction of Buddhism to J&K State**

**10 Marks**

- i. Introduction of Buddhism in Kashmir
- ii. Introduction of Buddhism in Jammu
- iii. Introduction of Buddhism in Ladakh

## **SYLLABUS CLASS XI**

### **Unit - V      Buddhist Sites of J & K State      10 Marks**

- i.      Sites in Jammu Region: Ambaran (Akhnoor), Paddar (Kishtwar),
- ii.     Sites in Kashmir Valley: Parihaspur, Harwan, Pandrethan, Ushkur
- iii.    Sites in Ladakh: Alchi, Thiksay, Hemis, Matho, Dakthog.

### **Unit VI      Four Noble Truths      10 Marks**

- i.      Suffering
- ii.     Cause of Suffering
- iii.    Cessation of Suffering
- iv.    Path Leading to the Cessation of Suffering

### **Unit VII     Eight Fold Path      10 Marks**

- i.      Right View
- ii.     Right Determination
- iii.    Right Speech
- iv.    Right Action
- v.     Right Livelihood
- vi.    Right Effort
- vii.   Right Awareness
- viii.  Right Concentration

**Unit- VIII Law of Dependent Origination 10 Marks**

- i. Nature of Twelve Link
- ii. Affliction
- iii. Action
- iv. Resultant of Karmic Forces

**Unit - IX Four Phenomena 10 Marks**

- i. Anitya (Impermanence)
- ii. Duhkha (Suffering)
- iii. Anatma (No Soul)
- iv. Nirvana (Emancipation)

**Unit - x Four States of Sublime Living 10 Marks**

- i. Maitri (Friendliness)
- ii. Karuna (Compassion)
- iii. Mudita (Happiness)
- iv. Upeksha (Equanimity)

# **COMPUTER SCIENCE**

**Maximum Marks: 100**  
**Theory: 70 Marks**  
**Practical: 30 Marks**

**Time: 3 hours**

## **UNIT 1: COMPUTER FUNDAMENTALS**

Evolution of computers; Basics of computer and its operation: Functional Components and their interconnections, concept of Booting.

### **Software Concepts:**

Types of Software - System Software, Utility Software and Application Software;

System Software: Operating System, Compilers, Interpreters and Assembler;

Utility Software : Anti-Virus, File Management tools, Compression tools and Disk Management tools (Disk Cleanup, Disk Defragmenter, Backup);

Application Software as a tool: Word Processor, Presentation tools, Spreadsheet Package, Database Management System; Business software (for example: School Management System, Inventory Management System, Payroll System, Financial Accounting, Hotel Management, and Reservation System);

**6 Marks**

## **UNIT 2: Operating System**

Need for operating system, Functions of Operating System (Processor Management, Memory Management, File Management and Device Management), Types of operating system - Interactive (GUI based), Time Sharing, Real Time and Distributed; Commonly used operating systems:

LINUX, Windows, Bharti OO, Solaris, UNIX;

Illustration and practice of the following tasks using any one of the above Operating Systems:

- ♦ Opening / Closing Windows

## SYLLABUS CLASS XI

- ♦ Creating / Moving / Deleting Files / Folders
- ♦ Renaming Files / Folders
- ♦ Switching between Tasks

Number System : Binary, Octal, Decimal, Hexadecimal and conversion between two different number systems;

Internal Storage encoding of Characters: ASCII, ISCII (Indian scripts Standard Code for Information Interchange), and UNICODE;

Microprocessor : Basic concepts, Clock speed (MHz, GHz), 16 bit, 32 bit, 64 bit processors; Types

- CISC, RISC;

### Memory Concepts :

Units : Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Peta Byte

Primary Memory : Cache, RAM, ROM,

Secondary Memory : Hard Disk Drive, CD / DVD Drive, Pen Drive, Blue Ray Disk;

Input Output Ports / Connections: Serial, Parallel and Universal Serial Bus, PS-2 Port, Infrared port, Bluetooth.

**6 Marks**

### PROGRAMMING METHODOLOGY

General Concepts; Modular approach; Clarity and Simplicity of Expressions, Use of proper names for identifiers, Comments, Indentation; Documentation and Program Maintenance; Running and Debugging programs, Syntax Errors, Run-Time Errors, Logical Errors; Problem Solving Methodology and Techniques: Understanding of the problem, Identifying minimum number of inputs required for output, Step by step solution for the problem, breaking down solution into simple steps, Identification of arithmetic and logical operations required for solution, Using Control Structure: Conditional control and looping (finite and infinite)

**23 Marks**

## SYLLABUS CLASS XI

### UNIT 3: INTRODUCTION TO C++

#### Getting Started:

C++ character set, C++ Tokens (Identifiers, Keywords, Constants, Operators), Structure of a C++ Program (include files, main function); Header files - iostream.h, iomanip.h; **cout**, **cin**; Use of I/O operators (<< and >>), Use of **endl** and **setw ( )**, Cascading of I/O operators, Error Messages; Use of editor, basic commands of editor, compilation, linking and execution; standard input/ output operations from C language: **gets()**, **puts()** of **stdio.h** header file;

#### Data Types, Variables and Constants:

Concept of Data types; Built-in Data types: **char**, **int**, **float** and **double**; Constants: Integer Constants, Character Constants (Backslash character constants - **\n**, **\t** ), Floating Point Constants, String Constants; Access modifier: **const**; Variables of built-in data types, Declaration/ Initialisation of variables, Assignment statement; Type modifier: **signed**, **unsigned**, **long**;

#### Operators and Expressions:

Operators: Arithmetic operators (**-**, **+**, **\***, **/**, **%**), Unary operator (**-**), Increment and Decrement Operators (**-**, **++**), Relational operators (**>**, **>=**, **<**, **<=**, **==**, **!=**), Logical operators (**!**, **&** **||**), Conditional operator: **<condition>?<if true>:<else>**; Precedence of Operators; Expressions; Automatic type conversion in expressions, Type casting; C++ shorthand's (**+=**, **-=**, **\*=**, **/=**, **%=**);

**6 Marks**

### UNIT 4: PROGRAMMING IN C++

#### Flow of control:

Conditional statements: **if-else**, **Nested if**, **switch..case..default**, **Nested switch..case**, **break statement** (to be used in **switch..case** only); Loops: **while**, **do-while**, **for** and **Nested loops**;

## SYLLABUS CLASS XI

### String Functions:

Header File: string.h

Function: **isalnum()**, **isalpha()**, **isdigit()**, **islower()**, **isupper()**, **tolower()**, **toupper()**;

### Character Functions:

Header File: ctype.h

Functions: **isalnum()**, **isalpha()**, **isdigit()**, **islower()**, **isupper()**, **tolower()**, **toupper()**, **strcpy()**, **strcat()**, **strlen()**, **strcmp()**, **strcmpi()**;

### Mathematical Functions:

Header File-math.h, stdlib.h;

Functions: **fabs()**, **log()**, **log10()**, **pow()**, **sqrt()**, **sin()**, **cos()**, **abs()**,

### Other Functions:

Header File- stdlib.h;

Functions: **randomize()**, **random()**;

6 Marks

## UNIT 5 : USER DEFINED FUNCTIONS:

Defining a function; function prototype, Invoking/calling a function, passing arguments to function, specifying argument data types, default argument, constant argument, call by value, call by reference, returning values from a function, calling functions with arrays, scope rules of functions and variables; local and global variables;

### Structured Data Type: Array

Declaration/initialization of One-dimensional array, Inputting array elements, Accessing array elements, Manipulation of Array elements (sum of elements, product of elements, average of elements, linear search, finding

## SYLLABUS CLASS XI

maximum/minimum value); Declaration/Initialization of a String, string manipulations (counting vowels/consonants/digits/ special characters, case conversion, reversing a string, reversing each word of a string);

### Two-dimensional Array :

Declaration/initialization of a two-dimensional array, inputting array elements  
Accessing array elements, Manipulation of Array elements (sum of row element, column elements, diagonal elements, finding maximum/minimum values);

### User-defined Data Types

Need for User defined data type:

Defining a symbol name using type def keyword and defining a macro using #define directive.

### Structures:

Defining a Structure, Declaring structure variables, Accessing structure elements, passing structure of Functions as value and reference argument/parameter, Function returning structure, Array of structures, passing an array of structure as an argument/ a parameter to a function.

**23 Marks**

**(Practical)**

**Total Marks: 30**

**Time: 3 hours**

### 1. Programming in C++

One programming problem in C++ to be developed and tested in Computer during the examination. Marks are allotted on the basis of following:

Logic

Documentation/Indentation

Output presentation

## SYLLABUS CLASS XI

### 2. Project Work

Problems related to String, Number and Array manipulation;

General Guidelines: Initial Requirement, developing an interface for user (it is advised to use text based interface screen), developing logic for playing the game and developing logic for scoring points

1. Memory Game : A number guessing game with application of 2 dimensional arrays containing randomly generated numbers in pairs hidden inside boxes.
2. Cross 'N Knots Game : A regular tic-tac-toe game
3. Hollywood/Hangman: A word guessing game
4. Cows 'N Bulls : A word/number guessing game

Similar projects may be undertaken in other domains

### 3. Practical File

- ◆ **Must have minimum 15 programs from the topics covered in class XI course.**
  - ◆ 5 Programs on Control structures
  - ◆ 4 Programs on Array Manipulations
  - ◆ 4 Programs on String Manipulations
  - ◆ 2 Programs on structure manipulations

### 4. Viva-voce

Viva will be asked from syllabus covered in class XI and the project developed by student.

## **INFORMATICS PRACTICES**

**Maximum Marks= 100**

**Theory: Marks 70**

**Practicals: Marks 30.**

**External: 20 marks, Internal: 10 marks**

### **Unit – I: Digital Design:**

Number Systems: Binary, Octal, Decimal, Hexadecimal and conversions, Coding Schemes ASCII, EBCDIC, Basic Logical Gates (AND, OR, NOT, XOR, XNOR) with Truth Tables.

### **Unit – II: Computer Fundamentals:**

Basics of a Computer and its operation; Functional Components and their interconnection (Block Diagram; illustrating main parts of computer (CPU, ALU, CU, Memory); Generations of Computers, Classification of Computers.

Input / Output Devices: Keyboard, Mouse, Light Pen, Touch Screen, Joy Stick, Mic, Scanner (MICR, OCR, BCR. VDU (CRT, LCD), Printers (Dot Matrix, Inkjet, LaserJet), Speaker.

Memory: Primary Memory (ROM and its Types); Secondary Storage Devices (Floppy Disks, Hard Disk, Compact Disk, Magnetic Tape, Flash Devices).

Units of Memory: Bit, Nibble, Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Zeta Byte.

### **Unit –III: Software Concepts:**

Concept of Software, Types of Software, System Software, Operating System, Functions of OS [Processor Management, Memory Management,

## **SYLLABUS CLASS XI**

File Management, Device Management], Application Software, Utility Programs; Computer Languages: Compilers, Interpreters, Assembler. Commonly used OS, Boot and its types; Computer Languages: Low Level Language, High Level Languages, Assembly Language; Concept of GUI and CUI.

### **Unit-IV: Graphical User Interface:**

GUI based OS: Introduction to Windows, Features of Windows, File structure of Windows, Concept of Folder, Directories, Path, Path Name, Elements of Desktop, Taskbar, Icon, Start Buttons, Shortcuts, Recycle Bin, My Computer, Start Menu; Control Panel: Adding New Hardware and Programs.

### **Unit-V: Office Automation:**

Word Processing: Introduction, Open a Document, Saving a Document, Printing a Document, Page Setup, Cut, Copy, Paste, Format Painter, Bold, Italics, Underline, Superscript, Subscript, Alignment of a Text, Formatting a Text, Indentation, Line Spacing, Find, Replace of a text, Insertion of a Table with other options, Picture, Clip Art, Shapes, Chart, Hyperlink, Header, Footer, Page Number.

Spreadsheets: Basic Options, wrap text, merge and center, Number format, Conditional Formatting, Format as Table, Format as cell; Insert, Delete and

## **SYLLABUS CLASS XI**

format cells, Auto Sum, Sort, Find and select; Header & Footer, Symbols; Page Layout, Margins, Size, Paper, themes; Insert Functions.

Presentations: Creating Presentation, Opening and Saving Presentation, Adding and Formatting Text, Formatting Paragraphs, Making Notes Page and Handout, Adding Clip Art and Other Pictures; Animations – Custom Animations, Transition Speed, Transition Speed; Slide Show – Custom Slide Show, Setup Slide Show.

### **Unit VI: Programming Fundamentals:**

Introduction to VB, Concept of Event driven programming, VB user Interface, Toolbox, Project Explorer, Properties Window, Form Layout; Variables – Declaring variables, scope and life time of variables (Local & Global), Data Types: Integer, Long, Single, Double, String, Date and Variant; Operators (Arithmetic, Relational, Logical); Control Structures: Decision Structures – IF, IF – Then, IF – Then – Else, Select Case : Looping Structure – For – Next, Do – While, While – Wend.

**Practicals**

**Time = 3 Hours**

**Marks = 30 Marks**

1. Computer Assembly (Motherboard, Processor, RAM, Hard Disk, USB, etc)
2. Peripheral Connections and Identification of Parts (Serial, Parallel, USB, PS-2, Bluetooth).
3. Installation of Operating System and Application Software's.
4. Creation of Files and Folders using windows (Rename, Create, Delete, Move).
5. Creation of Word Document –
  - a. Open a document.
  - b. Insert a text.
  - c. Save a Document.
  - d. Format & Edit a Document.
6. Creation of Work Sheet –
  - a. Payroll System.
  - b. Marks Sheet, etc.
7. Creation of a Presentation – (Relevant to the Subject).

8. Create an application using Visual Basic programming to print a message like "Hello World" using Command Button and Text Button.
9. Create an application to calculate the grade of your class mates output of five different subjects like English, History, Chemistry, Math and IP. Calculate Grades as follows –

%age	Grade
$\geq 90$	A++
$\geq 80$ and $< 90$	A+
$\geq 70$ and $< 80$	A
$\geq 60$ and $< 70$	B
$\geq 50$ and $< 60$	C
Less than 50	F

10. Create an application to generate Sum of First 10 Natural Numbers using Command Button Only.

Code : 202

**ENGLISH LITERATURE**  
**Syllabus & Scheme of Assessment**

**Total Marks :- 100**

**Time: 3 hrs**

- 1) Reference to context type questions based on Poetry, Short Stories and Essays (one from each) with internal choice. 3x8=24
- 2) Three long answer type questions (100-150 words) from short stories, essays and poetry based on character sketch/ description of scene/title, theme etc to be attempted with internal choices. 3x10=30
- 3) Five short answer type questions (80-100 words) from short stories (two questions) and essays (three questions) to be attempted with internal choices. 5x5=25
- 4) Five very short answer type questions from poetry based on poetic devices (metaphor, simile, hyperbole, personification, imagery, irony, paradox, etc,) to be attempted out of given eight questions. 5x3=15
- 5) Six MCQ's to be asked from short stories, poetry and essays.(Two each) 1x6=6

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**Book Prescribed:**

Glory : Textbook of English Literature Published by J&K BOSE

Code : 203

## FUNCTIONAL ENGLISH

### Aims and Objectives of the Functional English Courses

- (i) To enable the learner to acquire competence with special emphasis on different linguistic functions.
- (ii) To reinforce the various sub skills acquired in classes IX and X with reference to reading, writing, listening and speaking.
- (iii) To equip the learner with language skills that will enable him/ her to achieve his/her Academic and career goals.
- (iv) To broaden the language base that will empower the learner to use language for creative purposes.
- (v) To promote personal growth and development..

### The Approach to Functional English Curriculum

- (i) A skill based communicative approach recommended in Functional English, with graded texts followed by learner centered and teacher- friendly activities.
- (ii) It is recommended that teachers consciously take a back seat, playing the role of a manager, co-ordinator and facilitator.
- (iii) Texts used are varied, authentic and represent various authors to help the learner discover the various aspects of language in use.

### The following skills and their objectives are spelt out in detail: -

#### 1. Reading

- (i) Variety in text type rather than having only short stories and prose pieces.
- (ii) Activities in built with enough guidance to the teacher and learners towards acquisition of reading skills.

- (iii) Vocabulary developed through word building skills.
- (iv) Reading inputs cater to the needs of the students and help to prepare them for professional courses as well as vocational courses.
- (v) Ten core objectives of the National Policy kept in mind while looking for reading inputs and working on the materials.

## **2. Specific objectives of Reading**

**(a) To develop specific study skills such as follows:**

- (i) To refer to dictionaries, encyclopedia, thesaurus and academic reference material.
- (ii) To select and extract relevant information, using reading skills of skimming and scanning.
- (iii) To transcode information from one form to another.
- (iv) To be able to read and comprehend a given text (for example advertisements, posters, newspaper articles, reports, write-ups, extracts etc. specifically).
- (v) To understand the writer's attitude and bias.
- (vi) To comprehend the difference between what is said and what is implied.
- (vii) To understand the language of propaganda and persuasion.
- (viii) To develop the ability to differentiate between claims and realities, facts and opinion.
- (ix) To develop the ability to form business opinion on the basis of latest trends available.
- (x) To develop the ability to comprehend technical language as required in computer related fields.
- (xi) To arrive at personal conclusion and comment on a given text specifically.

- (iii) To appear for interviews and participate in formal group discussions.
- (iv) To make enquiries meaningfully and adequately respond to enquiries for the purpose of travelling within the country and even abroad.
- (v) To listen to business news and be able to extract relevant/important information.
- (vi) To develop the art of formal public speaking.

**(e) Writing Skills**

- (i) Teaching skills and sub skills of writing focused on the process of writing.
- (ii) Writing skills integrated with the other skills and not compartmentalized.
- (iii) Sub skills of writing are taught in a context.
- (iv) Courses for two years graded in such a way that it leads the students towards acquire advanced writing skills.
- (v) Writing tasks move from less linguistically challenging to more linguistically challenging ones.

**Specific objectives of Writing**

**To develop the ability:**

- (i) To write letters to friends, pen friends, relatives etc.
- (ii) To write business letters and official ones.
- (iii) To send telegrams, faxes, e-mails.
- (iv) To open accounts in post offices and banks.
- (v) To fill in railway reservation slips.
- (vi) To write to various issues or institutions seeking relevant information, lodge complaints, express thanks or tender apology.

- (xii) To develop the ability to be original and creative in interpreting opinion.
  - (xiii) To develop the ability to be logically persuasive in defending one's opinion.
- (b) To develop literary skills as enumerated below
- (i) To personally respond to literary text.
  - (ii) To appreciate and analyze special features of language that differentiates literary texts from non-literary ones.
  - (iii) To explore and evaluate features of character, plot, setting etc.
  - (iv) To understand and appreciate the oral, mobile and visual elements of drama.
  - (v) To identify the elements of style such as humour, pathos, satire and irony etc.

**(c) Speaking and Listening**

- (i) Skills overtly built into the materials. (Language skills book)
- (ii) Teachers need special guidance in the actualization of the skills.
- (iii) Speaking needs a very strong emphasis and is an important objective leading to professional competence.
- (iv) Testing of oral skills to be made an important component of the overall testing pattern.

**(d) Specific objectives of Listening and Speaking Conversation Skills (Aural/ Oral)**

**To develop the ability**

- (i) To listen to lectures and talks and to be able to extract relevant and useful information for a specific purpose.
- (ii) To listen to news bulletins and develop the ability to discuss informally on wide ranging issues like current national and international affairs, sports, business etc.

- (vii) To write applications, fill in application forms, prepare personal bio-data for admission in college, universities, entrance tests and jobs.
- (viii) To write informal reports as part of personal letters on functions , programmes and activities held in school (morning assembly, annual day, sports day etc.)
- (ix) To write formal reports for school magazines or in local newspapers on the above events or occasions.
- (x) To write presentation of opinions, facts arguments in the form of set speeches for debates.
- (xi) To present papers for taking part in symposia.
- (xii) To take down notes from talks, lectures, and make notes from various resources for the purpose of developing ideas into sustained pieces of writing.
- (xiii) To write examination answers according to the requirement of the various subjects.

Code : 203

**FUNCTIONAL ENGLISH**  
**Syllabus & Scheme of Assessment**

**Total Marks :- 100**

**Time: 3 hrs**

The Paper shall be divided into Two (02) Sections covering prose, poetry and play from *Literature Reader-I* and writing skills from *Language Skills-I*.

**(Section A) Literature**

**50 Marks**

- 1) One/Two prose passage/s from prose chapters of *Literature Reader-I* followed by comprehension questions on:
  - A. True/False, Yes/No, MCQ and Fill ups 1x5=5
  - B. Vocabulary, word meaning, collocation, spelling, etc. 1x5=5
- 2) Five short answer type questions (50-80 words) from prose chapters to be attempted out of given eight questions. 4x5=20
- 3) One long answer question (100-150 words) from prose chapters of *Literature Reader-I* based on character sketch/ description of scene/event/title/theme, etc to be attempted out of two. 1x10=10
- 4) One long answer question (100-150 words) from play based on character sketch/description of scene/event/title/theme, etc to be attempted one out of two. 1x10=10

**(Section B) Writing Skills**

**50 Marks**

To test the writing skills, following tasks are to be attempted:

1. One question based on writing a message to a friend or relative.

**Or**

One question based on E-mail writing. 1x5=5
2. One question based on Notice writing.

**Or**

One question based on Poster writing. 1x7=7
3. One question based on writing a Conversation on the given topic.

**Or**

One question based on writing a Telephonic Conversation on the given topic. 1x6=6

4. One question based on article writing on the given topic.

Or

One question based on report writing on the given topic/situation. 1x10=10

5. One question based on speech writing with internal choice. 1x10=10

6. One question based on writing on recent actions and activities with internal choice. 1x5=5

7. One question based on Note-making. 1x7=7 Marks

**Books Prescribed:**

1. Functional English language Skills Book-Class XI.
2. Functional English Literature Reader-Class XI Published by Goyal Brother Prakashan in cooperation with J&K State Board of School Education.

## BIOTECHNOLOGY

### OBJECTIVES

The broad objectives of teaching Biotechnology at higher secondary level are:

- (i) To help the learners know and understand basic facts and concepts of the subject at elementary stage.
- (ii) To expose the students to different basic processes and basic techniques used in Biotechnology.
- (iii) To familiarize the learners to understand the relationship of the subject to health, nutrition, environment, agriculture and industry etc.
- (iv) To develop conceptual competence in the learners so as to cope up with professional courses in future career.
- (v) To acquaint students with different applications of Biotechnology in everyday life.
- (vi) To develop an interest in students to study Biotechnology as a discipline.

### COURSE STRUCTURE

Maximum Marks: 100  
Theory: 70 Marks  
Practical: 30 Marks

Time: 3 hours

#### Unit I: Introduction to Biotechnology

50 marks

17 marks

Chapter 1 : Introduction

04 marks

Chapter 11 : Biochemical Engineering and Fundamentals

10 marks

Chapter III : Biotechnology and Society

03 marks

## SYLLABUS CLASS XI

### **Unit II : Biomolecules 18 marks**

Chapter IV : Biomolecules: Structure and design	7 marks
Chapter V : Metabolism of Biomolecules	7 marks
Chapter VI : Biochemical Techniques	4 marks

### **Unit III : Cell and Development 17 Marks**

Chapter VII : Introduction to cell as a basic unit of life.	7 marks
Chapter VII : Cell growth and development	7 mark
Chapter IX : Cellular Techniques	3 marks

### **Unit IV : Genetics and Molecular Biology 18 Marks**

Chapter X : Principles of Genetics	10 marks
Chapter XI : Genome Function	5 marks
Chapter XII : Genetical Techniques	3 marks

### **PRACTICALS = 30 MARKS**

Note: Every student is required to do the following experiments during the academic session.

### **LIST OF EXPERIMENTS**

1. Personal safety and precautions.
2. Emergency treatment for Laboratory accidents.
3. Care and cleaning of glassware's, apparatus.
4. Operation of Autoclave, Incubator, Water Bath, pH meter, Vacuum pump, Centrifuge etc.

## SYLLABUS CLASS XI

5. Sterilization principle and methods - moist heat - dry heat and filtration methods.
6. Media preparation: Liquid media, solid media, Agar slants and plates.

1. Preparation of buffers
2. pH determination
3. slide preparation of bacterial strains
4. Protein estimation methods
  - a. Lowrey's
  - b. Biurrete
5. Molish test for estimation of carbohydrates.

**NOTE: -** Besides the above experiments the students are required to have field work and visit Indian Institute of Integrative Medicine (Formerly RRL) of Jammu / Sanatnagar, Srinagar, Biotechnology Laboratories J&K Universities.

**Book Prescribed:** A Textbook of Biotechnology for class XI by K. Kanan, published by J&K State BOSE in Collaboration with Foundation Books Pvt Ltd., New Delhi.

Code : 228

**ENVIRONMENTAL SCIENCE**  
**Class 11<sup>th</sup>**

**Maximum Marks: 100**

**Theory: 70**

**Practical: 30**

**Unit 1:- Understanding Environment**

**(7 marks)**

- Concept of Environment and its types: physical, biological and social environment.
- Scope and importance of Environmental Sciences
- Components of environment:
  - a. Lithosphere
  - b. Hydrosphere
  - c. Atmosphere
  - d. Biosphere
- Origin of Earth
- Human and environment relationship

**Unit 2:- Ecology**

**(7 marks)**

- Ecology (definition and types)
- Concept and structure of ecosystem
- Trophic relationships (food chain, food web, ecological pyramids)
- Functions of ecosystem (energy flow in an ecosystem)
- Ecological Succession (types and stages)

**Unit 3:- Ecological Interactions and Adaptations**

**(7 marks)**

- Ecological interaction and its types
- Inter-specific interaction: positive interaction (mutualism, proto-cooperation, commensalism, symbiosis and scavenging), negative interaction (parasitism, competition and ammensalism)
- Intra-specific interaction: cooperative and competitive
- Adaptations: concept and need
- Types of adaptations (with special reference to wind, light and temperature)

**Unit 4:- Population Ecology**

**(7 marks)**

- Concept of species, population and communities
- Population Dynamics (population size and density, dispersion, natality, mortality, age structure)
- Population growth (exponential and logistic growth)
- Factors regulating population growth (competition, weather and climate, territory, predation, natural disasters and diseases)
- Human population growth (Malthusian theory and neo-Malthusian theory, Demographic Transition)

**Unit 5 :- Energy Resources**

**(7 marks)**

- Concept of energy resources
- Non-renewable energy resources: coal, petroleum, natural gas
- Renewable energy resources (solar, wind and hydropower)
- Nuclear energy (uses and limitations)
- Biofuels

**Unit 6:- Earth's Environment and Natural Disasters**

**(7 marks)**

- Atmosphere: structure and composition
- Hydrosphere: distribution, hydrological cycle
- Lithosphere: structure
- Biogeochemical cycles (Carbon, Nitrogen and Phosphorus)
- Natural disasters (earthquakes, floods and volcanoes)

**Unit 7:- Environmental education and Awareness**

**(7 marks)**

- Concept and need of environmental education
- Formal and informal means of environmental education
- Modes of environmental awareness
- Role of NGOs
- Environmental movements (Chipko movement, Narmada Bachao Andolan)

**Unit 8:- Environmental Health**

**(7 marks)**

- Concept of health and disease
- Water borne diseases (Cholera, Hepatitis, Typhoid)
- Air borne diseases (Influenza, Tuberculosis)
- Soil borne diseases (Tetanus, Botulism)
- Occupational diseases (Silicosis, Asbestosis)

**Unit 9:- Natural Resources**

**(7 marks)**

- Forest resources (types and uses)
- Animal resources (fish and livestock)
- Water resources (fresh and marine)
- Mineral resources (types and uses)
- Medicinal plants (with special reference to J&K)

**Unit 10:- Managing Agriculture**

(7 marks)

- Concept of traditional and modern agriculture
- Green revolution and white revolution
- Pesticides and fertilizers (types, advantages and disadvantages)
- Integrated pest control
- Food security

**PRACTICALS:**

1. Study of density and abundance of different plant species in a particular area using quadrat method.
2. Determination of water, air and soil temperature.
3. Collection of locally available herbal plants and preparation of herbarium.
4. Field work and visit to National Park / wild life sanctuary / STP / water body and preparation of a field report.
5. Visit to a nearby primary or middle school to impart environmental awareness.
6. Documentation of agricultural crops, fertilizers and pesticides used in your locality.

Code : 251

## MICROBIOLOGY

### OBJECTIVES

The broad objectives of teaching Microbiology at higher secondary level are:

- (i) To help the learners know and understand basic facts and concepts of the subject at elementary stage.
- (ii) To expose the students to different basic processes and basic techniques used in Microbiology.
- (iii) To familiarize the learners to understand the relationship of the subject to health, nutrition, environment, agriculture and industry etc.
- (iv) To develop conceptual competence in the learners so as to cope up with professional courses in future career.
- (v) Studying, preventing and controlling infectious disease.
- (vi) To develop an interest in students to study Microbiology as a discipline.

### COURSE STRUCTURE

Maximum Marks: 100  
Theory: 70 Marks

Time: 3 hours  
Practical: 30 Marks

#### UNIT 1 : General Microbiology

12 marks

Chapter I : History and importance of microbiology. Koch's postulates, Difference between prokaryotes and eukaryotes. Introduction to microbial world: bacteria, virus, fungi and protozoa. Scope of microbiology (medical, agricultural veterinary, sanitary, environmental, industrial and food microbiology).

## SYLLABUS CLASS XI

Chapter II : Introduction to microscopy: Simple, Compound, Fluorescent, Phase Contrast, Dark Field, Electron Microscope.

Chapter III: Five kingdom and three domain classification of organisms: Bacteria, Eucarya and Archaea.

### **Unit II : Bacterial structure** **12 marks**

Chapter IV: Morphology of bacteria: Shape, size and arrangement. Motility. Fine structure of bacteria: cell wall, cell membrane, outer membrane, flagella, pilli, capsule, cytoplasmic inclusions, ribosomes and nuclear material. Structure of bacterial spore. Bacterial stains: simple, Grams (gram positive Gram negative), Ziehl-Neelson (Acidfast and non acidfast), capsule and spore stain.

### **Unit III : Bacterial Physiology** **11 Marks**

Chapter V : Bacterial nutrition, Physical growth parameters (Temperature, pH, oxygen tension). Bacterial growth curve, Bacterial reproduction, Bacterial count: total and viable. Autotrophic, heterotrophic, thermophilic, mesophilic, psychrophilic organisms.

Chapter VI: Cultivation of bacteria. Colony characteristics, growth media liquid, solid, general, differential, selective, enrichment, transport) and their preparation. Cultivation methods: aerobic and anaerobic. Isolation, identification and preservation of pure culture. Lyophilization.

Chapter VII: Definition: virus, virion, viriods, prions and bacteriophage Historical background of virus. General characteristics of viruses. Structure of virus: capsid, nucleocapsid, envelope. Viral symmetry: icosahedral (polio virus), helical (Tobacco Mosaic Virus) and complex (pox virus). Replication of viruses.

## SYLLABUS CLASS XI

### Unit V : Protozoa, Algae and Fungi

12 Marks

Chapter VIII: Protozoa, Definition, general characters classification structure and reproduction: asexual and sexual

Chapter IX: Fungus: Definition, general characters classification structure and reproduction.

Chapter X: Algae: Definition, general characters, classification and reproduction.

### Unit VI : Sterilization and Disinfection

14 Marks

Chapter XI: Definition: sterilization, disinfection, antisepsis, pasteurization and tyndalization. Physical agents: heat (moist/dry), desiccation, radiation, filtration and centrifugation. Chemical agents: phenol and phenolic compounds, alcohol, halogens, detergents, aldehydes. Radial walker coefficient (phenol coefficient). Segregation and disposal of contaminated waste.

Chapter XII: Antimicrobial and chemotherapeutic agents: general properties and drug resistance. Antimicrobial agents: antibacterial, antiviral, antifungal, antiprotozoal. Bactericidal and bacteriostatic agents.

### PRACTICALS & PROJECT = 30 MARKS

Note: Every student is required to do the following experiments during the Academic Session.

### LIST OF EXPERIMENTS

Marks: 10

1. Standard laboratory safety practices.
2. Washing of glassware.
3. Microscope: Parts, description, care, handling and procedures.
4. Gram staining.

## SYLLABUS CLASS XI

**Marks 10**

5. Demonstration of Gram positive, Gram negative bacteria in prepared slides.
6. Visit to govt. institutions ((microbiology laboratories) for demonstration and working of autoclave, hot air oven, laminar flow, centrifuge, glassware used in microbiology laboratory etc.

Project work with ten page write up on any one like: Gram staining, preparation of any bacteriological growth medium, streaking of plates, isolation of any microorganism.

**Marks : 10**

**Code : 229**

## **PHYSICS**

25% of the maximum marks is allotted to numerical problems.

**Maximum Marks: 100**

**Maximum Marks: 100**  
**Theory: 70 Marks**

**Time: 3 hours**  
**Practical: 30 Marks**

### **Unit - I : Mathematical Tools**

**Marks 04**

Functions, limits of function, simple ideas of differentiation integration, differentiation of  $x^n$ ,  $e^{ax}$ ,  $\sin x$  by ab-initio method, integration of  $x^n$ ,  $1/x$ ,  $e^{ax}$ ,  $\sin x$  and  $\cos x$ . Simple Idea of definite integral.

### **Unit - II : Physical world and measurement**

**Marks 5**

Physics - Scope and excitement, physics in relation to science, society and technology. Need for measurement, units of measurement, system of units, SI Units, fundamental and derived units, length, mass and time measurement. Accuracy and precision of measuring instruments; errors in measurement, significant figures.

Dimensions of physical quantities, dimensional analysis, its applications.

### **Unit III : Kinematics**

**Marks 7**

Motion in a straight line, position time graph, speed and velocity.

Uniform and non uniform motion, average speed and instantaneous velocity. Uniformly accelerated motion, velocity time graph, position time graphs, relations for uniformly accelerated motion. (graphical treatment and calculus approach).

Scalar and vector quantities, position and displacement vectors, general vector and notation, equality of vectors, multiplication of vectors by a real number, addition and subtraction of vectors, Relative velocity.

Unit vector, Resolution of a vector in a plane rectangular components, Scalar and vector product of two vectors with properties, Motion in a plane, cases of uniform velocity and uniform acceleration. Projectile motion.

## SYLLABUS CLASS XI

### Unit-IV : Laws of Motion

Marks 7

Concept of force and inertia, Newton's first law of motion, Momentum and Newton's second law of motion, impulse, Newton's Third Law of Motion. Law of conservation of linear momentum and its applications, Equilibrium of concurrent forces.

Friction, static and kinetic friction, laws of friction, rolling friction. Dynamics of uniform circular motion, centripetal force, examples of circular motion (vehicle on level circular road, vehicle on banked road).

### Unit-V : Work, Energy and Power

Marks 6

Concept of scalar product of vectors, Work done by a constant force and a variable force, Kinetic Energy, Work energy theorem, Power.

Motion of potential energy, potential energy of spring, conservative forces, conservation of mechanical energy (K. E. and P. E's), non conservative forces, elastic and inelastic collision in one and two dimensions.

### Unit-VI : Motion of system of particles and Rigid body.

Marks 6

Centre of mass of a two particle system, momentum, conservation and centre of mass motion, centre of mass of a rigid body, centre of mass of circular ring, disc, rod and sphere.

Concept of vector product of vectors: Moment of a force, torque, angular momentum, conservation of angular momentum with some examples.

Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, Comparison of linear and rotational motions, moment of inertia, radius of gyration.

Values of moment of inertia for simple geometrical objects (no derivation), statement of parallel and perpendicular axes theorem and their applications.

### Unit VII: Gravitation

Marks 6

Kepler's laws of planetary motion, The universal law of gravitation. Acceleration due to gravity and its variation with altitude, depth and shape, Gravitational potential, gravitational

## SYLLABUS CLASS XI

potential energy, escape velocity, orbital velocity of a satellite, geo-stationary satellite.  
Inertial and gravitational mass.

### Unit VIII: Properties of Bulk matter

7 Marks

Elastic behaviour, stress-strain relationship, Hooke's law, young's modulus, bulk modulus, shear modulus of rigidity.

Pressure due to fluid column, Pascal's law and its applications (hydraulic lift and hydraulic brakes). Effect of gravity on fluid pressure.

Viscosity, stoke's law, terminal velocity, streamline and turbulent flow, Critical velocity, Reynold number, Bernoulli's theorem and its applications.

Surface energy and surface tension, angle of contact, applications of surface tension, ideas to drops, bubbles and capillary rise, action of detergents.

Heat, temperature, thermal expansion, specific heat, calorimetry, change of state-latent heat. Heat transfer-conduction, convection and radiation, thermal conductivity, Newton's law of cooling.

### Unit IX : Thermodynamics

6 Marks

Thermal equilibrium and definition of temperature (Zeroth law of thermodynamics). Heat, work and internal energy, First law of thermodynamics. Second law of thermodynamics, reversible and irreversible processes. Heat engines and refrigerators (concept only).

### Unit X : Behavior of perfect gas and Kinetic theory

6 Marks

Equation of state of perfect gas, work done on compressing a gas.

Kinetic theory of gases-assumptions, concept of pressure, expression for pressure exerted by a gas, Kinetic energy and temperature, rms speed of gas molecules, degrees of freedom, law of equipartition of energy (statement only) and application to specific heat capacities of gases, concept of mean free path, Avogadro's number.

### Unit XI : Oscillation and waves

10 Marks

Periodic motion - period, frequency, displacement as a function of time. Periodic functions, simple harmonic motion (S.H.M) and its equation, phase, oscillation of a spring-restoring

## SYLLABUS CLASS XI

force and force constant, energy in S.H.M-Kinetic and potential energies, simple pendulum- derivation of expression for its time period, free forced and damped oscillations (qualitative ideas only), resonance.

Wave motion - Longitudinal and transverse waves, speed of wave motion, Displacement relation for a progressive wave, Principle of super position of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics. Beats, Doppler effect.

## PRACTICALS

NOTE :- Every student is required to perform minimum of 10 experiments and 8 activities.

### EXPERIMENTS :

1. Use of vernier calipers
  - i) To measure diameter of a small spherical/ cylindrical body.
  - ii) To measure internal diameter and depth of a given beaker/ calorimeter and hence find its volume.
2. Use of screw gauge.
  - i. To measure diameter of given wire.
  - ii. to measure thickness of a given sheet.
  - iii. to measure volume of an irregular lamina.
3. To determine radius of curvature of a given spherical surface by a spherometer.
4. To find the weight of a given body using parallelogram law of vectors.
5. Using a simple pendulum plot L-T graph hence find acceleration due to gravity (g).
6. To study the relation between force of limiting friction and normal relation force find coefficient of friction between a block and a horizontal pull of the earth and study in relationship with the angle of inclination by plotting a graph between force and  $\sin \theta$ .

## SYLLABUS CLASS XI

### ACTIVITIES/Project work

1. To make a paper scale of a given least count e.g. 0.2 cm, 0.5 cm.
2. To determine mass of given body using a meter scale by principle of moments.
3. To plot a graph for a given set of data, with proper choice of scales and error bars.
4. To measure the force of limiting friction for rolling of a roller on a horizontal plane.
5. To study the variation in range of jet of water with angle of projection.
6. To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time.
7. To study collision of two balls in two dimensions.

### EXPERIMENTS

1. To determine young modulus of elasticity of the material of a given wire.
2. To find the force constant of a helical spring by plotting a graph between load and extension.
3. To determine the surface tension of water by capillary rise method.
4. To determine the coefficient of velocity of a given viscous fluid by measuring the terminal velocity of a given spherical body.
5. To find the speed of sound in air at room temperature using a resonance tube by two resonance position method.
6. To study relation between the length of a given wire and tension for constant frequently using sonometer.
7. To determine specific heat of a given solid and liquid, by method of mixtures.

## **SYLLABUS CLASS XI**

### **ACTIVITIES/PROJECT WORK**

1. To observe change of state and plot a cooling curve for melted wax.
2. To observe and explain the effect of heating on a bi-metallic strip.
3. To study the effect of detergent on surface tension by observing capillary rise.
4. To study the factors effecting the rate of loss of heat of a liquid.
5. To study the effect of nature of surface on emission and absorption of radiation.

**Suggested Textbook:** Textbook of Physics for class XI published by NCERT, New Delhi.

## CHEMISTRY

Maximum Marks: 100

Time 3 hrs.

Theory: 70 Marks

Practical: 30 Marks

### UNIT-I: SOME BASIC CONCEPTS OF CHEMISTRY

05 Marks

General Introduction: Importance of studying chemistry, Historical approach to particulate nature of matter, Laws of Chemical combination (numerical), Dalton's Atomic Theory, Concept of elements, atoms & molecules, Atomic and molecular masses, Mole concept and molar mass, percentage composition, empirical and molecular formula; chemical reactions, stoichiometry and calculation based on stoichiometry.

### Unit-II: STRUCTURE OF ATOM

05 Marks

Discovery of electron, proton and neutron, atomic number, isotopes and isobars. Thompson's model and its limitations, Rutherford's model and its limitations, Bohr's model & its limitations, concept of shells and sub-shells. Dual nature of matter and light, de-Broglie's relationship. Heisenberg's uncertainty principle; concept of orbitals, quantum numbers, shapes of s, p and d- orbitals. Rules for filling electrons in orbitals- Aufbau's principle, Pauli's exclusion principle and Hund's rule. Electronic configuration of atoms, stability of half filled and completely filled orbitals.

### Unit-III: CLASSIFICATION OF ELEMENT AND PERIODICITY IN PROPERTIES

05 Marks

Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of the periodic table, periodic trends in properties of elements: atomic radii, ionic radii, inert gas radii, ionization enthalpy, electron gain enthalpy, electronegativity, valence.

**Unit-IV: CHEMICAL BONDING AND MOLECULAR STRUCTURE**

**05 Marks**

Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar character of covalent bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization involving s, p and d- orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear molecules (Qualitative idea only), hydrogen bond.

**Unit-V: STATES OF MATTER: GASES AND LIQUIDS**

**06 Marks**

Three states of matter: intermolecular interactions, type of bonding, melting and boiling points, role of gas laws in elucidating the concept of the molecule, Boyle's law, Gay-Lussac's law, Avogadro's law, ideal behavior, empirical derivation of gas equation, Avogadro's number, ideal gas equation, deviation of real gases from ideal behavior, Liquefaction of gases, critical temperature.

**Liquid state-** Vapor pressure, surface tension, viscosity (Qualitative idea only, no mathematical derivation).

**Unit-VI: THERMODYNAMICS**

**04 Marks**

Concepts of system, types of systems, surrounding, work, heat, energy, intensive and extensive properties, state functions. First Law of Thermodynamics, internal energy, enthalpy, heat capacity, specific heat, molar heat capacity, measurement of  $\Delta E$  and  $\Delta H$ , Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition ionization and dilution.

Introduction of entropy as a state function, free energy change for spontaneous and non-spontaneous process and equilibrium.

**Unit-VII: EQUILIBRIUM**

**05 Marks**

Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium; Le-Chatelier's principle; ionic equilibrium- ionization of acids and bases, strong and weak electrolytes,

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degree of ionization, Concept of pH. Hydrolysis of salts (elementary idea), buffer solutions, solubility product, common ion effect (with suitable examples).

### Unit-VIII: REDOX REACTIONS

02 Marks

Concept of oxidation and reduction, redox reactions, oxidation number, balancing of chemical equations in redox reactions, applications of redox reactions.

### Unit-IX: HYDROGEN

02 Marks

Position of hydrogen in periodic table, occurrence, isotopes, preparation, properties and uses of hydrogen, hydrides-ionic, covalent and interstitial. Physical and chemical properties of water; heavy water; hydrogen peroxide-preparation, reactions and structure, hydrogen as a fuel,

### Unit-X: s-BLOCK ELEMENTS (ALKALI AND ALKALINE EARTH METALS)

06 Marks

#### Group 1 and Group 2 elements;

General introduction, electronic configuration, occurrence, uses, anomalous properties of the first elements in each group, diagonal relationship; trends in the variation of properties (such as ionization enthalpy, atomic and ionic radii). Trends in chemical reactivity with oxygen, hydrogen, water and halogens; uses.

**Preparation and properties of some important compounds:** Sodium carbonate, Sodium chloride, sodium hydroxide and sodium hydrogen carbonate. Biological importance of sodium and potassium; CaO, CaCO<sub>3</sub> and industrial uses of lime and limestone, biological importance of Mg and Ca.

### Unit-XI: SOME p-BLOCK ELEMENTS

05 Marks

#### General introduction to p-Block Elements

Group 13 elements: General introduction, electronic configuration, occurrence,

## SYLLABUS CLASS XI

variation of properties, oxidation states, trends in chemical reactivity, anomalous properties of the first element in group. Boron - physical and chemical properties; some important compounds: borax, boric acids, boron hydrides.

Aluminium: uses, reactions with acids and alkalis.

**Group 14 elements:** General introduction, electronic configuration, occurrence, anomalous properties of the first element in group, trends in physical properties, trends in chemical properties. Carbon - catenation, allotropic forms, physical and chemical properties, trends in chemical properties, uses of oxides of carbon, important compounds of silicon and their uses: silicon tetrachloride, silicones, silicates and zeolites.

### Unit-XII: ORGANIC CHEMISTRY- SOME BASIC PRINCIPLES AND TECHNIQUES

09 Marks

General introduction to organic chemistry, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds.

Electronic displacement in a covalent bond: inductive effect, electromeric effect, resonance and hyper-conjugation. Homolytic and heterolytic fission of a covalent bond, free radicals, electrophiles, nucleophiles, carbocations and carbanions. Types of organic reactions.

### Unit-XIII: HYDROCARBONS

09 Marks

#### Classification of hydrocarbons

**Alkanes:** Nomenclature, isomerism, conformations (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis.

**Alkenes:** Nomenclature, structure of double bond (ethene), geometrical isomerism, methods of preparation, physical properties, chemical reactions- addition of hydrogen, halogen, water, hydrogen halides (Markownikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition.

**Alkynes:** Nomenclature, structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of-

## SYLLABUS CLASS XI

hydrogen, halogens, hydrogen halides and water, **Aromatic hydrocarbons**: Introduction, IUPAC nomenclature; Benzene: resonance, aromaticity; chemical properties; mechanism of electrophilic substitution - nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation; directive influence of functional group in monosubstituted benzene.

### Unit-XIV: ENVIRONMENTAL CHEMISTRY

02 Marks

Environmental pollutions: soil, water and air pollution, acid rain, effects of the depletion of ozone layer, Green house effect and global warming- pollution due to industrial wastes. Lake water pollution: sources of pollutants in lake water, sources of pollution in Dal lake, Wullar lake and Mansar lake in J&K state. Green chemistry as an alternative tool for reducing pollution, strategy for control of environmental pollution.

## PRACTICALS

Marks: 30

Time: 3 Hrs.

### A) Organic Preparations:

- i) Preparation of acetylene and study of its acidic character.
- ii) Preparation of Acetanilide
- iii) Preparation of p-Nitroacetanilide

### B) Characterization and Purification of Chemical Substance:

- i) Determination of melting point of an organic compound (below 100°C)
- ii) Determination of boiling point of an organic liquid.
- iii) Crystallization involving impure sample of any one of the following: Alum, Copper sulfate, Benzoic acid.

### C) Experiments Related to pH Change

Any one of the following experiments:

- i) Determination of pH of some solutions obtained from juices and solutions of

## SYLLABUS CLASS XI

- known and varied concentrations of acids, bases and salts using pH paper/ universal indicator.
- Comparing the pH of solutions of strong and weak acid of same concentration.
  - Study the pH change in the titration of a strong acid with a strong base using universal indicator.
  - Study of pH change by common-ion effect in case of weak acids and weak bases.

### D) Chemical Equilibrium:

One of the following experiments:

- Study the shift in equilibrium between ferric ions and thiocyanate ions by increasing/ decreasing the concentration of either ions.
- Study the shift in equilibrium between  $[\text{Co}(\text{H}_2\text{O})_6]^{2+}$  and  $\text{Cl}^-$  ions by changing the concentration of either ions.

### E) Quantitative Estimation:

- Setting of a chemical balance and preparation of a standard solution of oxalic acid.
- Determination of strength of a given sodium hydroxide solution by titrating it against a standard solution of oxalic acid.
- Preparation of standard solution of sodium carbonate.
- Determination of strength of given solution of dilute hydrochloric acid by titrating it against a standard solution of sodium carbonate.

### F) Qualitative Analysis

**Determination of one cation and one anion in a given salt (insoluble salts to be excluded):**

**Cations:**  $\text{Pb}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{As}^{3+}$ ,  $\text{Al}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Co}^{2+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Sr}^{2+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{NH}_4^+$

**Anions:**  $\text{CO}_3^{2-}$ ,  $\text{S}^{2-}$ ,  $\text{SO}_3^{2-}$ ,  $\text{SO}_4^{2-}$ ,  $\text{NO}_2^-$ ,  $\text{NO}_3^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{PO}_4^{3-}$ ,  $\text{C}_2\text{O}_4^{2-}$ ,  $\text{CH}_3\text{COO}^-$

**G) PROJECT**

Scientific investigation involving laboratory testing and collecting information from other sources.

- \* Determination of BOD/ COD of locally available water sample.
- \* Analysis of fruit and vegetable juices for their acidity.
- \* Preparation of a sample of soap from available oils (Groundnut/Coconut oil).
- \* To dye wool and cotton clothes with any marked available dye.
- \* Study of the the effect of acids and bases on the tensile strength of fibres.
- \* Silvering of mirrors
- \* Compare the contents of tannic/ caffeine in various samples of tea and hence their flavor.

**Note:** Collaboration to sought from nearby institutions with regard to the performing of practicals/project work.

**Suggested Textbook:** A textbook of Chemistry for class XI published by NCERT, New Delhi

Code : 231

## BIOLOGY

Maximum Marks: 100

Time: 3hrs.

Theory: 70 Marks

Practical: 30 Marks

### SECTION A: (Botany)

Marks: 35

#### Unit-I Diversity of Life

8 marks

Variety of living organisms Systematics, need, history and classification (Artificial, natural and Phylogenetic). **Biosystematics**, Binomial nomenclature, Two kingdom system, five kingdom system, their merits and demerits. (Detailed study of kingdom: Monera Protista and fungi), status of some acellular organisms/Slime moulds like: viruses and viroids. Lichens taxonomic aids i.e. Botanical garden, herbaria, museum & keys.

#### Unit-II Kingdom Plantae

9 marks

Salient features of various plant groups for identification and their classes (Algae, Bryophytes, Pteridophytes, Gymnosperms and angiosperms). **Morphology of flowering plants and their function**. Morphology of root, stem, leaves, inflorescence, flowers, fruits and seed. Description of flowering plants of families Fabaceae, Solanaceae and Liliaceae.

#### Unit-III Anatomy of flowering plants

8 Marks

**Tissues and tissue system**, Types of Tissues, Meristematic and Permanent and their classification and functions.

Anatomy of Dicot and Monocot Root, Stem and Leaves, Secondary Growth in Dicot stems and roots.

**Plant Physiology:**

**Transport in plants:** means of transport, (diffusion, facilitated diffusion, Passive symports and anti ports, Active transport)

**Plant water relations:** water potential, osmosis, plasmolysis, imbibition, long distance transport of water- apoplast, symplast, pathways ascent of sap, Root pressure theory and transpirational pull theory (cohesion - tension theory).

**Tranpiration:** types & significance, mechanism of opening and closing of stomata, guttation, Phloem transport, flow from source to sink, (mass flow hypothesis)

**Unit IV Mineral Nutrition**

**10 Marks**

Methods to study mineral requirement (Hydroponics). Essential mineral, elements criteria for essentiality of nutrients. Essential elements. Micro and Macro nutrients, their role and deficiency symptoms. Mechanism of absorption of elements, translocation of solutes, soil and reservoir of essential elements. **Nitrogen metabolism**, Nitrogen cycle- Biological nitrogen fixation, 'Photosynthesis, Historical background, site of photosynthesis. Various photosynthetic pigments, Mechanism, Light reaction including PS I, PS II and photophosphorylation (Cyclic and non-cyclic). Dark reaction or Biosynthetic phase, Calvin ( $C_3$ ) cycle,  $C_4$  cycle, factors effecting photosynthesis. Photorespiration.

**Respiration:-** Introduction mechanism- glycolysis, Kreb's cycle. Electron transport system, Aerobic and anaerobic respiration. Respiratory quotient.

**Growth and Development:-** Characteristics of plant growth, phases of growth, growth curve and its components- differentiation, dedifferentiation and redifferentiation,

**Development**, sequence of developmental processes in a plant cell, **plant growth regulators**, discovery and physiological effects (Auxins, Gibberellins, cytokinins, ethylene and IBA, Photoperiodism and vernalisation.

**Unit-III Diversity in Living world.****8 Marks**

- i) Characteristic features of living organisms.
- ii) Salient features of animals (non chordates upto phylum level, chordates upto class level), Animal kingdom
- iii) Zoological parks, Natural museums (with special reference to local Zoos/National Parks (Manda, Mahamaya, Dachigam, Hemis))

**Unit-IV Cell-Structure and Function****10 Marks**

- i) **Cell-** Brief description of cell, Cell theory; Prokaryotic and eukaryotic cell, cell wall, cell membrane and cell organelles (Plastids, Mitochondria, Endoplasmic reticulum, Golgi bodies/dictyosomes, Ribosomes, Lysosomes, Nucleus, Vacuoles, Centrioles), Cilia and flagella, and nuclear organization.
- ii) **Cell Division:-** Cell cycle, Mitosis, Meiosis.
- iii) Basic chemical constituents of living bodies.
- iv) **Biomolecules:** Structure and functions of :- carbohydrates, proteins, lipids and nucleic acids, Metabolites (Primary and Secondary, Metabolism (elementary idea)
- v) **Enzymes:** Types, Properties and Functions.

**Unit-III Histology and Morphology****7 marks**

- i) **Animal tissues:-** Epithelial, Connective, Muscular & Nervous, Organ and Organ system
- ii) **Elementary Knowledge of :-** Morphology and Anatomy of Frog, Earthworm & Cockroach.

**Unit IV Human Physiology****10 Marks**

- i) Digestion and Absorption
- ii) Breathing and Respiration
- iii) Body fluids and circulation
- iv) Excretory products and elimination

## SYLLABUS CLASS XI

- v) Locomotion and Movement
- vi) Neural control and coordination
- vii) Chemical coordination and integration.

## PRACTICALS

M.Marks- 15

Time: 3 hrs.

### SECTION A: (BOTANY)

Marks: 7½

1. Study of different parts of a Compound Microscope.
2. Study of specimens and identification with reasons- Bacteria, Oscillatoria, Spirogyra, Rhizopus, Mushroom, Yeast, Liverwort (Marchantia/Moss (Funaria), Pinus (Male & female cone), Lichens.
3. Study of different modifications in
  - a. Roots (Tap & Adventitious)
  - b. Stems (Herbaceous & Woody)
  - c. Leaves (Leaf arrangement, shape, venation, simple & Compound leaves)
4. Description of 3 locally available flowers from the families- Fabaceae, Solanaceae and Liliaceae ( 1 from each family)
5. Study of plant tissues from permanent slides (Parenchyma, Collenchyma, Sclerenchyma, Xylem and Phloem)
6. Study of T.S. of Dicot & Monocot Root, Stem and leaf from permanent slides.
7. Study of osmosis by Potato osmoscope.
8. Study of Plasmolysis in epidermal peels(e.g. Rhoeo leaves)
9. Study of distribution of stomato in upper and lower surface of leaves
10. To make comparative study of the rates of transpiration in upper and lower surface of leaves by cobalt chloride method
11. Study of imbibition in seeds/ raisins
12. Observation and comment on the experimental set up on phototropism.
13. To separate plant pigments through paper chromatography.

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### SECTION-B (ZOOLOGY)

Marks: 7½

1. Study and handling of compound Microscope.
2. Study of sailent features of specimen and identification with reasons; Amoeba, Paramoecium, Hydra, Liver fluke, Ascaris, Leech, Earth worm, Honeybee, Snail, Star fish, Shark, Labeo, Frog, Lizard and Pigeon.
3. Study of preserved specimens of at least one representative of each group to understand co-relations between characteristics of organisms and systematic position.
4. Study of animal cell and its organelles with the help of chart/slides.
5. Study of Mitosis and Meiosis from prepared slides.
6. Preparation of temporary mounts of mammalian squamous epithelium stripped muscles, fibres and mammalian blood film.
7. Study of different types of mammalian connective tissues, muscle fibres and nerve cells through prepared permanent slides.
8. Study of different systems with the help of charts/dissections-Earthworm, Cockroach.
9. Testing for the presence of carbohydrate and protein.
10. Preparation and study of human blood smear.

#### Project work:

1. Collection of animal specimen for school museum.
2. Visit to a zoological /National park and preparation of report.
3. Study of cyclosis in Paramoecium.
4. Study of Mitosis by using root tips of onion.
5. Study of Meiosis from flower buds.
6. Study of external morphology of earthworm, cockroach and frog.

**Textbook Suggested:** A Textbook of Biology for class XI published by NCERT, New Delhi.

Code : 232

## ELECTRONICS

**Maximum Marks: 100**

**Practical: 30**

**Theory: 70**

### Unit - I

#### AC Signals :

**(06 Marks)**

Definition of amplitude, frequency, time period, phase, sinusoidal signals, Triangular wave, Square wave, saw tooth wave. Periodic and non periodic signals. RMS Value, average value for sinusoidal signals, phasor representation of sinusoidal signals;

### Unit - II

#### Passive Components:

**(08 Marks)**

**Resistance**, Resistors, Types of resistors, variable resistance, colour code and power rating of resistors, combination of resistors (series and parallel), principle of rheostat.

**Capacitance**: Capacitors - types of capacitors, variable capacitors, colour codes, charging and discharging of capacitor, energy stored in a capacitor, combination of capacitors.

**Inductors**: Faraday's & Lenz's Law, self and mutual inductance, types of inductors, energy stored in an inductor, combination of inductors.

### Unit - III

#### Circuits:

**(12 Marks)**

DC Circuits - RC, RL and LC circuits for growth and Decay of current and voltage. AC Circuits- Pure R, L and C Circuits and RC, RL and LC and RLC series and parallel and resonance circuits.

### Unit - IV

#### Network Theorems :

**(09 Marks)**

Voltage and current sources (Ideal & Practical). KCL and KVL (with numerical) voltage

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division Theorem, Current Division Theorem, Thevenin theorem, Norton theorem, Superposition theorem. (Simple numerical on circuit analysis using various theorems).

### Recommended/ Suggested books :

- Basic Electrical Engineering by S.N.Singh PHI
- Introduction to Electric Circuit Analysis by Ronald J. Tocci

## UNIT - V

### Semi Conductors:

(09 Marks)

Electronic configuration of atoms, crystalline structure of solids, Band theory of solids, Classification of metals, Semi conductors and Conductors on the basis of band theory. Types of semi conductors, Intrinsic and extrinsic (p & n type), semiconductors, temperature coefficient of Semi conductors.

## Unit - VI

### P N Junctions:

(09 Marks)

PN-junction: concept of depletion region & potential barrier. Drift and diffusion phenomenon PH junction, operation and V- I Characteristics (Forward and Reverse bias). Zener diode, Photo diode, LED. Introduction to solar cell.

## Unit - VII

### Applications of Diodes

(12 Marks)

Diode as half and full wave rectifier (qualitative treatment). Ripple factor and efficiency in half wave and full wave rectifier. Zener diode as voltage regulator. Diode as a clipper (positive and negative clipping), diode as a damper.

## Unit - VIII

### Bipolar Junction Transistor ( BJT):

(05 Marks)

PNP and NPN Transistor, circuit symbols, construction and V-I characteristics. Different Transistor configurations (CB&CE). Current gain  $\alpha$  and  $\beta$  of a transistor. Relation between  $\alpha$  and  $\beta$ .

### Recommended/ Suggested books

- 1) Semiconductor circuit approximations by A.P.Malvino

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- 2) Basic electronics by B.L. Theraja.
- 3) Principles of Electronics by V.K. Mehta & R. Mehta.
- 4) Basic Electronics and linear Circuits by N.N. Bhargava.

- 1) Identification of Electronics Components.
- 2) To measure Voltage (ac & dc), current (a.c & d.c.) and resistance using a Multimeter.
- 3) To find the value of a carbon resistor using colour coding and verify with a multimeter.
- 4) To find the value of a capacitor using colour code.
- 5) To study the common front controls of a C.R.O.
- 6) To find the amplitude and frequency of a.c. signal using C.R.O.
- 7) Verification of current Division principle.
- 8) Verification of voltage Division principle.
- 9) Verification of Thevenin's theorem.
- 10) Verification of Norton's theorem.
- 11) Verification of Superposition theorem.

- 1) To study the characteristics of a PN Junction.
- 2) To study diode as a half wave rectifier.
- 3) To study diode as a full wave rectifier.
- 4) To study the characteristics of a Zener Diode.
- 5) To study diode as a clipper.
- 6) To study diode as a damper.
- 7) To study the characteristics of an NPN CB configuration.
- 8) To study the characteristics of an PNP CB configuration.
- 9) To study the characteristics of a NPN CE configuration.
- 10) To study the characteristics of a PNP CE configuration.
- 11) To find the value of  $\alpha$  and  $\beta$  from the characteristics curves of an NPN transistor.

**Code : 234**

## **BIOCHEMISTRY**

**Maximum Marks: 100**

**Theory: 70**

**Practical: 30**

**Time 3 hrs.**

**Note :** Each unit comprises of 10 lectures and 10 marks.

### **Unit-I : Biophysical Chemistry**

**05 marks**

Water, pH, pKa, buffers, Hydrophilicity, hydrophobicity. Hydrogen-bonding, vander Waal and ionic interactions. Osmosis, diffusion, dialysis.

### **Unit-II : Cell and subcellular Organelles Structure and Function - Part I**

**06 marks**

Plasma membrane: fluid mosaic model, extrinsic, intrinsic and transmembrane proteins. Transport: uniport, antiport and symport. Endoplasmic reticulum, Golgi apparatus, lysosomes and vacuoles.

### **Unit-III : Cell and subcellular Organelles Structure and Function - Part II**

**06 marks**

Nucleus, Ribosomes, Mitochondrion, Chloroplasts: Nucleolus/nucleolus region, Inner-mitochondrial membrane and matrix, organization of chloroplast and ribosome.

### **Unit-IV : Digestion and Absorption of Food**

**06 marks**

Digestion and absorption of carbohydrates, proteins and lipids. Role of enzymes in digestion, bile salts in emulsification of lipids and other factors in absorption. Role of non-digestible dietary constituents.

## SYLLABUS CLASS XI

### Unit-V : Chemistry of Carbohydrates

06 marks

Classification of carbohydrates, Isomerism in monosaccharides: Spatial/stereo-isomerism: Epimerism and anomerism. Optical isomerism. Important disaccharides: Sucrose, lactose, maltose etc. Important polysaccharides: Starch/glycogen, cellulose, chitin and glycosamine, glycans.

### Unit-VI : Chemistry of Amino Acids and Proteins

06 marks

Amino acids of proteins. Essential and non-essential amino acids. Classification of amino acids based on R group, charge, hydrophobicity, aromatic, heterocyclic and sulfur-containing. Peptide bond. Classification of proteins based on function e.g. Structural, transport, catalytic, regulatory, hormones, antibodies and chromoproteins.

### Unit VII: Chemistry of Lipids

06 marks

Classification : Fatty acids (Odd and even C; saturated, unsaturated, branched), glycerides. Phospholipids (phosphoglycerides: Lecithins, cephalins, phosphoinositides and phosphosphingolipids). Glycolipids and Lipoproteins.

### Unit VIII: Chemistry of Nucleic Acids

06 marks

Introduction to nucleotides and deoxyribonucleotides.

Organization of nucleotides in DNA and RNA

Structure of B-DNA. Types of RNA: mRNA, tRNA, rRNA.

### Unit IX: Water-soluble Vitamins

06 marks

Structure, physiological and biochemical (coenzyme) role of : Thiamine, Riboflavin, Niacin, Pyridoxine, Coenzyme A, Biotin; Cyanocobalamin, Folic acid, Vitamin-C.

## **SYLLABUS CLASS XI**

### **Unit X: Fat-soluble Vitamins**

**06 marks**

Structure, physiological and biochemical/hormonal role of : Vitamin A (with emphasis on Visual cycle), Vitamin D (and its role in bone formation), Vitamin E (with emphasis on its role as biological antioxidant) and Vitamin K (with stress on its role in blood coagulation).

### **Unit XI: Nutrition : Macro and Micro**

**06 marks**

Introduction, calorific values of carbohydrates, proteins and lipids. Class A and Class B proteins/Essential amino acids. Essential fatty acids. Protein-/calorie malnutrition. Importance of minerals, iron, calcium, phosphorus, Iodine, Copper,  $\text{Na}^+$ ,  $\text{K}^+$ , Zinc. Brief introduction to anaemia, rickets and Goiter.

### **Unit XII: Instrumentation**

**05 marks**

Introduction to : pH metry, colorimetry, centrifugation, electrophoresis, chromatography (adsorption, Ion-exchange, gel-filtration).

**PRACTICAL**

**Marks: 30**

**Time: 3 hrs.**

1. Preparation of Molar and Normal solutions.
2. Buffers, Henderson-Hasselbalch equation, pH, pka.
3. Sterilization/Autoclaving
4. Colour reactions of carbohydrates: Molisch, Iodine, Benedict's, Barfoed's, Salivanoff's and inversion tests.
5. Microscopy, principle use, gram staining.
6. Colour reactions of proteins : Ninhydrin, Biuret, Xanthoproteic and Sulphur Tests.
7. Precipitation of proteins with acids ( $H_2SO_4$ , HCl,  $CH_3COOH$ , Trichloro acetate or perchloric acid), alcohols, Salting out, Heat denaturation.
8. Qualitative test for cholesterol.
9. Salivary Amylase : Enzymatic hydrolysis of soluble starch to achro-dextrin ( $I_2$ -based reaction).
10. Thin-layer chromatography : separation of pigments using silica gel G (on glass slides using stoppered bottles).

**Book Prescribed:**

A Textbook of Biochemistry for Class XI by Diwarka Sharma and Dr. Rafat Aeyesha Published by BOSE in Collaboration with Rahul enterprises, Jammu.

**Code : 246**

## **GEOLOGY**

Theory	=	70 Marks
Practicals	=	30 Marks
Time	=	3 hours

### **Unit-I : Introduction**

**12 Marks**

- (A) Definition of geology and its various branches viz; physical geology, mineralogy, petrology, palaeontology, stratigraphy, structural geology, geomorphology, economic geology, engineering geology and geohydrology.
- (B) Physical Geology
- (a) Weathering - Definition, types of weathering viz; mechanical, chemical and biological weathering.
- (b) Soil formation through weathering

### **Unit-II : Geohydrology**

**14 Marks**

- (A) (i) Definition of underground water, Juvenile water and connate water.
- (ii) Concept of porosity and permeability.
- (iii) Description of various zones of underground water, viz; zone of aeration, water table and zone of saturation.
- (iv) Geological work of underground water.

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- (B) (i) Definition of Aquifer
- (ii) Types of Aquifers
- (C) Spring– Definition, Types of springs

### Unit-III : Geomorphology

9 Marks

- (A) River
  - (I) Definition of River, stages of river.
  - (ii) Geological features viz; V-shaped valley, waterfall, River terraces, Meanders, Oxbow lake and Delta
- (B) Glacier
  - (I) Definition and types of Glaciers
  - (ii) Geological features viz; Cirque, U-Shaped Valley, moraines, Roches-Montonees and Fiords.
- (C) Lake
  - (I) Definition and types of lakes
  - (ii) Lake deposits

### Unit IV: Mineralogy

14 Marks

- (A) (I) Definition of mineral

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- (ii) Study of the following physical properties of mineral viz form, colour, cleavage, fracture, hardness, Specific gravity, lustre and streak.
  - (iii) Moh's scale of hardness
  - (iv) Physical properties of the following minerals:– Talc, Gypsum, Calcite, Fluorite, Apatite, Orthoclase, Quartz, Topaz, Corundum and Diamond
- (B) Ores
- (i) Definition of Ore
  - (ii) Physical properties of the following Ores:– Chalcopyrite, Bauxite, Hematite and Galena.
- (C) Methods of determining specific gravity of a mineral with Walker's Steelyard balance and Jolly's Spring balance.

### Unit V: Petrology

9 Marks

- (A)
- (i) Definition of a Rock
  - (ii) Three main types of Rocks.
  - (iii) Basic knowledge of texture and structure of rock as seen Megascopically.
- (B) Description of the following rock types :–
- (i) Granite, Diorite, Gabbro and Basalt.
  - (ii) Shale, Limestone, Sandstones Conglomerate and Breccia.
  - (iii) Marble, Schist, Gneiss and Slate.

**Unit VI: Palaeontology, Stratigraphy, Structural Geology and Engineering Geology** **12 Marks**

- (A) Geological Time Scale.
- (B)
  - (i) Basic knowledge of Dip and Strike.
  - (ii) Construction and working of Brunton Compass and its uses.
  - (iii) Definition of fold and fault.
  - (iv) Description of various parts of fold and fault.
  - (v) Description with Sketches of the following structures:—Anticline, Syncline, Normal Fault and Reverse fault
- (C)
  - (i) Definition of a fossil.
  - (ii) Preservation and uses of fossil.
- (D) Definition: Dam, Tunnel and Bridges.

**Books Suggested:—**

1. A textbook of Geology by P.K. Mukherjee
2. A textbook of palaeontology by S.K. Chadha
3. Engineering Geology by K.M. Banger
4. Ruttleys Elements of Mineralogy by H.H. Read.

**PRACTICALS**

**Marks: 30**

**Time: 3 hours**

1. Megascopic description and identification of the following minerals:–  
Talc, Gypsum, Calcite, Fluorite, Apatite, Orthoclase, Quartz, Topaz, Corundum, Diamond, Chalcopyrite, Bauxite and Hematite.
2. Megascopic Description of the following rock types:–
  - (I) Igneous : Granite, Diorite, Gabbro and Basalt
  - (ii) Sedimentary: Shale, Sandstone, Conglomerate, Breccias and Limestone.
  - (iii) Metamorphic: Gneiss, Schist, Slate and Marble
3. Determination of specific gravity of a mineral specimen by Walker's steel yard balance/Jolly's Spring balance.
4. Sketches and description of the following structural features.  
Anticline, Syncline, normal fault and Reverse Fault
5. Field work and Viva Voce  
The fieldwork should include collection of mineral/rock specimens and study/identification of different geomorphological features.

**Code : 239**

## **BUSINESS STUDIES**

**Maximum Marks: 100**

M. Marks: 100  
Theory: 90 Marks  
Practical: 10 Marks

Time: 3 hours

### **Part A: Foundations of Business**

#### **Chapter 1: Nature and Purpose of Business**

**8 Marks**

- Concept and characteristics of business
- Business, profession and employment - distinctive features
- Objectives of business - economic and social, role of profit in business
- Classification of business activities: Industry and Commerce
- Industry - types: primary, secondary, tertiary
- Commerce: Trade and Auxiliaries
- Business risks - nature and causes,

#### **Chapter 2: Forms of Business Organisations**

**12 Marks**

- Sole Proprietorship; Joint Family Business-meaning, features, merits and limitations;
- Partnership- meaning, types, registration, merits, limitations, types of partners;
- Cooperative Societies-types, merits and limitations
- Company: Private Ltd., Public Ltd. - merits, limitations;
- Choice of form of business organizations
- Starting a business - Basic factors.

**Chapter 3: Private, Public & Global Enterprises**

**10 Marks**

- Private Sector and Public Sector
- Forms of organising public sector enterprises
- Departmental Undertaking
- Statutory Corporation
- Government Company
- Changing role of public sector
- Global Enterprises : meaning and features
- Joint ventures- meaning, benefits.

**Chapter 4: Business Services**

**8 Marks**

- Nature and types of Business services - Banking, Insurance, Transportation, Ware housing, Communication.
- Banking - Types of Banks, Functions of Commercial banks, E- banking
- Insurance - principles, types: life, fire and marine
- Communication and Transportation
- Warehousing: types and functions.

**Chapter 5: Emerging Modes of Business**

**6 Marks**

- E-Business - Meaning, scope and benefits, Resources required for successful e-business implementation, On-line transactions, payment mechanism, security and safety of business transactions;
- Outsourcing- concept, need and scope

**Chapter 6: Social Responsibility of Business and Business Ethics**

**6 Marks**

- Concept of social responsibility.

## **SYLLABUS CLASS XI**

- Case for social responsibility;- Arguments for and against CSR
- Responsibility towards owners, investors, employees, consumers, government and community
- Environmental protection and business
- Business ethics: concept and elements.

### **Part B: Organisation, Finance and Trade**

#### **Chapter 7: Formation of a Company**

**7 Marks**

- Stages in the formation of a company
- Promotion
- Incorporation
- Capital Subscription
- Commencement of business

#### **Chapter 8: Sources of Business Finance**

**10 Marks**

- Nature and significance of business finance
- Classification of sources - Period, ownership basis
- Sources of raising Finance:
  - Equity and Preference shares
  - Debentures and Bonds
  - Loan from Financial Institutions

## SYLLABUS CLASS XI

- Retained Profits
- Global Depository Receipt, American Depository Receipt
- Loans from commercial Banks
- Public deposits
- Trade Credit

### Chapter 9: Small Business

6 Marks

- Concept of small business, Types.
- Role of small business in rural India;
- Problems of small business in India.
- Government Assistance, Incentives Schemes for Industries in rural, backward and hilly areas.

### Chapter 10: Internal Trade

10 Marks

- Meaning and types of internal trade: wholesale and retail.
- Services of a wholesaler and a retailer
- Types of Retail Trade:
  - Itinerant retailers and fixed shops.
  - Departmental store, super market, malls, chain store, mail order business, consumer's cooperative store.
  - Automatic Vending Machine
- Role of Chamber of Commerce and Industry in promotion of internal trade.

### Chapter 11: International Business

7 Marks

- Nature, Importance and complexities involved in International Business;

## SYLLABUS CLASS XI

- Understanding Export and Import procedures and documentation;
- Government support assistance, Incentives;
- Export processing zone special economic zones;
- International trade institutions - WTO, World Bank, IMF, UNCTAD.

### Project Work

10 Marks

### Suggestive/Illustrative Projects

#### Any one of the following:-

- (i) Find out from local sample business unit (s) the various objectives they pursue.
- (ii) Problems of setting up and running business units.
- (iii) Enquiry into the ethics of running business through questionnaires.
- (iv) Survey of quality of bank services in the local branch office.
- (v) Study of postal and courier mail services.
- (vi) Availability and use of agency services, advertising, packaging, investments in savings schemes, etc.
- (vii) Survey of the popularity of credit cards issued by different banks.
- (viii) Study the profile of a sole trader/partnership commenting on the nature and working of business.
- (ix) Study of a Joint family business.
- (x) Study of the working of any cooperative society.
- (xi) Study of a small business unit regarding source of finance.
- (xii) Study of nature of small traders (like hawkers and peddlers in a local locality) with reference to types of goods, capital investment, turnover.
- (xiii) Study of weekly bazaar in a locality.
- (xiv) Study of franchise retail store.

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- (xv) Study of export/import procedure of any article.
- (xvi) Problems of women entrepreneurs in business.
- (xvii) Survey of waste/garbage disposal by a hospitals/Private Nursing Homes
- (xviii) Study of pavement trade.
- (xix) Prepare a scrapbook and collect articles on the changing role of public sector and any other topics related to the syllabus.

Marks may be suitably distributed over the different parts of the Project Report-

- 1. Objectives
- 2. Methodology
- 3. Conclusions - findings and suggestions

### Suggested Textbook :

- 1. Business Studies, published by NCERT, New Delhi

**Code : 241**

## **ACCOUNTANCY**

**Theory: 80 Marks**

**M. Marks :- 100**

**Practical: 20 Marks**

### **Financial Accounting - I**

#### **Unit 1: Introduction to Accounting**

**06 Marks**

- (i) Book keeping Meaning, Accounting meaning, objectives. Difference between Book-keeping and Accounting, Accounting as source of information, internal and external users of Accounting information and their needs.
- (ii) Qualitative characteristics of Accounting information-reliability, relevance, Understandability and comparability.
- (iii) Basic accounting terms: business transaction, account, capital, drawings, Liability (Non-current and current); Asset (Non-current; tangible, intangible assets, current assets), receipts (capital and revenue), expenditure (capital, revenue and deferred), expense, income, profits, gains and losses, purchases, sales, stock, trade receivables (debtors and bills receivable), trade payable (creditors and bills payable), goods, cost, vouchers, discount - trade and cash, bad debts, Vouchers (cash and non cash), source documents Invoices, cash memo, pay in slip, cheque.

#### **Unit 2: Theory Base of Accounting**

**06 Marks**

- (i) Accounting Principles-concept
- (ii) Accounting principles: Accounting Entity, Money measurement, Going Concern, Accounting Period, Costs Concept, Dual Aspect, Revenue Recognition (Realisation), Matching concept, Accrual, Full Disclosure, Consistency, Conservatism, Materiality
- (iii) Accounting Standards and IFRS (International Financial Reporting Standards): Concept

## SYLLABUS CLASS XI

- (iv) Bases of Accounting—Cash Basis, Accrual Basis

### Unit 3: **Recording of Business Transactions** **10 Marks**

- (i) Accounting Equation Approach—Meaning and Analysis of transactions using Accounting Equation.
- (ii) Rules of Debit and Credit—traditional and modern approach.
- (iii) Recording of Transactions: Books of original entry – Journal, Special Purpose Books: Cash Book: Simple Cash Book, Cash Book with Discount Column, Cash Book with Bank and Discount Columns, Petty Cash Book. Other books: purchases book, sales book, purchases returns book, sales returns book and journal proper.
- (iv) Ledger—meaning, utility, format; posting from Journal and Subsidiary books; Balancing of Accounts.
- (v) Bank reconciliation statement- calculating bank balance at accounting date: need and preparation.

### Unit 4: **Trial Balance and Rectification of Errors** **5 Marks**

- (i) Trial balance: Meaning, objectives and preparation, (Scope: Trial Balance with balance method).
- (ii) Error: Types of Errors: Errors of omission, commission, principles and compensating errors affecting Trial Balance; errors not affecting Trial Balance.
- (iii) Detection and Rectification of Errors (One Sided and Two Sided); use of Suspense Account.

### Unit 5: **Depreciation, Provisions and Reserves** **08 Marks**

- (i) Depreciation: Meaning and need for charging depreciation, factors affecting depreciation, methods of depreciation—Straight Line method, Written Down Value method (excluding change in method), Method of recording depreciation—charging to asset account, creating provision for depreciation/accumulated depreciation account; Treatment of disposal of asset.
- (ii) Provisions and Reserves: meaning, importance, difference between Provisions and Reserves, types of Reserves: Revenue Reserve, Capital Reserve, General Reserve, Specific Reserve and secret Reserves.

## SYLLABUS CLASS XI

### Unit 6: Accounting for Bills of Exchange

05 Marks

- (i) Bills of exchange and Promissory Note: definition, features, parties, specimen and distinction.
- (ii) Important terms: term of bill, due date, days of grace, date of maturity, discounting of bill, endorsement of bill, bill sent for collection, dishonour of bill, noting of bill, retirement and renewal of a bill.
- (iii) Accounting treatment of bill transactions.

### Project Work (Any One)(P<sub>1</sub>)

10 Marks

- (i) Collection of source documents, preparation of vouchers and presentation of vouchers and presentation of source document of trading and banking concerns.
- (ii) Preparation of bank reconciliation statements with the given cash book and pass book with 20-25 transactions.
- (iii) Collection and presentations of Hundi, Passbook, Cheque book and promissory note, Bills of exchange, Debit and Credit note and other negotiable instruments.

## Financial Accounting - II

### Unit 7: Financial Statements of Sole Proprietorship from Complete and Incomplete Records

22 Marks

- (i) Financial Statements: Meaning and uses
- (ii) Capital expenditure and deferred revenue expenditure, Trading and Profit and loss account-Gross Profit, operating profit and net profit, Balance Sheet : need, grouping, marshalling of assets and liabilities. Preparation of Trading and Profit and Loss Account and Balance Sheet of sole proprietorship.

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- (iii) Adjustments of preparation of financial statements: with respect to closing stock, outstanding expenses, prepaid expenses, accrued income, income received in advance, depreciation, bad debts, provision for doubtful debts, provision for discount on debtors, manager's commission, abnormal loss, goods taken for personal use and goods distributed as free samples.
- (iv) Incomplete records: Meaning, uses and limitations. Ascertainment of profit/loss by statement of affairs method.

### Unit 8: Financial Statements of Not for Profit Organisations 10 Marks

- (i) Not-for-profit organizations: concept.
- (ii) Receipts and Payment account: Features.
- (iii) Income and Expenditure account: features. Preparation of Income and Expenditure account and Balance Sheet from the given Receipts and Payments account with additional information.

**Note for teachers:** (i) Adjustments in a question should not exceed 3 or 4 in number and restricted to subscriptions, consumption of consumables, and sale of assets/old material. (ii) Entrance/ admission fees and general donations are to be treated as revenue receipts. (iii) Trading Account of incidental activities is not to be prepared.

### Unit 9: Computers in Accounting 8 Marks

- (i) introduction to Computer and Accounting Information System (AIS), Application of computers in accounting:
- (ii) Automation of accounting process, designing accounting reports, MIS reporting, data exchange with other information systems, Comparison of accounting processes in manual and computerized accounting, Sourcing of accounting system: readymade and customized and tailor-made accounting system.
- (iii) Accounting and Database Management System.
- (iv) Stages in automation (a) Accounting Process in a computerised environment (b) Sourcing of accounting Software (Kinds of software: readymade software; customised software and tailor-made software; Generation of reports using TALLY and BUSY-Trial balance, profit and Loss account and Balance Sheet.

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software; customised software and tailormade software; Generation of reports using TALLY and BUSY Trial balance, Profit and Loss account and Balance Sheet.)

### Project Work (Any One) (P<sub>2</sub>)

10 Marks

1. Comprehensive project starting with journal entries regarding any sole proprietorship business, posting them to the ledger and preparation of Trial balance. The students will then prepare Trading and Profit and Loss Account on the basis of the prepared trail balance. Expenses, incomes and profit (loss) are to be depicted using pie chart/bar diagram.
2. Comprehensive project of Not for profit organisations starting with preparation of Receipts and payments account and Income and expenditure account.
3. The above projects can be presented by using software packages Tally of Busy.

The above mentioned projects should be presented in a project file which should be made available for evaluation.

#### Books Suggested

1. Accountancy Published by NCERT

**Code : 242**

**ENTREPRENEURSHIP**

**Theory: 70 Marks  
Practical: 30 Marks**

**Time: 3 hrs  
MM: 100**

**UNIT-I**

**9 Marks**

**ENTREPRENEURSHIP**

- I. Concept of entrepreneurship: Meaning, Definition and characteristics.
- II. Functions and need of entrepreneurship.
- III. Role of entrepreneurship in Economic development.
- IV. Barriers to entrepreneurship: Economic and technological.

**UNIT-II**

**9 Marks**

**ENTREPRENEUR**

- I. Meaning, Definition and characteristics.
- II. Types of entrepreneur.
- III. Role & problems of women entrepreneur.
- IV. Role of entrepreneur in generating national wealth and creation of employment.

**UNIT-III**

**7 Marks**

**ENTREPRENEURIAL VALUES & MOTIVATION**

- I. Entrepreneurship motivation-Meaning & Concept.
- II. Six C's for entrepreneurial motivation: Change, Challenge, Creativity, Curiosity, Control & Cash.
- III. Help & support to entrepreneur by state & central bodies.

**UNIT-IV**

**8 Marks**

**ENTREPRENEURIAL SKILL DEVELOPMENT PROGRAMME.**

- I. Entrepreneur Skill-Meaning & Concept.
- II. Importance of Skill development.
- III. Techniques of skill development.
- IV. Qualities of a successful entrepreneur.

**UNIT-V**

**7 Marks**

**INTRODUCTION TO MARKET DYNAMICS**

- I. Meaning of market dynamics.
- II. Causes of market dynamics.
- III. Competitive analysis of market.

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### Unit VI SMALL ENTERPRISES

8 Marks

- I. Meaning, Definition and characteristics of small enterprise.
- II. Objectives of micro enterprises.
- III. Role of Micro enterprises in economic development.

### Unit VII PROJECT SELECTION & FORMULATION

9 Marks

- I. Meaning of project.
- II. Project identification & steps in process of project selection.
- III. Meaning & significance of project report.

### Unit VIII PROJECT APPRAISAL

7 Marks

- I. Meaning of Project appraisal
- II. Methods of Project appraisal:  
(a) Economic (b) Financial (c) Technical

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### Unit IX: FINANCING OF ENTERPRISE

9 Marks

- I. Meaning & need of financial planning.
- II. Sources of Finance: Long term & Short term.
- III. Capital Structure: Meaning and Factors determining capital structure.

### Unit X: OWNERSHIP STRUCTURE

7 Marks

- I. Proprietorship: Meaning, Features & Importance.
- II. Partnership: Meaning, Features & Importance.
- III. Company: Meaning, Features & Importance.

### PROJECT:

Marks: 20

#### Introduction:

The Main objective of the course in Entrepreneurship is to generate in the students initiative, self reliance and enthusiasm so as to empower them to become entrepreneurs both in spirit and performance.

A number of skills such as observation, evaluation, communication, resource mobilization and management, risk assessment ,team building etc. are also to be developed in the students. Leadership qualities, sensitivity to business ethics and adherence to a positive value system are the core issues that the course highlights while presenting different concepts related to entrepreneurship.

Such a course should necessarily have a strong experiential component in the form of practical work. The objectives of the practical work are:

1. To introduce the students to the world of business by developing in them the core skills and competencies required for an entrepreneur.

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2. To develop in the students qualities such as leadership, self-confidence, initiative, facing uncertainties, commitment, creativity, people and team building, integrity and reliability.
3. To enable the students to acquire the skills and knowledge needed for conducting surveys, collecting, recording and interpreting data and preparing simple estimates of demand for products and services.
4. To guide the students to prepare a Project Report.
5. To equip the students with knowledge and skills needed to plan and manage an enterprise through case studies conducted and recorded by the students in different fields such as resource assessment, market dynamics, finance management, cost determination, calculation of profit and loss etc.
6. To instill in the students important values and entrepreneurial discipline.

### FORMAT OF PROJECT

**Total marks: 30 Marks**

- |    |                                     |                 |
|----|-------------------------------------|-----------------|
| 1. | <b>Project Report/Survey Report</b> | <b>10 marks</b> |
| 2. | <b>Viva-Voce on PW/SR</b>           | <b>5 marks</b>  |
| 3. | <b>Case Study</b>                   | <b>10 marks</b> |
| 4. | <b>Problem Solving</b>              | <b>5 marks</b>  |

1. **Project Report/Market Survey Report**

- a) **Project Report:**

Preparation of a Project Report for an enterprise involving products/services. Students may be provided adequate guidance to choose a project based on their interests and availability of information and authentic inputs in the locality. The specimen proforma of project report given in the textbook may

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be used for preparing the report. However, mechanical preparation of the report by filling in the information in the proforma should be discouraged.

Further, as the students will be required to appear for a Viva-voce on the basis of their projects, sufficient care should be taken by the students to prepare the report after studying the various aspects involved thoroughly. In a nutshell, the project report should lead to viable enterprise.

### b) Market Survey Report

Market research is the process and technique of finding out who your potential customers are and what they want. The survey may be on products and services already available in the market or students may also conduct surveys for new products and services. The report of the survey should be organised under the following broad headings:

1. Objects.
2. Methods and tools (interviews, questionnaires etc.) to be used to collect information.
3. Records of data and information.
4. Analysis of data and information.
5. Interpretation and conclusion.

For example, a survey may be conducted to find out the choice of households in toiletry soap, tooth paste etc. The data may be analysed to establish a pattern that may be useful to an entrepreneur.

### Guidelines for assessment of Project Report/ Survey Report

**For purpose of assessment the same pattern shall be adopted for Term II also.**

1. Presentation: Format, Clarity, Use of graphs, tables and other visuals, organisation, methodical recording of data and information and general neatness of execution.
2. Originality and Creativity

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3. Authenticity of information and correctness of calculations and general feasibility of the project/ sustainability of conclusion drawn in the survey.
4. Viva Voce on the Project /Market Survey Report

The questions should establish that the report is the original work of the student and that the student has a reasonably clear understanding of the work carried out by him/her. Entrepreneurial qualities such as leadership, self-belief, creativity, originality, initiative etc. may also be assessed by asking a variety of questions related to the report.

### 2. Viva-voce

### 3. Case Study

**A case study is a focused research on an organisation, enterprise, practice, behaviour or person** undertaken to highlight an aspect that the study attempts to examine. For instance, a case study may be conducted on the pollution control methods being employed by an industry. Or a successful industrialist may be chosen as a subject of a case study to analyze and understand the strategies that the industrialist adopted :to achieve success. Ideally, a case study should be conducted on subjects with the objectives of bringing to the fore beliefs, practices, strategies, values etc. that have made them what they are. Such studies help us to understand the way in which great minds think and operate. We may also conduct case studies on failures; why a company collapsed, how a service lost its market etc. From both the types of case study, we learn lessons; how to do something or how not to do something. They also provide valuable insight into the processes involved in an enterprise. A few topics are suggested for carrying out case studies:

- i) Drawing a profile of a successful entrepreneur. ii) Studying a public sector undertaking and highlighting its success/failure, by analyzing the factors responsible.
- iii) Studying a small scale unit in the locality to bring out the procedures and processes adopted by the unit to become a feasible business venture.

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- iv) A study of competition in business by choosing two or more rivals in the market and analyzing their strengths and weaknesses.
- v) Take the school itself for a case study and analyze any two aspects of the school plant for chalking out a plan of action: infrastructure, academics, co-curricular activities etc.
- vi) A case study on a thriving fast food shop/restaurant in your locality. What makes it so popular?
- vii) A case study on the ways in which a business unit has mobilised its financial resources.
- viii) A case study on the enterprise management techniques adopted by a business house.
- ix) A case study on the marketing strategies of a successful consumer durable company.
- x) A case study on the financial management of a Public Limited Company.
- xi) A case study on any Specialized Institution that supports and guides the establishment of a small scale unit.
- xii) Studying the balance sheets of two big private companies to assess their trade and credit worthiness.
- xiii) Studying the inventory management of a large manufacturing industry to ascertain the processes involved for optimizing cost.
- xiv) Carrying out a case study on an established industrial house/company to find out the value system of the company and how it fulfils its social commitment/ obligations.
- xv) Carrying out a case study on an established industry to ascertain the processes followed to reduce/prevent pollution.
- xvi) Study on environment friendly companies and their contribution to preservation.

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### Assessment of Case Studies

- i) Presentation: Format, accuracy, clarity, authenticity and general neatness
- ii) Analysis and Conclusions

### 4. Problem Solving

In this session, the students will be required to solve a problem in the form of a written test. The examiner may choose any problem related to the units in class XI Text Book and set it for the class. The problem may be in the following areas:

- a. How to scan the environment to establish the feasibility of a project.
- b. Given certain figures showing the consumption pattern of a product, drawing conclusions that have a bearing on similar products.
- c. Carrying out market assessment for a given product/service to ascertain the feasibility factor.
- d. Assessment of Working Capital.
- e. Calculation of total cost of production.
- f. Calculation of break-even point.
- g. Determining location of a manufacturing unit.
- h. Problems in inventory control (calculation of the Economic Order Quantity and carrying out ABC analysis).
- i. Applying Pricing methods to determine the price of a product or service.
- j. Applying promotion mix to plan a sales campaign for a product or service.
- k. Working out a simple budget for a given task or job.

### Assessment of Answers

The examiner may prepare five problems which are solved by him/her before they are presented to the students. The student may choose anyone of the problems and solve it, showing the different steps/different reasons involved in the solution. If the problem does

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not involve actual calculations, it may not have anyone correct answer. So weightage should be given not only to the final answer but to the entire process of problem solving that the student has followed.

Originality and innovative spirit should be rewarded. The students should not be penalized for spelling errors, grammatical mistakes etc. as long as the answer is coherent. Where definite formulas are involved, accuracy should be given due weightage.

### **Textbook Suggested:**

A textbook of Entrepreneurship for class 11th published by CBSE, New Delhi

## TYPE WRITING & SHORTHAND

**M. Marks: 100**

**Practical**

**Internal: 50 Marks**

**External: 50 Marks**

**Time: 3 hrs**

**25 Marks**

### **A. Typewriting/On Machine/Computer Key Board.**

There shall be one practical paper of 25 Marks. The paper shall contain the following exercises.

- |      |                                  |         |
|------|----------------------------------|---------|
| i.   | Passage of 350-400 words (prose) | 7 Marks |
| ii.  | A business letter                | 6 Marks |
| iii. | A tabular statement              | 7 Marks |
| iv.  | Viva-voce.                       | 5 Marks |

In viva-voce knowledge of

- Key Board of Typing machine/Computer
- Function of different parts of machine (typewriter/Computer)
- Type setting and
- Maintenance of typewriter shall be tested

The length of the above material will be in accordance with the time allowed. Accuracy and arrangement shall be given paramount importance. The speed expected of the examinees shall be 25 words/minute. Actual time taken by the examinees in typing out the passage- shall be noted on the answer sheet.

### **B. Shorthand**

**25 Marks**

There shall be one practical paper of 25 marks, the candidate shall be required to taken down dictation in shorthand at speed of 50 words/ minute. The material for shorthand may be a passage of 600-800 words.

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After taking down dictation students shall be required to transcribe the same in their own handwriting in longhand.

The outline of the shorthand shall have to be attached by the candidate with the answer sheet. Distribution of marks shall be as under :

- |                                |          |
|--------------------------------|----------|
| (a) Outline                    | 6 Marks  |
| (b) Transcription in Long hand | 14 Marks |
| (c) Viva-voce                  | 5 Marks  |

In viva-voce knowledge of consonants and vowels, Grammon logues, Contractions, abbreviations, suffixes and prefixes, etc shall be tested.

## PRACTICAL

**Time: 3 hrs**

### **C. Typewriting/On Machine/Computer Key Board. 25 Marks**

There shall be one practical paper of 25 marks. The paper shall contain the following exercise

- |                              |         |
|------------------------------|---------|
| (a) Passage of 350-400 words | 7 Marks |
| (b) A business letter        | 7 Marks |
| (c) A tabular statement      | 6 Marks |
| (d) Vice-voce                | 5 Marks |

### **D. Shorthand 25 Marks**

There shall be one practical paper of 25 marks. The candidate shall be required to take down dictation in shorthand at speed 50 words/minute. The material for shorthand may be a passage of 600-800 words.

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After taking down dictation students shall be required to transcribe the same in their own hand writing in long hand.

The out line of the short hand shall have to be attached by the candidate with the answer sheet Distribution of marks of different exercise shall be as under:

- |     |                            |          |
|-----|----------------------------|----------|
| (a) | Outline                    | 6 Marks  |
| (b) | Transcription in long hand | 14 Marks |
| (c) | Viva-voce                  | 5 Marks  |

### Books Suggested:

Shorthand by pitman.

## BUSINESS MATHEMATICS

Marks: 100

Time: 3 hours

### Unit 1<sup>st</sup>: Sets, Relations and Functions

13 Marks

Sets and their representation, various types of sets, complement of a set. Algebra of sets (Union, intersection and difference of sets). Demorgan's laws, Cartesian product of sets.

Relations: Various types of relations, Equivalence relation simple examples

Definition of a function and its various types (Into, onto, one-one, many-one, polynomial function, rational, modulus, constant, signum, greatest integer function, composite function).

### Unit 2<sup>nd</sup>: Sequences and Series

13 Marks

Geometric progression, general term sum to  $n$  terms, and sum to infinity of a geometric series. Geometric and arithmetic means, Evaluation of  $\sum n$ ,  $\sum n^2$ ,  $\sum n^3$

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### Unit 3<sup>rd</sup>: Trigonometry

**13 Marks**

Trigonometric ratios of allied angles (without proof). sum, difference formulae and their applications . solution of trigonometric equations .

### Unit 4<sup>th</sup> : Permutations and combinations

**11 Marks**

Factorial notation, fundamental principle of counting. Meaning of  $P(n,r)$  and  $C(n,r)$  and their relations with simple applications.

### Unit 5<sup>th</sup>: Binomial theorem

**10 Marks**

Binomial theorem for any index. General term, middle term/s of a Binomial Expansion. Applications of binomial expansion.

### Unit 6<sup>th</sup>: Statistics

**16 Marks**

Measures of dispersion, Mean Deviation from mean and median.  
Standard deviation and variance of a grouped and ungrouped data.  
Quartile deviation.

### Unit 7<sup>th</sup>: Probability

**14 Marks**

Random experiment and sample space (set representation). Events and their occurrence. various types of events. Mutually exclusive and Exhaustive events .  
Axiomatic probability with applications.

### Unit 8<sup>th</sup>: Linear Inequations

**10 Marks**

Algebraic solution of an inequation in one variable and the representation on a number line. Graphical solution of linear inequations in two variables.

#### Books Suggested:

1. A Textbook of Mathematics for Class XI published by NCERT, New Delhi

# **TRAVEL AND TOURISM MANAGEMENT (Basic)**

**Maximum Marks: 100**

**Time: 3 hours**

## **Unit I**

**10 Marks**

Meaning, History and Importance of Travel and Tourism, Meaning of Tourist, Traveller, Transient & Excursionist, Types and Forms of Tourism, Concept of Mass Tourism/Eco-tourism and Sustainable tourism.

## **Unit II**

**10 Marks**

Meaning, Features and Elements of Tourism Product, Difference between Tourism and Consumer Product. Tourism Products of J&K - Fairs & Festivals (Kheer Bhawani, Charar-e- Sharief, Sindhu Darshan, Jhari mela, Eid in J&K, Navaratra in Jammu, Losar in Ladakh region).

## **Unit III**

**10 Marks**

Tourism destinations:- Srinagar- Pahalgam & Gulmarg, Jammu-Patnitop & Mansar, Ladakh- Leh & Zaskar, Shrines: Hazartbal, Hemis, Amarnath and Vaishno Devi.

## **Unit IV**

**10 Marks**

Flora and Fauna of J&K - Parks/Wildlife Sanctuaries, Physiographic Divisions and Climate, Handicrafts of J&K, Craft Mela-Jammu and Kashmir Haat, Cuisine-Wazwan.

## **Unit V**

**10 Marks**

Role of Ministry of Tourism (Govt. of India), ITDC, J K TDC, Hill Development Council of Ladakh in promoting Tourism.

## **HOTEL MANAGEMENT**

**Unit VI:**

**10 Marks**

Meaning, Concept, Origin and Development of Hospitality Industry, Current Development and future scope. Importance of Customer Care in Hospitality

**Unit VII:**

**10 Marks**

Accommodation: Meaning & Scope, Types of Accommodation. Types of Hotels on the basis of their Size, Location, Comfort, Price and Ownership, Difference between Hotels, Motels and Resorts.

**Unit VIII:**

**10 Marks**

The important Functional Departments of the Hotel, their functions and Organizational Structure.

**Unit IX:**

**10 Marks**

Registration and Gradation of Hotels, Understanding Hotel functioning and Preparing report by visiting Star category Hotels- like Grand Palace, Hotel Broadway, Hotel Asia, Hotel K.C. Residency etc.

**Unit X:**

**10 Marks**

Meaning and Definition of Hospitality Distribution Channels, Functions and Levels of Distribution Channels, Basics of Major Hospitality Distribution Channels- Travel Agents, Tour operators, Consortia and Reservation System.

**References:**

1. Travel, Tourism & Hotel Management - S. Chand and Co. Ltd. New Delhi in collaboration with J&K State Bosc

# **PHYSICAL EDUCATION**

**Max. Marks: 100**

**THEORY = 70, Practical = 30**

## **UNIT- I**

**Time :3 Hrs**

### **1. CONCEPT OF PHYSICAL EDUCATION**

**7 Marks**

- 1.1) Meaning and definition of Physical Education.
- 1.2) Aims and objectives of Physical Education.
- 1.3) Need and importance of Physical Education.

## **UNIT-II**

### **2. PHYSIOLOGICAL ASPECTS OF PHYSICAL EDUCATION**

**7 Marks**

Effects of exercise on:

- a. Muscular system.
- b. Circulatory system.
- c. Respiratory system.
- d. Digestive system.

## **Unit-III**

### **3. PSYCHOLOGICAL ASPECTS OF PHYSICAL EDUCATION**

**7 Marks**

- 3.1) Definition of psychology and sports psychology.
- 3.2) Achievement and motivation in sports.

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### Unit IV

#### 4. CAREER ASPECT IN PHYSICAL EDUCATION 7 Marks

- 1.1) Career options in physical education.
- 1.2) Avenues for career preparations.

### UNIT V

#### 5. HEALTH AND FAMILY EDUCATION 7 Marks

- 5.1) Concept and importance of health Education.
- 5.2) Effect of alcohol, tobacco and drugs and & abuse on individual, family, Community and sports person.

### UNIT VI

#### 6. CONCEPT OF MAJOR GAMES/SPORTS: 7 Marks

**KHO-KHO, BADMINTON, KABADDI, HANDBALL, ARCHERY, HOCKEY.**

- 1.1) History of games (Above Games)
- 1.2) Rules, measurement of the field. (Above Games)
- 1.3) Fundamental skills and Sports Terminology .

### UNIT VII

#### 7. NATIONAL GAMES 7 Marks

- 1.1 National events.
- 1.2 National awards.

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### UNIT-VIII

#### OLYMPIC GAMES

7 Marks

- 2.1) History of Olympic Games.
- 2.2) Olympic Village.
- 2.3) Olympic Rings and Torch

### UNIT- IX

#### 9. DIET AND ITS IMPORTANTANCE IN PHYSICAL DEVELOPMENT

7 Marks

- 1.1) Diet and physical fitness.
- 1.2) Obesity and its causes.
- 1.3) Balanced diet.

### UNIT-X

#### 10. COMMON SPORTS INJURIES & REHABILITATION

7 Marks

- 1.1) Muscle pull, sprain and strain.
- 1.2) Dislocation, Fracture.

#### Practical

Marks: 30

1. Camping and nature study 6 Marks
2. Track & field (Three events) 6 Marks
3. Project work. 3 Marks
4. Physical fitness test 6 Marks
5. Skill test of game/ sports  
(Any two games/sports) 6 Marks
6. Viva-voce 3 Marks

## HOME SCIENCE

(FULL STREAM)

### FAMILY HEALTH CARE & PREVENTION

Max. Marks: 100

Code : 236

Marks : 70 (Theory)

Practicals: 30 Marks

Time: 3 hours

#### Unit I : Good Health

12 Marks

- Definition of health - Dimensions of good health.
- External characteristics of good health.
- Height-weight norms for different age groups.
- Common health problems in India.
- Factors affecting health (Nutrition, Rest, Sleep, exercise, fatigue, posture, habits, substance abuse, clothes and footwear.
- Concept of Mental health.

#### Unit II : Diseases

12 Marks

- Water/Air borne disease and other common diseases.
- Causes, mode of spread, symptoms, prevention and control of the following: Typhoid, Cholera, bird flu, measles, mumps, plague, chicken pox, polio.

#### Unit III : Health Care Services.

11 Marks

- Role of Health Care Services at gross root level, state level and at the central level. ANP, ICDS, NNP, NRHM
- Primary Health Care Services and characteristics.

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- National Health policy - Aim/Objectives.

### Practicals

15 Marks

1. Look for sign of good/poor health within your family.
2. Checking their own height and weight to determine whether they conform to norms for Indian Conditions.
3. Talk by a general physician on the signs of good and poor health.
4. Interaction with a PHE expert person and visit for a water filtration plant on source of water purification.
5. Visit to Primary Health Centre (PHC) in your own locality and maintain a record of the facilities being provided.

## Family Health Care and Prevention

### Unit IV: Hygiene and Environment

12 Marks

- Personal Hygiene and its importance: - Personal cleanliness.
- Waste disposal methods - rural and urban.
- Using safe drinking water. Importance of potable water for good health, qualities of safe drinking water, household methods of making water safe for drinking.
- Human Environment interaction: Environmental issues and problems.

### Unit V: First Aid and Home Nursing

12 Marks

- How to handle simple emergencies in the home) Cuts, burns, scalds, electric shocks, choking of food, sprains, Insect and snake bite), food allergies, medicine.
- First Aid kit: its contents.
- The sick room: - Choice and preparation of sick room. How to make a bed.
- How to disinfect a room.
- The role of traditional and local system of medicine.

### Unit VI: Population Education

11 Marks

- Population Explosion: - Definition, meaning, causes, effect of over population and its control.

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- Population Education and its Aim.
- Importance of girl child, Govt. incentives to improve status of girl child (with ref. to state)

### Practical

15 Marks

- 1) Conduct a symposium on method of maintaining and preserving the environment.
- 2) Maintain the cleanliness and hygiene of the Home Science~laboratory.
- 3) Taking and recording body temperature, pulse rate, :respiration rate.
- 4) Preparation of First Aid Kit.
- 5) Make poster and charts, emphasizing the need for personal and environmental hygiene.
- 6) Prepare a list of Ten (10) traditional Home remedies being practiced at your Home.

Code : 237

## FOOD SCIENCE

Max. Marks: 100

Time: 3 hours

Marks :70

Practicals:30

### Unit I : Food and Nutrition

12 Marks

- Definition of food, food nutrients, nutrition, optimum nutrition and Malnutrition.
- Functions of food, specific functions of Nutrients, sources of Nutrients.
- Malnutrition - Indications of Malnutrition, Types of Malnutrition laying stress on P.E.M (Protein Energy Malnutrition)

### Unit II : Utilization of Food in the Body

12 Marks

- The digestive system & its functions.
- Digestion, absorption, transport and utilization of food in the body.
- Metabolism of Protein, Carbohydrates and Fats.
- Importance of water and fibre in our diet.

### Unit III : Food Preservation

11 Marks

- Importance of food preservation.
- Causes of food spoilage.
- Principles of food preservation.
- Methods of food preservation. (House hold and Commercial).

### Practicals :

15 Marks

- Draw and label the different parts of the digestive system.
- Observation of Children in a pediatric ward of a local hospital to note sign and symptoms of different conditions of malnutrition.
- Preparation of Fruit squashes, Jams, Murrabas, Pickles, Sun drying of fruit and vegetables.

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### Unit IV: Planning a Balanced Diet

14 Marks

- Definition of Kilocalorie, Calorie.
- Nutrition of infants, Toddlers, children, Adolescence and Adults.
- Nutrition for special condition: - pregnancy/lactation, invalids and convalescents.
- RDA (Recommended dietary allowances) for all the above mentioned categories.
- Meal planning: - Importance and factors affecting meal planning.

### Unit V: Food Selections & Preparation

14 Marks

- Selection and storage of Perishable, semi-perishable and non-perishable foods.
- Standards, weights and measures for foods.
- Reason for cooking food, methods of cooking food.
- Moist heat, dry heat and frying.
- Action of heat on various nutrients and changes in nutritional values, color.
- Methods of enhancing nutritional value - germination, fermentation, fortification and proper food combination.

### Unit VI: FOOD SANITATION

7 Marks

- Definition and meaning of Food hygiene.
- Factors affecting safety of food at home.
- Principles of food hygiene.
- Diseases transmitted through food, their signs, symptoms and prevention.
- Food Adulteration: - Definition and measuring.
- Common adulterants present in Cereals, pulses, milk and milk products, fats and oil,

## SYLLABUS CLASS XI

sugar jaggery, honey, spices and Condiments.

- Ill effects of some of the adulterants present in the foods, kesari dal, metanil yellow, argenone seeds.
- Safety against Food Adulteration: - Prevention of food Adulteration Act.
- Standard marks on Foods. FPO, ISI, AGMARK.
- Food Laws: - Their Importance and Aim.

### Practicals

15 Marks

- Practical experience in planning a days' meal for :-
  - Vegetarian
  - Non-Vegetarian
  - Different age groups.
  - Pregnancy and Lactation.
- Survey of local and regional dietary pattern.
- Market survey of cost and availability of food in general use. Weighing and measuring of foods.
- Practical experience in preparing meals for the family.
- Detection of Adulterants present in foods:- Cereals, pulses, Milk, Condiments.

## **MANAGEMENT OF RESOURCES**

Theory: Marks : 70

Practicals:30 Marks

### **Unit I : Family Resources**

**12 Marks**

- Meaning and definition of resources.
- Classification of Resources - Human and Material Resources.
- Characteristics of Resources.
- Factors affecting the use of resources.
- The Management Process - Planning, Organizing, Implementing, Controlling and Evaluation.
- Qualities of a Good Home maker.

### **Unit II : Housing**

**14 Marks**

- Housing - Factors affecting minimum need for satisfactory living.
- Factors affecting selection of house( Site, Soil, Physical Features, Sanitary Conditions, Practical Convenience)
- Selection of furniture, furnishing and household equipments.
- Principles in planning a house.
- Requirement & Arrangement of furniture in different rooms of the house.
- Interior Decoration - Principles of Art, Importance of color in the home, Use of plants and flowers as decoration.

### **Unit III : Disinfection and Pest Control**

**9 Marks**

- Common household pest and their control measures.
- Different types of pest control : Preventive and curative.
- Disinfectants: Classification and use.
- Cleanliness and sanitation - Cleaning of the house.
- Cleaning and polishing of Metals (Brass, Copper, Silver, steel and Aluminum).
- Cleaning of wooden surfaces, Glass, Wicker, Tiles and Marble surfaces.

### **Practicals**

**15 Marks**

- Make a diagrammatic representation showing arrangement of furniture in different rooms.  
a) Drawing room. b) Bed room c) Multi-Purpose room.
- Making Rangoli patterns for different occasions.
- Making different types of flower arrangements.
- Cleaning of metals.
- Cleaning of window panes.

## SYLLABUS CLASS XI

### Unit I : Resource Management.

11 Marks

- Meaning and types of values, goals and standards.
- The family cycle: Decision making in family living.
- Planning for the use of resources on short term & long term basis.
- Need to manage the resources and methods of Conservation of shared resources.

### Unit II : Time and Energy Management

12 Marks

- Time plan: Need and steps in preparing time plan.
- Importance of Rest and Leisure.
- Energy cost of different activities carried out in the home.
- Work Simplification - Meaning and Methods.
- Fatigue: Types, Ways of reducing fatigue.
- The relation of energy to the stages in the family life cycle.

### Unit III : Money Management

12 Marks

- Family Income: Money Income, Real Income (Direct, Indirect) and Psychic income.
- Family Budget: Importance, types, steps in preparing budget.
- Means of supplementing family income.
- Savings: Need and methods of Savings.
- Consumer Education: Need and importance. Brief history of development of Consumer Education.
- Consumer Protection Act - Its salient features.
- Consumer's: Rights and Duties.

15 Marks

### Practical

- 1) Preparing a Time plan for the mother and self.
- 2) Make a budget for the family.
- 3) Make a list of real Income available for their family.
- 4) Fill bank and post office saving account form.
- 5) Get practical experience in opening a savings account in the bank.
- 6) Survey of the locality to assess the awareness of the residents about their Consumer's Rights and Responsibilities.

पाठ्यक्रम  
कक्षा—ग्यारवीं  
विषय: हिन्दी  
जम्मू कश्मीर बोर्ड

पूर्णांक: 100

समय: 3 घंटे

(भाग क)

1. काव्य

अंक: 20

साखी—कबीरदास मानसर पाठ्य पुस्तक में संकलित  
सूरदास—बाललीला मानसर पाठ्य पुस्तक में संकलित  
बिहारीलाल—नीति के दोहे (केवल छः दोहे)  
देव—हंसी की चोट, सपना और दरबार

नोट: काव्यांशों की व्याख्या

कवि परिचय

पाठ्य पुस्तक के प्रश्नोत्तर

परीक्षापयोगी महत्वपूर्ण प्रश्नोत्तर

(भाग ख)

2. हिन्दी साहित्य का इतिहास

अंक: 20

1. वीरगाथा काल  
(परिस्थितियाँ, विशेषताएँ, युगीन कवि)
2. भक्तिकाल  
(भक्तिकाल का वर्गीकरण, परिस्थितियाँ, विशेषताएँ तथा युगीन कवि)
3. कहानी  
(अर्थ, परिभाषा, तत्त्व, प्रकार)

(भाग ग)

निबन्ध

अंक: 20

चरित्र-चरित्र : बालकृष्ण भट्ट  
सच्ची वीरता: सरदार पूर्ण सिंह  
मित्रता: आचार्य रामचन्द्र शुक्ल  
टार्च बेचने वाला: हरिशंकर परसाई

नोट: निबन्धों का सार

लेखक परिचय (संक्षेप में)  
पाठ्य पुस्तक के प्रश्नोत्तर  
परीक्षापयोगी महत्वपूर्ण प्रश्नोत्तर

(भाग घ)

कहानियाँ

अंक: 20

ईदगाह: मुशी प्रेमचन्द  
अभाव: विष्णु प्रभाकर  
उरकी माँ: पांडेय बेचन शर्मा 'उग्र'  
बापसी: उषा प्रियंवदा

नोट: कहानियों का सार

कहानिकार का परिचय (संक्षेप में)  
पाठ्य पुस्तक के प्रश्नोत्तर  
परीक्षापयोगी महत्वपूर्ण प्रश्नोत्तर

(भाग ड)

व्याकरण

अंक: 20

निबन्ध: सामाजिक, उत्सव, वैज्ञानिक, खेले, राष्ट्रीय आदि

पत्रलेखन: निजी-पत्र, आवेदन पत्र, व्यवसायिक-पत्र

अलंकार: अनुप्रास, उपमा, अतिशयोक्ति तथा उत्प्रेक्षा के लक्षण और उदाहरण

**SYLLABUS CLASS XI**

Code : 205

डोगरी (DOGRI)

Maximum Marks: 100

Time: 3 hours

(ख) व्याकरण

पद्य भाग : (क)	कविता	:	नमां जुग, सरगम।
	गजलां	:	रामनाथ शास्त्री ते वेदपालदीप।
	गीत	:	यश शर्मा।
	चमुखे	:	मोहन लाल सपोलिया।
गद्य भाग : (ख)	कहानियां	:	पागल, कफर्यू।
	निबंध	:	शेरसिंह बनाम पंजूसाम, क्षमा करना धन्यवाद।
	एकांकी	:	नीलकंठ।
(ग) व्याकरण		:	गद्य ते पद्य भाग चा व्याकरण सरबन्धी सुआल।

## SYLLABUS CLASS XI

(ख) व्याकरण :

पद्य भाग : (क) कविता : भाव-छुआले, इक दिन गिल्लुए जदू मठोना

गजलां : वेदपाल 'दीप ते शिव राम दीप'।

गीत : यश शर्मा।

चमुखे : मोहन लाल सपोलियां।

गद्य भाग : (ख) कहानियां : संगलां, अजब सा ओह आदमी।

निबंध : भिसदियां लीकरां, जीवन केह ऐ ?

एकांकी : नीलकंठ।

(ग) व्याकरण : गद्य ते पद्य भाग चा व्याकरण सरबन्धी सुआल।

### Book Prescribed

A Textbook of Dogri 'Rishman' for Class XI published by J&K State BOSE

Code : 206

संस्कृत (SANSKRIT)

Marks: 100

Time: 3 Hrs.

- (क) गद्य भाग तथा रङ्गिणी : एन० सी० ई० आर टी द्वारा संकलित एवं संपादित पाठ उदयनरय पत्नी प्रीति
- (ख) पद्य भाग (काव्य) कालिदास कृत कुमारसंभवम् (केवल पांचवां सर्ग)  
पहले श्लोक से 45 वें श्लोक तक
- (ग) व्याकरण
1. स्वर संधि भेद सहित
  2. स्वरान्त शब्दों में से अकारान्त पुल्लिङ्ग, आकारान्त स्त्रीलिङ्ग उकारान्त पु० शब्द
  3. भ्वादि गण में से भू, गम्, पठ्, स्म, और दृश धातु (लट्, लोट्, लृट् तथा विधिलिङ्ग लकारों में)
  4. समास – कर्मधरय तथा तत्पुरुष
  5. प्रत्यय – शतृ, शानच्
- व्याकरण के लिये निर्धारित पुस्तक :-  
संस्कृत व्याकरण प्रदीप या सुबोध संस्कृत व्याकरण या संस्कृत व्याकरण प्रबोध
- (घ) साहित्य
1. रामायण का महत्त्व
  2. कालिदास कवि के रूप में

## SYLLABUS CLASS XI

निर्धारित पुस्तक :

संस्कृत साहित्य की रूपरेखा

लेखक :- चन्द्रशेखर पाण्डेय व व्यास ।

- (क) गद्य एवं पद्य भाग रङ्गिणी : एन० सी० ई० आर टी  
पाठ (1) शकुन्तलायाः पतिगृहगमनम्  
(2) सीता परित्राणम्
- (ख) पद्य भाग (काव्य) कालिदास कृत कुमारसंभवम्  
पांचवा सर्ग 46वें श्लोक से लेकर अन्त तक
- (ग) व्याकरण  
1. सर्वनाम शब्द :- युष्मद्, तत्, अस्मद्, किम्, इदम्  
2. धातु:- सी, चल, पा, रक्ष, हस  
3. प्रत्यय:- क्त, क्तवत्, तव्यत्  
4. समास:- द्वन्द्व, द्विगु  
अनुवाद:- सामान्य वाक्य
- (घ) साहित्य  
1. महाभारत का सामान्य परिचय एवं काल निर्धारण  
2. नाटकों का उद्भव और विकास  
3. भासः नाटककार के रूप में

Code : 208

འཛིན་གྱི་བརྒྱུ་གཅིག་པའི་སློབ་ཚན།

BHOTI

Marks 100

སློབ་དེབ་གཞིན་ཀྱི་འཕུལ་བྱུང་ཁག་དང་པོ།  
(J&K Board of School Education)

ཁག་དང་པོ། རྒྱུ

- ༡ ཚིག་ལྷུག (Prose Section) བར་ 40
- ༢ ཚིགས་བཅད (Poetry Section) བར་ 20
- ༣ བད་སྟོན་སྐབས (Grammar Section) བར་ 40

༡ ཚིག་ལྷུག (Prose Section) Marks 20

ཡང་གི་སློབ་དེབ་ནང་གི་བཤམ་བསལ་སློབ་ཚན།

དཔེ་སྟོང་གྲུ་ལྷུག་སྐབས།

- ༢ ཚིག་སྟོན་གཅིད་པ་དང་ཞེས་སྐབས།
- ༣ སེམས་ཅན་ཡང་ཡང་གི་ཁམས་དང་བསམ་པའི་དབང་གི་ཞེས་སྐབས།

३ कविता पठन (Poetry Section)

Marks 10

- २८ कविता पठन के अन्तर्गत निम्नलिखित कविता पठने पर  
१ 'युद्ध' २८ पंक्ति 'दशम' पद्य कविता  
२ 'पद' १५ पंक्ति 'अष्टम' पद्य कविता  
३ 'सोमनाथ' ६ पंक्ति 'अष्टम' पद्य कविता  
८ 'सुन्दर' १५ पंक्ति 'अष्टम' पद्य कविता  
५ 'सुमनाथ' ६ पंक्ति 'अष्टम' पद्य कविता

३ व्याकरण (Grammar Section)

Marks 20

- १ व्याकरण ।  
२ 'युद्ध' । युद्ध ।  
३ 'युद्ध' पद्य पठने पर ।  
८ 'युद्ध' पद्य पठने पर ।  
५ व्याकरण ।  
६ 'युद्ध' पद्य पठने पर ।  
७ व्याकरण ।  
८ 'युद्ध' पद्य पठने पर ।  
१० 'युद्ध' पद्य पठने पर ।





2. **ಹೆಚ್ಚು (Prose Section)**

Marks 20

೨೦. **ವಿಜ್ಞಾನದ ವಿಕಾಸದ ಬಗ್ಗೆಯೇ ಹೆಚ್ಚು ಗ್ರಂಥ**

1. **ಓಂ: ಪ್ರಾಣಿ ಪಂಚಾಂಗದ ಬಗ್ಗೆಯೇ ಹೆಚ್ಚು ಗ್ರಂಥ**

2. **ಮಹಾಭಾರತದ ಬಗ್ಗೆಯೇ ಹೆಚ್ಚು ಗ್ರಂಥ**

3. **ಬಿಡುಗಡೆಗಾಗಿ ಹೆಚ್ಚು ಗ್ರಂಥ**

4. **ವಿಜ್ಞಾನದ ಬಗ್ಗೆಯೇ ಹೆಚ್ಚು ಗ್ರಂಥ**

5. **ದೇವತೆಗಳ ಬಗ್ಗೆಯೇ ಹೆಚ್ಚು ಗ್ರಂಥ**

3. **ಹೆಚ್ಚು (Poetry Section)**

Marks 10

೨೦. **ವಿಜ್ಞಾನದ ವಿಕಾಸದ ಬಗ್ಗೆಯೇ ಹೆಚ್ಚು ಗ್ರಂಥ**

1. **ದೇವತೆಗಳ ಬಗ್ಗೆಯೇ ಹೆಚ್ಚು ಗ್ರಂಥ**

2. **ಮಹಾಭಾರತದ ಬಗ್ಗೆಯೇ ಹೆಚ್ಚು ಗ್ರಂಥ**

3. **ಬಿಡುಗಡೆಗಾಗಿ ಹೆಚ್ಚು ಗ್ರಂಥ**

4. **ವಿಜ್ಞಾನದ ಬಗ್ಗೆಯೇ ಹೆಚ್ಚು ಗ್ರಂಥ**

5. **ದೇವತೆಗಳ ಬಗ್ಗೆಯೇ ಹೆಚ್ಚು ಗ್ರಂಥ**





2. गद श्रुत (Grammar etc.)

Marks 20

1	वचनव्ययस्य ३०० श्लोकानि चतुर्दशवर्षात्तु ३०० श्लोकानि सूचयित्वा ।	७८	07
2	संज्ञा ७८ च ३०० श्लोकानि चतुर्दशवर्षात्तु ।	७८	04
3	वचनव्ययस्य १०० श्लोकानि चतुर्दशवर्षात्तु ।	७८	02
4	संज्ञा १०० श्लोकानि चतुर्दशवर्षात्तु ।	७८	02
5	वचनव्ययस्य १०० श्लोकानि चतुर्दशवर्षात्तु ।	७८	02
6	संज्ञा १०० श्लोकानि चतुर्दशवर्षात्तु ।	७८	01
7	संज्ञा १०० श्लोकानि चतुर्दशवर्षात्तु ।	७८	01
8	वचनव्ययस्य १०० श्लोकानि चतुर्दशवर्षात्तु ।	७८	01

Code : 207

ਜਮਾਤ ਯਾਰਵੀ (ਹਾਇਰ ਸਕੈਡਰੀ ਪਾਰਟ ਫਸਟ)

ਸਲੈਬਸ ਪੰਜਾਬੀ (PUNJABI)

Maximum Marks: 100

Time: 3 hours

- (1) ਕਾਵਿ ਪ੍ਰਵਾਹ ਸੰਪਾਦਕ ਦੀਵਾਨ ਸਿੰਘ (ਕਵਿਤਾ)
- (ੳ) ਸ਼ੇਖ ਫਰੀਦ
  - (ਅ) ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ
  - (ੲ) ਦਮੋਦਰ
  - (ਸ) ਪੀਲੂ
  - (ਹ) ਭਾਈ ਗੁਰਦਾਮ ਜੀ
  - (ਕ) ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਜੀ
- (2) ਦਸ ਝਰੋਖੇ ਨਵਤੇਜ ਸਿੰਘ ਨਿੱਕੀ ਕਹਾਣੀ
- (ੳ) ਪ੍ਰੀਤਾਂ ਦੇ ਪਹਿਰੇਦਾਰ ਕਹਾਣੀ ਦਾ ਸਾਰ

ਅ) ਤਾਸ਼ ਦੀ ਆਦਤ ਪਾਤਰ ਚਿਤ੍ਰਣ

(ੲ) ਬਾਰੀ ਦੀ ਧੀ

(ਜ) ਪ੍ਰੇਮੀ ਦੇ ਨਿਆਣੇ

(ਹ) ਪਠਾਣ ਦੀ ਧੀ

(ੜ) ਇਕਾਂਗੀ ਪੰਜ ਢੋਣਵੇਂ ਇਕਾਂਗੀ ਸੁਰਜੀਤ ਸਿੰਘ ਸੇਠੀ

(ੳ) ਮਨ ਦੀਆਂ ਮਨ ਵਿਚ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ

(ਅ) ਇਕ ਐਤਵਾਰ ਪਾਤਰ ਚਿਤ੍ਰਣ

(ੲ) ਰਾਤ ਕਟ ਗਈ

ਵਿਆਕਰਣ

(ੳ) ਲੇਖ ਰਚਨਾ

(ਅ) ਚਿੱਠੀ ਪੱਤਰ

(ੲ) ਅਖਾਨ ਤੇ ਮੁਹਾਵਰੇ

4. ਕਾਵਿ ਪ੍ਰਵਾਰ: ਕਵਿਤਾ: ਦੀਵਾਨ ਸਿੰਘ  
(ੳ) ਨਜ਼ਾਬਤ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ  
(ਅ) ਵਾਰਸ ਸ਼ਾਹ ਕਵਿਤਾ ਦਾ ਸਾਰ  
(ੲ) ਹਾਸ਼ਮ  
(ਸ) ਸ਼ਾਸ ਮੁਹੰਮਦ  
(ਹ) ਫਸਲ ਸ਼ਾਹ  
(ਕ) ਮੁਹੰਮਦ ਬੁਟਾ ਗੁਜਰਾਂਤੀ
5. ਦਸ ਝਰੋਖਤ: ਨਵਤੋਜ ਸਿੰਘ: ਨਿੱਕੀ ਕਹਾਣੀ  
(ੳ) ਕਰਾਮਾਤ ਕਹਾਣੀ ਦਾ ਸਾਰ  
(ਅ) ਸਵੈਰ ਹੋਣ ਪਾਤਰ ਚਿਤ੍ਰ  
(ੲ) ਤੂਤੀ ਦੀ ਪੰਡ  
(ਸ) ਦੇਸ਼ ਵਾਪਸੀ  
(ਹ) ਗੁਲਬਾਨੋ
6. ਪੰਜ ਚੋਣਵੇਂ ਇਕਾਂਗੀ  
(ੳ) ਦਿਲ ਦੀ ਬੁਕੱਲ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ  
(ਅ) ਅਪਮਾਨ ਪਾਤਰ ਚਿਤ੍ਰ

ਅਵਾਕਰਣ

- (ੳ) ਲੇਖ ਰਚਨਾ  
(ਅ) ਸ਼ਬਦ ਰਚਨਾ ਤੇ ਸ਼ਬਦਾਵਲੀ  
(ੲਕ) ਵਿਰੋਧਅਰਥਕ ਸ਼ਬਦ  
(ਦੂਜਾ) ਅਗੇਤਰ ਤੇ ਪਿਛੇਤਰ  
(ਤੀਜਾ) ਬਹੁਅਰਥਕ ਸ਼ਬਦ  
(ਚੌਥਾ) ਭਿੰਨਅਰਥਕ ਸ਼ਬਦ



Code : 209

ARABIC

Term 1<sup>st</sup> = 35 marks

Unit 1

Maximum Marks: 100

- 1/1 الحروف الهجائية
- 2/2 مخارج الحروف
- 3/3 المفردات
- 4/4 الحروف الشمسية والقمرية
- 5/5 الحركات
- 6/6 التركيز والتأنيث
- 7/7 المفرد وثنائية والجمع
- 8/1 تقسيم الكلمة إلى الاسم والعل والحرف
- 9/2 تقسيم الاسم إلى الامة والمعرفة
- 10/3 اسم العلم
- 11/4 اسم الضمير
- 12/5 اسم الإشارة
- 13/6 اسم الموصول
  
- 14/1 المضارع وتصريفه
- 15/2 المضارع وتصريفه
- 16/3 الامر وتصريفه
- 17/4 النهى وتصريفه
- 18/5 تقسيم الفعل إلى اللازم والمتعدي
- 19/6 تقسيم الفعل إلى المعروف والمجهول

- 20/1 الجملة الاسمية  
21/2 الجملة الفعلية  
22/3 المركب التوصيفي  
23/4 المركب الإضائي  
24/5 الأسماء الممنوعة من الصرف  
25/1 الأعداد  
26/2 أسماء الأيام  
27/3 شهور السنة  
28/4 فصول السنة  
29/5 الآيات القرآنية  
30/6 الأحاديث النبوية

- 31/1 القرآن الكريم  
32/2 المسجد  
33/3 تلميذ أمين  
34/4 التعاون  
35/5 مدرستي  
36/6 الأشعار

## ARABIC

**Theory: 100 Marks**

**Time: 3 Hrs.**

### Part 1 Quran and Al-Hadith.

**(4x6=24)**

1. Translation of Quranic verses of the Prescribed Text book into Urdu or English with internal choice. (6)
2. Translation of Al-Hadith into Urdu or English with internal choice. (6)
3. Explain with reference to the context in Urdu or English (based on Suras prescribed in Text Book) with internal choice. (6)
4. Writing a brief note on Al-Quran in Arabic Prescribed in the Text Book. (6)

### Part 2 Prose Section.

**(4x6=24)**

1. Translation of One Paragraph out of two into Urdu or English. (6)
2. Filling in the blanks with internal choice from prescribed Text Book. (6)
3. Explanation with reference to the context in Urdu or English based on passage extracted from the prescribed Text Book with internal choice. (6)
4. Difference of "SUN" and "MOON" letters based of different examples which are given in the prescribed Text Books. (6)

### Part 3 Writing Skills

**(22)**

1. Five multiple choice questions from Lesson No. 08 to 10 of the prescribed Text Book. (5)
2. Translation of six words out of Twelve from the prescribed Text Book. (6)
3. Six Simple Questions in Arabic Language to be asked. (6)
4. Identification of different Nouns and Verbs. (5)

### Part 4 Questions on applied Grammar

Topics are given below.

Marks: 30

المركبات - التذكير والتأنيث - المفرد والتثنية والجمع - اسم الإشارة -  
 اسم الإشارة - اسم الموصول - الفعل الماضي - الفعل المضارع - فعل الأمر -  
 فعل النهي - الفعل اللازم - الفعل المتعدي - الفعل المرفوع -  
 الفعل المجهول - الجملة الفعلية - الجملة الاسمية - المركب التوضيحي  
 المركب الإضافي - الأسماء المنوعة من الصرف - الأعداد -

**Text Book Prescribed**

Textbook of Arabic for Class 11th Published by J&K State Board of School Education

Code : 210

Maximum Marks: 100

Time: 3 hours

## PERSIAN

### زبان آموزی

درس ۱ تا ۶

### بخش نثر

ملرا و سلرا ۱ تا ۸

### بخش نظم

راه مدرسه

### زبان آموزی

درس ۷ تا ۱۰

### بخش نثر

تخته سیاه

ماه و خورشید

### بخش نظم

دهر بقتولز مایر

ملکونکن

کتله خوب

### زبان آموزی

درس ۱۱ تا ۱۴

### بخش نثر

ماه و سال

لاہ پشت و مرغابی

### بخش نظم

صبح

درختکری

## PERSIAN

Theory: 100 Marks

Time: 3 Hrs.

There shall be one theory paper of 100 marks of 3 hours duration that contains three following points.

1. Language portion of the prescribed text book. 40 Marks
2. Prose portion of the prescribed textbook. 30 Marks

- ۱- دارا و سارا انا ۸
- ۲- تختہ سیاہ
- ۳- ماہ و خورشید
- ۴- ماہ و سال
- ۵- لاکہ پشت و مرغابی ها
- ۶- پیغمبر و قرآن

3. Poetry portion of the prescribed textbook. 30 Marks  
Selected Chapter

- ۱- راز مدرسه
- ۲- مہربان نثر از مادر
- ۳- ما کو دکان
- ۴- کتاب خوب
- ۵- صبح
- ۶- درختکاری
- ۷- شیخ سنجدی شیرازی (مناجات - ہمدردی)

## SYLLABUS CLASS XI

Scheme of Assessment:-

- Q.1. Translation of six persian sentences into English/Urdu out of eight sentences. 06 Marks
- Q.2. Translation of six English/ Urdu sentences into persian out of eight sentences. 06 Marks
- Q.3. Six questions of one marks each will be asked out of eight questions. 06 Marks
- Q.4. Coryugation of persian verbs will respect to past and present and future tense with internal choice. 06 Marks
- Q.5. Fill in the blanks with suitable persion words. 06 Marks
- Q.6. To write the meaning and sentences of five persian words into persian out of eight. 05 Marks
- Q.7. Arrangement of sentences. 05 Marks

### Text Book Prescribed

Textbook of Persian for Class 11th Published by J&K State Board of School Education

Code : 212

URDU

M. Marks: 100

Time: 3Hrs.

سوال کے نمبرات	سوالات کا خاکہ	حصہ	نمبرات
۵	سوال نمبر ۱۔ کتاب کے تری اسباق سے لے گئے ۱۰ اقتباسات میں سے ایک کو سیاق و سباق کے ساتھ سلیس لکھنا	الف	
۶	سوال نمبر ۲۔ دے گئے ۱۰ غیر نصابی اقتباسات میں سے کسی ایک کے آخر پر دے گئے تین سوالات کے جواب لکھنا		
۵	سوال نمبر ۳۔ کسی ایک تری سبق کا خلاصہ لکھنا۔ (دو میں سے ایک)		
۳	سوال نمبر ۴۔ کتاب میں درج تری اسباق کے آخر پر دے گئے سوالات میں سے پوچھے گئے چار سوالات میں سے دو کے جواب لکھنا	ب	۲۵
۵	سوال نمبر ۵۔ شامل نصاب ترنگاروں میں سے پوچھے گئے تین میں سے کسی ایک ترنگار کے حالات زندگی یا ادبی خدمات پر نوٹ لکھنا		
۵	یا شامل نصاب تری اصناف میں سے دو میں سے ایک پر نوٹ لکھنا		
۶	سوال نمبر ۶۔ شامل نصاب غزلیات میں سے پوچھے گئے ۱۵ اشعار میں سے تین کی تشریح کرنا		
۶	یا شامل غیر غزلیہ اصناف میں سے پوچھے گئے دو بندوں میں سے کسی ایک بند کی تشریح کرنا		
۵	سوال نمبر ۷۔ شامل نصاب شعراء میں سے سوالنامے میں پوچھے گئے تین شعراء میں سے کسی ایک کے حالات زندگی یا ادبی خدمات کا جائزہ	شاعری	۲۵
۳	سوال نمبر ۸۔ شامل نصاب نظموں میں سے پوچھی گئی تین نظموں میں سے کسی ایک نظم کا خلاصہ لکھنا۔		
۳	سوال نمبر ۹۔ شامل نصاب شعری اصناف میں سے کسی ایک صنف پر نوٹ لکھنا۔ (تین میں سے ایک)		
۶	سوال نمبر ۱۰۔ دی گئی چھ شعری اصطلاحات میں سے تین کی مثالوں کے ساتھ وضاحت کرنا		
۱۰	سے متعلق ہونے چاہیے۔	تخلیقی	۲۵
۸	دے گئے تین نئی رکارہ باری رو قری خطوط اور خواہش میں سے کسی ایک کو لکھنا۔	کام	
۷	انباری اشتہار یا رپورٹ تحریر کرنا۔		
۱۵	سوال نمبر ۱۱۔ شامل نصاب تحریکات، رجحانات، ادارہ جات وغیرہ سے متعلق پوچھے گئے چار سوالات میں سے دو کے مفصل جوابات لکھنا۔	تواضع	
۱۰	سوال نمبر ۱۲۔ معروف تری سوالات۔ قواعد سے متعلق پانچ اور کتاب سے متعلق پانچ	اور ادبی	۲۵
		تاریخ	

Text Book Prescribed

Baharistan Urdu for Class 11th Published by J&amp;K State Board of School Education

Introduction of public Administration

**Unit : I Introduction**

Meaning, scope and significance of Public Administration; Dichotomy of Politics and public Administration, Evolution of Public Administration, Public Administration management in NEW PUBLIC ADMINISTRATION.

**Unit : II Approaches**

Approaches: Classical approach, Human Relation approach and Ecological approach.

**Unit : III Classical Thought**

Management Thought: Henri Fayol - F.W Taylor, Classical Theory - Luther Gulick, Bureaucracy - Max Weber

**Unit : IV Human Relations and behavioural thought**

Human Relation school Elton Mayo; Decision making - Herbert Simon, Theory X and Y : Mcgregor, Hierarchy of needs : Abraham maslow

**Unit : V Principles**

Principle-1: Division of work and coordination, Principle-ii: Hierarchy, Unity of command and span of control, centralization and decentralization, Delegation, Line and Staff.

**Unit : VI Concepts**

Administrative planning, Leadership, Supervision, Communication, Public Relation

**Unit : VII Public policy**

Models of policy making, public policy formulation, Evaluation and review, limitations of evaluation, Role of Media

**Unit : VIII Financial administration**

Financial Administration - Meaning, purpose and significance; Budget - types of Budget

**Unit : IX Accountability and citizen administration**

Concepts of accountability and control, Legislative, Executive, and judicial control over administration, citizen and administration, citizen charter/public service guranttte Act 2011. Right to Information Act in India

**Unit : X Advancement**

New Public Management, Globalization and Public Administration, Governance and Good Governance

### **Suggested Readings**

Anderson J.E., (2006) Public Policy-Making: An introduction, Boston, Houghton Arndt Christiane and Charles Oman (2006), Uses and Abuses of Governance Indicators, OECD, Paris.

Avasthi & Maheshwari (2012), Public Administration, Lakshminarayan Agarwal, Agra

Bergerson, Peter J. (ed.), (1991), Teaching Public Policy: Theory, Research and Practice, - Westport, RI: Greenwood Press

Bhattacharya, Mohit (2013), New Horizons of Public Administration, Jawahar Publishers, New Delhi.

Birkland Thomas A., (2005), An Introduction to The Policy Process: Theories, Concepts, And Models of Public Policy Making, Armonk; M.E. Sharpe

Donald Menzel and Harvey White (eds) (2011). The State of Public Administration: issues, Challenges and Opportunities, New York, M. E. Sharpe.

Dye Thomas (2008), understanding Public Policy, Singapore, Pearson Education

Henry, Nicholas (2006), Public Administration and Public Affairs, Prentice Hall of India, New Delhi.

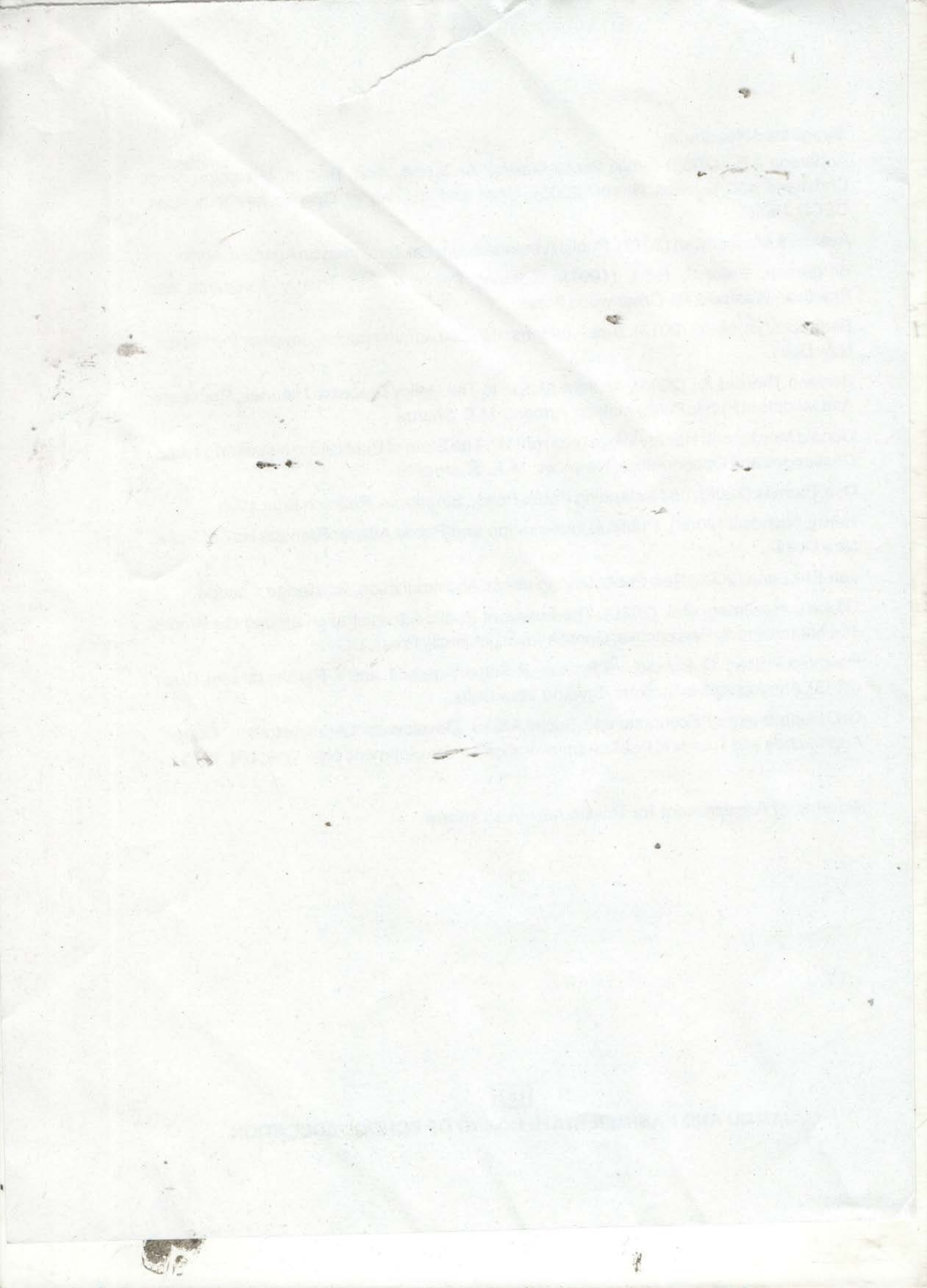
Jan-Erik Lane, (2000) New Public Management: An Introduction, Routledge, London.

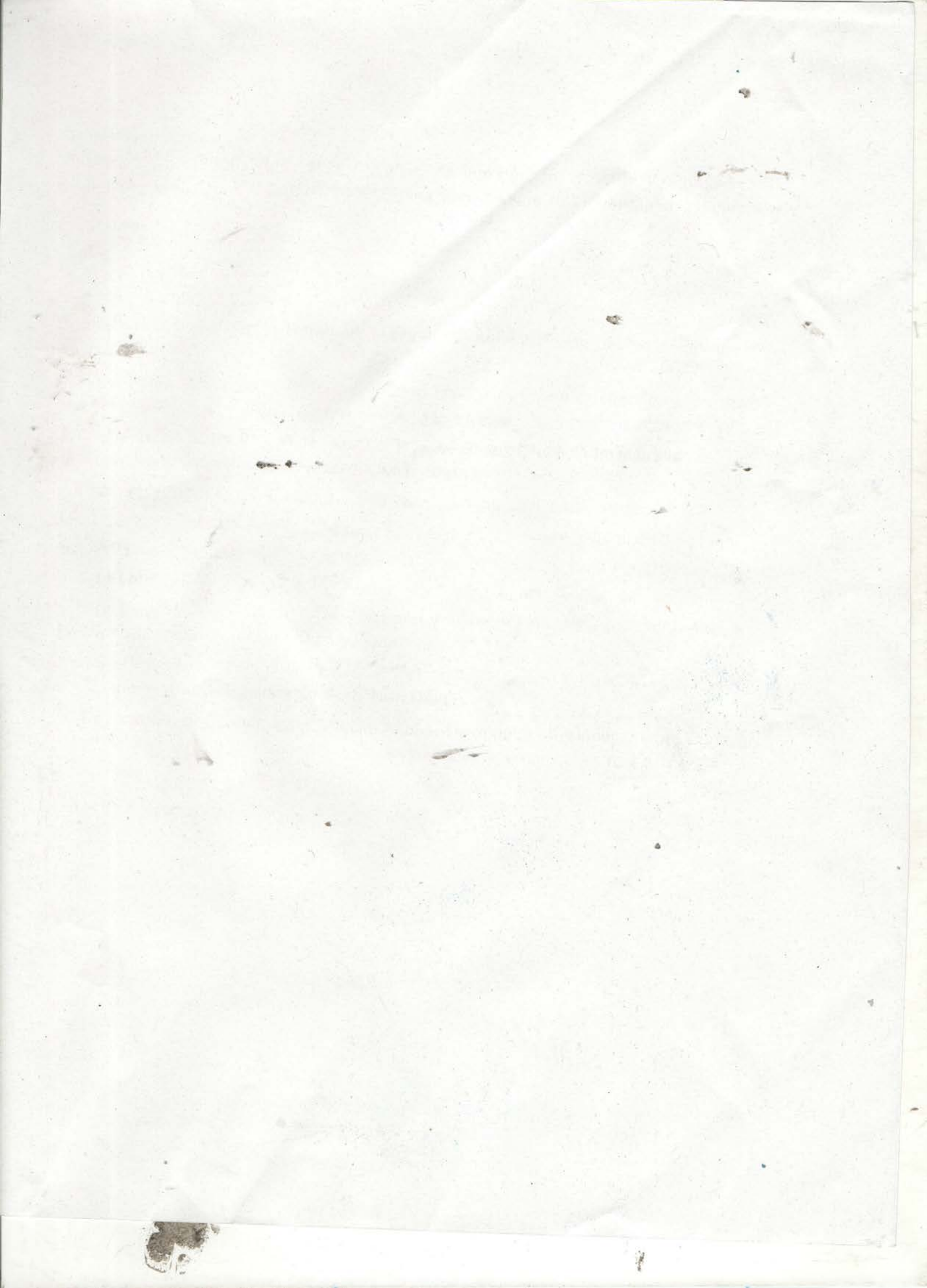
O'Leary, Rosemary et al. (2010), The Future of Public Administration around the World: The Minnowbrook Perspective, George Town university Press, DC

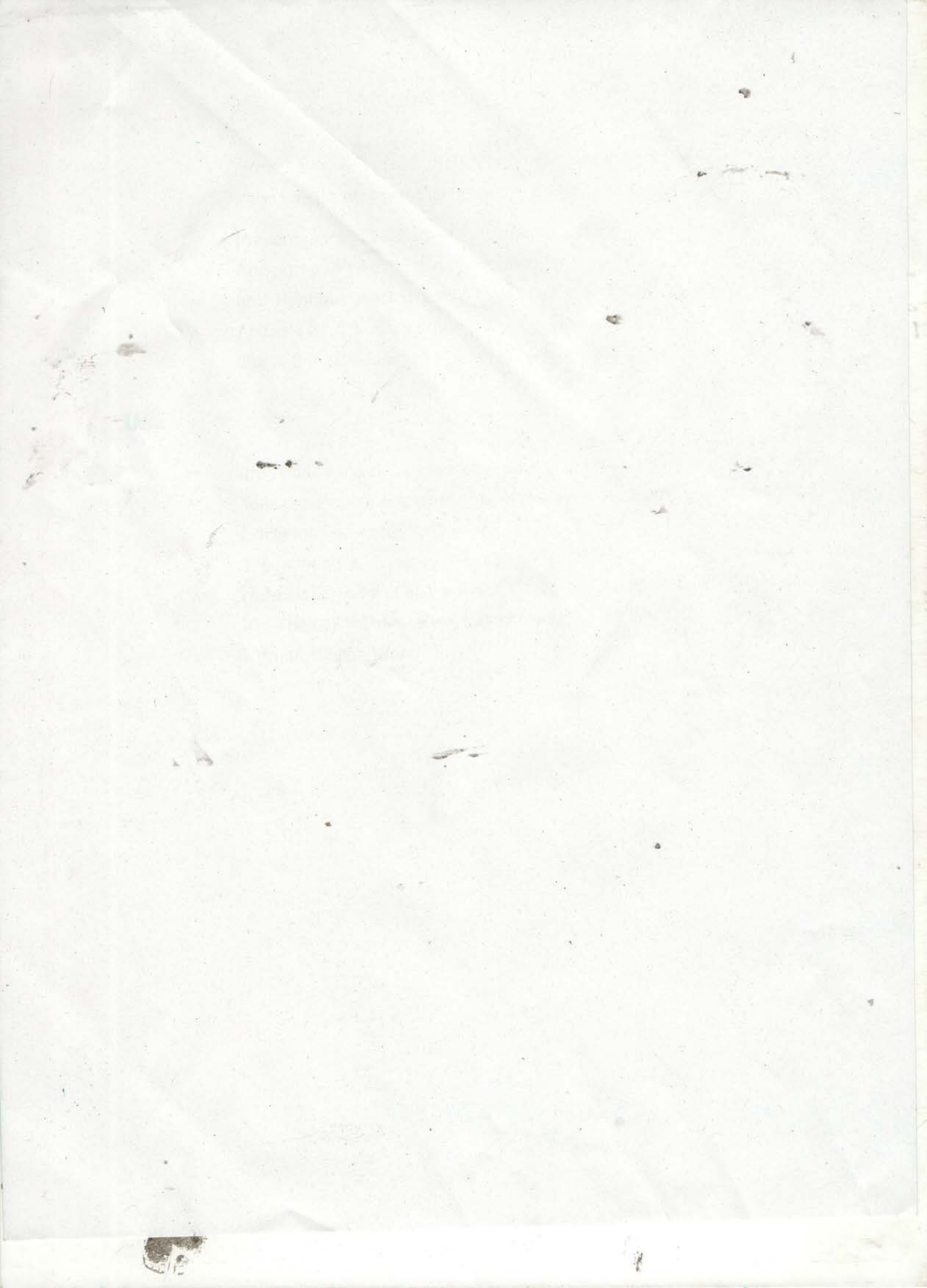
Ravindra Prasad, D. Prasad, VS Prasad, P. Satyanarayana, and Y. Pardhasaradhi, (eds) (2013), Administrative Thinkers, Sterling, New Delhi.


UN, Department of Economic and Social Affairs, Development Administration: Current Approaches and Trends in Public Administration for Development. New York, UN, 1975.

### **Scheme of Assessment for Public Administrations**









# **SYLLABI AND COURSES OF STUDY**

FOR  
Class XI



**The Jammu & Kashmir State Board of School Education**