SYLLABI & COURSES
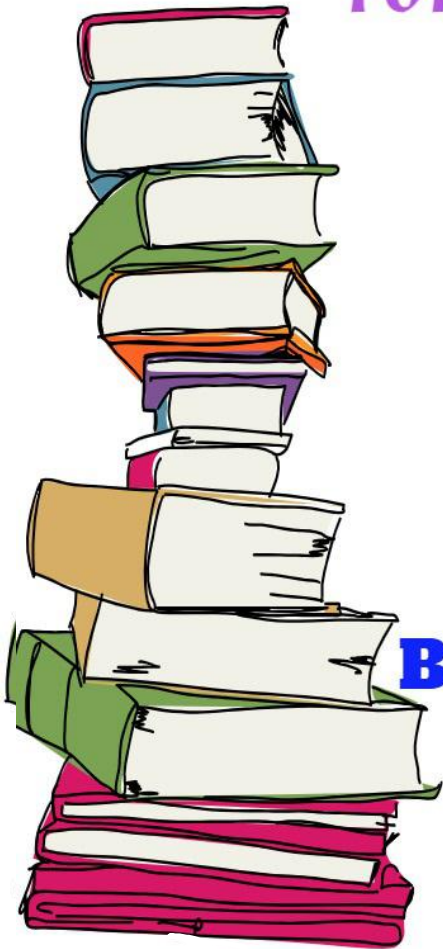# OF STUDY FOR CLASS XII

EFFECTIVE FROM
ACADEMIC SESSION 2024-25
FOR U.T OF J&K AND U.T OF LADAKH

JAMMU & KASHMIR
BOARD OF SCHOOL EDUCATION

CONCESSION FOR CHILDREN WITH SPECIAL NEEDS

The Jammu and Kashmir Board of School Education vide notification No. F(Acad. C) Disabled/C/06, dated:- 03-07-2006 and F (Acad-C) CWSN/Exam/B/22, dated:- 25-04-2022 provides following concessions to Children With Special Needs. **For further details, refer to our notification :-**

1. Students with 40% disability, as defined in The Rights of Person with Disabilities (RPWD) Act, 2016 of permanent nature shall have to secure only 31% marks instead of 36% except General English wherein the minimum qualifying criteria is 28% instead of 33%. This is applicable to both theory and practicals.

2. No examination fee shall be charged to children with special needs as defined in The **Rights of Person with Disabilities (RPWD)** Act, 2016 in case wherein the disability is 40% or more, of permanent nature.

Note:- Children With Special Needs shall have to produce disability certificate from District Medical Board (Competent Authority appointed by the Directorate of Health Services Kashmir/Jammu/Ladakh or documentary proof such as Unique Disability Identity (UDID) Card issued by Department of Empowerment of Persons with Disabilities, Ministry of Social Justice and Empowerment, Government of India.

The Disability Certificate is to be attached with the Admission cum Permission form.

SCHEME OF STUDIES

The students of U.T of Jammu & Kashmir and U.T of Ladakh who shall seek admission in Higher Secondary Part- II (Class 12th) from the Academic session 2024-25 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 and has vertical linkage with under graduate courses offered by various Universities across U.T of Jammu & Kashmir and U.T of Ladakh.

Subject Combination at Higher Secondary Part – II (Class 12th)

FACULTY OF SCIENCE

Group -I	Group-II	Group-III	Group-IV	Group-V	Group-VI	Group-VII	Group VIII Vocational Courses
General English (Compulsory)	Physics (Compulsory)	Chemistry (Compulsory)	Mathematics Applied Mathematics	Biology Statistics Geography	Geology Biotechnology Microbiology Biochemistry	Computer-Science. Information-Practices. Environmental-Science Functional-English. Physical- Education. Islamic Studies Vedic Studies Buddhist- Studies Electronics. Food Technology	IT & ITes Retail Healthcare Tourism & Hospitality Security Agriculture Telecommunication Media and Entertainment Beauty and Wellness. Physical Education and sports Automotive Apparel, Made ups & Home Furnishing Electronics and Hardware Plumbing

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

FACULTY OF HOME SCIENCE

Group -I	Group-II	Group-III	Group-IV	Group-V	Group VI Vocational Courses
General English (Compulsory)	Human Development (Compulsory)	Clothing for the Family (Compulsory)	Extension Education (Compulsory)	Computer-Science. Information-Practices. Environmental-Science Functional-English. Islamic Studies Vedic Studies Buddhist- Studies Physical Education Travel Tourism & Hotel Management Food Technology	IT & ITes Retail Healthcare Tourism & Hospitality Security Agriculture Telecommunication Media and Entertainment Beauty and Wellness. Physical Education and sports Automotive Apparel, Made ups & Home Furnishing Electronics and Hardware Plumbing

Note: A student shall have to opt any one subject from Group-V or VI.

FACULTY OF COMMERCE

Group -I	Group-II	Group-III	Group-IV	Group-V	Group-VI	Group VII Vocational Courses
General English (Compulsory)	Business Studies (Compulsory)	Accountancy (Compulsory)	Entrepreneurship OR Economics	Business Mathematics Type Writing & Shorthand Public Administration	Computer-Science. Information-Practices. Environmental-Science Functional-English. Physical- Education. Islamic Studies Vedic Studies Buddhist- Studies Electronics. Travel Tourism & Hotel Management	IT & ITes Retail Healthcare Tourism & Hospitality Security Agriculture Telecommunication Media and Entertainment Beauty and Wellness. Physical Education and sports Automotive Apparel, Made ups & Home Furnishing Electronics and Hardware Plumbing

Note: A student shall have to opt any two subjects from IV - VII 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	Group IX Vocational Courses
General English (Compulsory)	Urdu Hindi Bhoti Dogri Kashmiri Punjabi	Arabic Sanskrit Persian Economics	Mathematics Applied Mathematics Sociology	Psychology Music Geography Philosophy Education	1. History 2. Home Science (Elective) 3. Public Administration	Statistics Political Science	Computer Science Information Practices. Environmental Science Functional English. Physical Education. Vedic Studies Islamic Studies Buddhist Studies Travel, Tourism & Hotel Management Food Technology English Literature	IT & ITes Retail Healthcare Tourism & Hospitality Security Agriculture Telecommunication Media and Entertainment Beauty and Wellness. Physical Education and sports Automotive Apparel, Made ups & Home Furnishing Electronics and Hardware Plumbing

Note: A student shall have to opt any four subjects from II to IX groups but not more than one from each group.

SCHEME OF ASSESSMENT / EXAMINATION

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

GROUP – I: SCIENCE STREAM

Note: (I) Performance in each subject shall be assessed through single paper of 70 marks for Science subjects and 80 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 by the school teacher through different assessment techniques.

MARKS

Subject	Theory	Practical		Total
		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	80	20	x	100
Applied Mathematics	**80**	**20**	x	100
Statistics	70	10	20	100
Environmental Science	70	10	20 (Ext./P.W)	100
Information Practices	70	10	20	100
Computer Science	70	10	20	100
Food Technology	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 practical examination in case of Zoology shall be of 10 marks and two hours duration.

Note: -

GROUP – II : HOME SCIENCE STREAM

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 (which is 10 in case of each subject) shall be awarded by the schools themselves, as part of internal assessment by the school teacher through different assessment techniques.

MARKS

Subject	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
Food Technology	70	10	20	100

GROUP - III : COMMERCE STREAM

MARKS

Subject	Theory	Practical		Total
		Internal Assessment	External Examination	
Business Studies	80	20	-	100
Accountancy	80	05	15	100
Entrepreneurship	80	05	15	100
Business Mathematics	80	20	-	100
Type Writing & Short Hand	-	40	60	100
Public Administration	80	20 P.W	x	100

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GROUP IV: HUMANITIES STREAM

Subject	Theory	Practical		Total
		Internal Assessment	External Examination	
General English	80	20	✖	100
Hindi	80	20	✖	100
Urdu	80	20	✖	100
Bodhi	80	20	✖	100
Dogri	80	20	✖	100
Kashmiri	80	20	✖	100
Punjabi	80	20	✖	100
Sanskrit	80	20	✖	100
Arabic	80	20	✖	100
Persian	80	20	✖	100
Mathematics	80	20	✖	100
Philosophy	80	20	✖	100
History	80	20	✖	100
Economics	80	20	✖	100
Geography	70	10	20	100
Political Science	80	20	✖	100
Education	100	✖	✖	100
Psychology	70	10	20	100
Sociology	80	05	15	100
Home Science (El)	70	10	20	100
Music	50	25	25	100
Statistics	70	10	20	100
Buddhist Studies	80	20	✖	100
Islamic studies	80	20	✖	100
Vedic Studies	80	20	✖	100
English Literature	80	20	✖	100
Food Technology	70	10	20	100
Functional English	80	20	✖	100
Physical Education	60	15	25	100
Public Administration	80	20	✖	100

The header row "MARKS" spans the Theory, Practical, and Total columns.

Note:

(1) In case of Geography and Home Science (Elective) marks reserved for internal assessment (which is 10 in case of each subject) shall be awarded as part of internal assessment by the school teacher through different assessment techniques.

(2) 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.

NOTE:
In the case of vocational subjects mentioned under the scheme of studies in Science Stream (Group VIII), Home Science Stream (Group VI), Commerce Stream (Group VII), Humanities Stream (Group IX), the choice at present applies to Govt. Schools only where the subjects are being offered.

Subjects Name alongwith codes for Class 12th

S.No	Subject/Title Name	Subject Codes
1	General English	EN
2	Hindi	HI
3	Urdu	UR
4	Bhoti	BO
5	Dogri	DG
6	Kashmiri	KA
7	Punjabi	PU
8	Sanskrit	SA
9	Arabic	AR
10	Persian	PE
11	Buddhist Studies	BU
12	Islamic Studies	IS
13	Vedic Studies	VS
14	Functional English	FE
15	Economics	EO
16	Geography	GG
17	Philosophy	PL
18	Education	ED
19	Psychology	PY
20	Sociology	SO
21	Political Science	PS
22	English Literature	EL
23	Statistics	SS
24	Mathematics	MA
25	History	HY
26	Computer Science	CS
27	Information Practices	IP
28	Environmental Science	ES
29	Physics	PH
30	Chemistry	CH
31	Biology (Zoology/Botany)	BI
32	Electronics	ET
33	Bio-technology	BT
34	Bio-Chemistry	BC
35	Music	MU
36	Family Health Care & Prevention	FH

37	Food Science	FS
38	Management of Resources	MR
39	Business Studies	BS
40	Travel, Tourism and Hotel Management	TT
41	Accountancy	AY
42	Entrepreneurship	EP
43	Public Administration	PA
44	Typewriting and Shorthand	TS
45	Business Mathematics	BM
46	Geology	GO
47	Home Science (Elective)	HS
48	Physical Education	PD
49	Clothing for the Family	CT
50	Applied Mathematics	AM
51	Microbiology	MB
52	Extension Education	EE
53	Human Development	HD
54	Food Technology	FT

Vocational Subjects for Class 12th

55	IT and ITes.	IV
56	Retail	RT
57	Healthcare	HC
58	Tourism & Hospitality	TH
59	Security	SE
60	Agriculture	AG
61	Telecommunication	TE
62	Media and Entertainment	ME
63	Beauty and Wellness	BW
64	Physical Education and Sports	PW
65	Apparels, Makeup and Home Furnishing	AH
66	Plumbing	PB
67	Electronics & Hardware	EH
68	Automotive	AT

The Jammu and Kashmir Board of School Education

Rehari Colony, Jammu-Tawi /New Campus, Bemina, Srinagar (J&K)

CONTENTS

27	Biotechnology	**103-105**
28	Microbiology	**106-107**
29	Travel, Tourism and Hotel Management	**108-109**
30	Biochemistry	**110-111**
31	Environmental Science	**112-113**
32	Physical Education	**114-115**
33	Buddhist Studies	**116-117**
34	Kashmiri	**118-120**
35	Entrepreneurship	**121-123**
36	Typewriting and Shorthand	**124-125**
37	Human Development	**126-127**
38	Clothing for Family	**128-129**
39	Extension Education	**130-131**
40	Food Technology	**132-133**
41	Punjabi	**134-135**
42	Dogri	**136-137**
43	Sanskrit	**138-139**
44	Persian	**140-141**
45	Arabic	**142-143**
46	Urdu	**144-146**
47	Hindi	**147-148**
48	Bhoti	**149-150**
49	Geology	**151-154**
50	Public Administration	**155-156**
51	Islamic Studies	**157**
52	Vocational Subjects (Level-4)	**The detailed Syllabi of 14 Vocational Subjects are separately available on JKBOSE Website**

GENERAL ENGLISH

CLASS–XII   TIME:3 HOURS

MAX MARKS: 100   80 (THEORY) +20 (INTERNAL ASSESSMENT)

PRESCRIBED BOOKS

1. *Flamingo*: Textbook in English for Class XII (Core Course) published by NCERT, New Delhi

    1. The Last Lesson
    2. Lost Spring
    3. Deep Water
    4. The Rat trap
    5. Indigo
    6. Poets and Pancakes
    7. The Interview (Part I & II)
    8. Going Places
    9. My Mother at Sixty-six
    10. Keeping Quiet
    11. A Thing of Beauty
    12. A Roadside Stand
    13. Aunt Jennifer's Tigers

2. *Vistas*: Supplementary Reader in English for Class XII (Core Course) published by NCERT, New Delhi

    1. The Third Level
    2. The Tiger King
    3. Journey to The End of the Earth
    4. The Enemy
    5. On the Face of It
    6. Memories of Childhood (The Cutting of My Long Hair & We Too Are Human Beings)

SCHEME OF ASSESSMENT

Q No	DESCRIPTION	Weightage
SECTION A: READING COMPREHENSION		**20 marks**
1	One unseen passage (400-500 words) for note-making (5 marks), summarizing (4 marks) and providing the summary a title (1mark).	10 marks
2	One unseen prose passage (400-500 words) followed by ten objective type questions including MCQ's, fill-ups, true/false, yes/no to assess comprehension, interpretation, inference and vocabulary.	1x10=10 Marks
SECTION B: WRITING SKILLS AND GRAMMAR		**30 marks**
3	One out of two questions on advertisements/ writing formal/informal invitations and replies (40-50 words).	4 marks
4	One out of two questions on letter writing (business or official letters for making enquiries, registering complaints, asking for and giving information, placing orders and sending replies, letters to the editor giving suggestions/opinions on an issue; letter to the school or college authorities, regarding admissions, school issues, requirements/suitability of courses, etc.) (120-150 words) Address:1mark Salutation:1mark Body: 3 marks Closing:1mark	6 marks
5	One question on writing a resume along with cover letter. Resume: 4 marks Cover letter (120-150) words: 2 marks	6 marks
6	One out of two compositions on article/ debate/ speech/ personality profile/ personal narrative/humorous writing (200-250words).	6 marks
7	One passage100-150 words in length for editing to test the following items: reflexive pronouns, tenses, punctuation, narration, conjunctions, prepositions and change of voice (8 items).	8 marks
SECTION C: Literature		**30 marks**
8	a) One poetic passage from the prescribed textbooks followed by four objective type questions on context, comprehension, poetic devices, theme, etc. (4×1=4marks) b) Two out of three short answer type questions on prescribed poems other than included at a) above based on poetic	10 marks

	devices, theme, global comprehension to be answered in 40-50 words. (2x3=6 marks)	
9	Three out of five short answer type questions from *Flamingo* based on prose lessons to assess inference and critical thinking (40-50 words each).	3 x 3 =9 Marks
10	One out of two long answer type questions from *Vistas* based on prose lessons to assess inference, critical thinking and appreciation, global comprehension, theme, style and extrapolation beyond the texts. Questions to elicit creative responses and ability to form opinions. (150-200 words)	6 marks
11	One out of two long answer type questions from the play based on inference, theme, characterization, setting, plot, literary devices and critical thinking. (120-150 words)	5 marks

INTERNAL ASSESSMENT

Assessment of Listening and Speaking Skills

Assessment of Listening and Speaking Skills will be for 20 marks. Practice and assessment is to be based on the activities included in the prescribed textbooks and by taking recourse to various resources and techniques available in the school.

INTERNAL ASSESSMENT

Assessment of Listening Skills - 05 marks.

Assessment of Speaking Skills –   05 Marks

Project Work   - 10 Marks

Suggested Reading

For grammar, teachers and students can refer to any standard grammar textbook for further reading and clarification of concepts. Some of the books include:

- *English Grammar in Use by Raymond Murphy published (Cambridge University Press)*
- *Oxford Practice Grammar by John Eastwood published (Oxford University Press)*
- *Grammar Practice Activities by Penny Ur (Cambridge University Press)*
- *A Practical English Grammar by Thomson and Martinet (Oxford University Press)*
- *High School English Grammar by Wren and Martin (S Chand Publishing)*

Question Paper Design

Section	Competencies	Total marks
Comprehension	Conceptual understanding, decoding, Analyzing, inferring, interpreting, appreciation, literary, conventions and vocabulary, summarizing and using appropriate format/s	20 Marks
Writing Skills	Reasoning, appropriacy of style and tone, using appropriate format and fluency, inference, analysis, evaluation and creativity	30 Marks
Literature Textbook and Supplementary Reader	Recalling, reasoning, appreciating literary convention, inference, analysis, creativity with fluency	30 Marks
	TOTAL	80 Marks
Assessment of Listening and Speaking Skills		20 Marks
	GRAND TOTAL	100 Marks

HISTORY

Themes In Indian History (Part–I)   **25 Marks**

1. The Story of the First Cities: Harappan Archaeology Broad overview: Early urban centers
    Story of discovery: Harappan Civilization Excerpt: Archaeological report on a major site
    Discussion: How it has been utilized by Archaeologist/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**

1. 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.

2. 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. Excerpts: Visuals of buildings at Hampi.

    Discussion: Ways in which historians have analyzed and interpreted these structures.

3. 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. Excerpts: Extracts from selected Bhakti – Sufi works.

    Discussion: Ways in which these have been interpreted by historians.

4. 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, Bernie.

    Discussion: What these travel accounts can tell us and how they have been interpreted by historians.

Themes in Indian History (Part–III)   25 Marks

1. 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.

2. 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.

3. Mahatma Gandhi through Contemporary Eyes. Broad overview:
   (a) TheNationalistMovement1918– 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.

5. 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.

Map work on Unit1-15:   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 & Part-III)

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
Total	**100 marks**

Scheme of Assessment (Theory)

Question paper contains six sections namely

1. **Section –A** contains 10 (Objective Type Questions/MCQs) of 1 markeach.

1x10= 10 marks

2. **Section- B** contains 6 Very Short Answer Type Questions of 2 marks each to be answered in20 to 30 words. 2 x 6 = 12 marks

3. **Section – C** contains 6 Short Answer type questions of 4 marks each to be answered in 100to 150 words. 4x 6 = 24 marks

4. **Section - D** contains 3 Long Answer type questions of 8 marks each to be answered in 150to 200 words. (With Internal Choice) 8 x 3 = 24 marks

5. **Section – E** contains 1 Passage, having one question of 1 mark and two questions of 2 mark each to be answered in 20 to 30 = 5 marks

6. **Section – F** contains Map work of 5 marks.

   Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

Project Work: (Internal)   20 marks

For the purpose of project work, the following topics are suggested:
(i)   Sources of History of J&K.
(ii)   Food and clothing in J&K.
(iii)   Foundation of modern J&K 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.

Scheme of Evaluation for Project work as per following:

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 Mark
6.   Viva-Voce   04 Marks

BOOKS PRESCRIBED:

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

Maximum Marks: 100   Time: 3 Hours

Theory: 80 Marks   Project: 20 Marks

Units		Marks
Part A	**Introductory Microeconomics**	
	Introduction	04
	Consumer's Equilibrium and Demand	14
	Producer Behaviour and Supply	14
	Forms of Market and Price Determination under Perfect competition with simple applications	08
		40
Part B	**Introductory Macroeconomics**	
	National Income and Related Aggregates	10
	Money and Banking	06
	Aggregate Demand & Aggregate Supply	12
	Government Budget and the Economy	06
	Balance of Payments & International Institutions	06
	Theory Paper(40+40=80Marks)	**40**
Part C	**Project Work**	20

Part A: Introductory Microeconomics

Unit 01: Introduction
- Meaning of micro-economics and macro-economic; positive and normative economics.
- What is an economy? Central problems of an economy: what, how and for whom to produce; concepts of Production Possibility Frontier and Opportunity Cost.

Unit 02:   Consumer Equilibrium and Demand.

- 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 03: Producer Behaviour & Supply Meaning of Production Function–Short-Run and Long-Run
- Total product, Average Product and Marginal Product

Returns to a factor.

- Cost – Short run costs - Total Cost, Total Fixed Cost, Total Variable Cost; Average Cost; Average Fixed Cost, Average Variable Cost and Marginal Cost - meaning and their relationships
- Revenue–Total Revenue, Average Revenue and Marginal Revenue-meaning and their relationship.
- Producer's Equilibrium - meaning and its conditions in terms of Marginal Revenue-Marginal Cost approach
- Supply market supply, determinants of supply, supply schedule, supply curve and its slope, movements along and shifts in supply curve, price elasticity of supply; measurement of price elasticity of supply - percentage-change method.

Unit 04: Forms of Market and Price Determination.

- Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply. (Short Run Only)
- Simple Applications of Demand and Supply: Price ceiling, Price floor.

Part B: Introductory Macroeconomics

Unit5: National Income and Related Aggregates.

- What is macro-economics?
- Basic concepts in macroeconomics: consumption goods, capital goods, final goods, intermediate goods; stocks and flows; gross investment and depreciation.
- Circular flow of income (two sector model); Methods of calculating National Income –Value Added method, Expenditure and income methods
- Aggregates related to National Income:
- Gross National Product (GNP), Net National Product (NNP), Gross Domestic Product (GDP) and Net Domestic Product (NDP) - at market price, at factor cost; Real and Nominal GDP
- GDP Deflator, GDP and Welfare
-

Unit 6: Money and Banking.

- Money – meaning and functions, supply of money - Currency held by the public and net demand deposits held by commercial banks.
- Money creation by the commercial banking system.
- Central bank and its functions (example of Reserve Bank of India): Bank of issue, Govt. Bank, Bankers Bank, Control of Credit through Bank Rate, Cash Reserve Ratio (CRR), Statutory

Liquidity Ratio (SLR), Repo Rate and Reverse Repo Rate, Open Market Operations, Margin requirement.

Unit 7: Determination of Income and Employment.

- Aggregate demand and its components.
- Consumption Function- Meaning
- Propensity to consume and propensity to save (average and marginal)
- Short-run equilibrium output; investment multiplier and its mechanism.
- Meaning of full employment and involuntary unemployment.
- Problems of excess demand and deficient demand; measures to correct them - changes in government spending, taxes and money supply.

Unit 8: Government Budget and the Economy.
Government budget-meaning, objectives and components.

- Classification of receipts - revenue receipts and capital receipts; Classification of expenditure– revenue expenditure and capital expenditure

- Classification of expenditure–revenue expenditure and capital expenditure.
- Balanced, Surplus and Deficit Budget– measures of government deficit.

Unit9: Balance of Payments.

- Balance of payments account-meaning and components;
- Balance of payments–Surplus and Deficit
- Foreign exchange rate-meaning of fixed and flexible rates and managed floating
- Determination of exchange rate in a free market, Merits and

demerits of flexible and fixed exchange rate.

- Managed Floating exchange rate system

Scheme of assessment

Question paper contains four sections namely

1. **Section –A** contains 10 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x10= 10 marks
2. **Section- B** contains 10 Very Short Answer Type Questions of 2 marks each to be answered in20 to 30 words. 2 x 10 = 20 marks
3. **Section – C** contains 8 Short Answer type questions of 4 marks each to be answered in 100 to 150 words. (With Internal Choice) 4x 8 = 32 marks
4. **Section - D** contains 3 Long Answer type questions of 6 marks each to be answered in 150to 200 words. (With Internal Choice) 6 x 3 = 18 marks

Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

Part-C Project Work (Internal: 20 Marks)

The students will do the project on the themes, 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);

1. Industrial sector in Jammu and Kashmir economy (handicrafts, handlooms, and other micro small and medium enterprises)

2. Health sector of Jammu and Kashmir

3. Education sector of Jammu and Kashmir

4. Structure and analysis of Jammu and Kashmir Budget

5. Cashless Economy

6. Sustainable Development Goals.

Guidelines for Project Work

The objectives of the project work are to enable learners to

- Probe deeper into theoretical concepts learnt in classes XI and XII

- Analyse and evaluate real world economic scenarios using theoretical constructs and arguments
- Demonstrate the learning of economic theory
- Follow up aspects of economics in which learners have interest
- Develop the communication skills to argue logically
- The project work will be a mini study in to sensitize the students to inculcate research aptitude among students.

It is advisable to conduct the project work within the district. The students may do field visits/ industrial tours/ market visits, etc.

The expectations of the project work are that:

- The teacher will divide the students in groups. Each group will comprise five students or less depending on the number of students in the classroom. Separate topics shall be assigned to each group.
- Learners will complete only ONE project in each academic session.
- Project should be of 2500-5000 words (excluding diagrams & graphs) neatly typed on A4 format

The learners will maintain a proper reference and bibliography

Role of the teacher:

The teacher plays a critical role in developing thinking skills based on objectives, research methodology, collection of data etc. of the learners. Besides a teacher should:

- Help each learner select the topic based on recently published extracts from the news media, government policies, RBI bulletin, NITI Aayog reports, IMF/World Bank reports etc., after detailed discussions and deliberations of the topic
- Play the role of a facilitator and supervisor to monitor the project work of the Learner through regular discussions and presentations.
- Guide the research work in terms of sources for the relevant data
- Educate learner about plagiarism and the importance of quoting the source of the information to ensure authenticity of research

work

- Prepare the learner for the presentation of the project work
- Arrange a presentation of the project file
- The teacher will narrow down the scope and the practicability of the project work in accordance with the research objectives and questions of the study.
- The teacher will sensitise the learners regarding MLA and APA referencing style

Format of the project:

Learners may work up on the following steps as a suggested below:

1. Choose a title/topic
2. Research design
3. Research objectives/ questions
4. Methodology
5. Sampling
6. Data collection technique
7. Analysis of data
8. Presentation and interpretation of data
9. Draw the relevant conclusion
10. Future scope of the study.

Expected Checklist:

- Introduction of topic/title
- Identifying the causes, consequences and/or remedies
- Various stakeholders and effect on each of them
- Advantages and disadvantages of situations or issues identified
- Short-term and long-term implications of economic strategies suggested in the course of research
- Validity, reliability, appropriateness and relevance of data used for research work and for presentation in the project file

- Presentation and writing that is succinct and coherent in project file
- Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.

Mode of presentation/submission of the Project:

At the beginning, middle and end of the project work, learners/ groups will present their research topic, introduction, objectives, methodology, etc. in the form of power point presentations and incorporate all relevant suggestions in the final Project File to be submitted to the teacher/internal examiner. The objective of presenting the work is to learn from feedback, suggestions, etc. and engage in thorough and meaningful discussions to develop critical thinking and better insight. The Internal Examiner should ensure that the study submitted by the learner is his/her own original work. In case of any doubt, authenticity should be checked and verified.

Distribution of Marks:

1.Project work		15 marks
(i)	Statement of problem	03 marks
(ii)	Methodology	04 marks
(iii)	Data analysis	04 marks
(iv)	Conclusion	02 marks
(v)	References	02 marks
2.Viva-Voce based on the Project work		03 marks
3. Attendance		02 marks

BOOKS PRESCRIBED:

1. *Introductory Microeconomics by NCERT, New Delhi.*
2. *Introductory Macroeconomics by NCERT, New Delhi*

GEOGRAPHY

Maximum Marks: 100   Theory: 70 Marks
Practicals: 30 Marks   Time: 3 Hours

Unit I: Human Geography: Nature and Scope   Marks03

Unit II: People.   Marks06
- Population of the world–distribution, density and growth.
- Population change–spatial patterns and structure, determinants of population change.
- Human development–concept, selected indicator, international comparisons.

Unit III: Human Activities.   Marks12
- 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.   Marks12
- 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 cyberspace,
- International trade–Basis and changing patterns; ports as gateways of international trade, role of WTO in International trade.

Unit V: Map work on identification of features based on above units on the Outline political map of world.   Marks 02

India- People and Economy

Unit VI: People.   Marks 05

- Population–distribution, density and growth: composition of population: Linguistic, sex and religious; rural – urban population change through time – regional variations: occupations.

- Population, environment and development.

Unit VII: Human Settlements.   Marks 04
- Rural settlements–types and distribution.
- Urban settlements–types, distribution and functional classification.

Unit VIII: Resources and Development.   Marks10
- 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.
- Planning in India–target area planning (case study); idea of sustainable development (case study).

Unit IX: Transport, Communication and International Trade.   Marks 08
- Transport and communication–roads, railways, waterways and airways; oil and gas pipelines; national electric grids; communication networking – radio, television, satellite and internet.
- International trade – changing pattern of India's foreign trade; seaports and their hinterland and airports.

Unit X: Geographical Perspective on Selected Issues and Problems.   Marks 05
  (One case study to be introduced for each topic)
- Environmental pollution: urban–waste disposal.
- Urbanization–rural–urban migration; problem of slums;
- Land Degradation.

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

Scheme of assessment

Question paper contains four sections namely

1. **Section –A** contains 10 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x10= 10 marks

2. **Section- B** contains 9 Very Short Answer Type Questions of 2 marks each to be answered in 20 to 30 words. 2 x 9 = 18 marks

3. **Section – C** contains 9 Short Answer type questions of 3 marks each to be answered in 100 to 150 words. 3 x 9 = 27 marks

4. **Section - D** contains 3 Long Answer type questions of 5 marks each to be answered in 150 to 200 words. (With Internal Choice) 5 x 3 = 15 marks

Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

C. Practical Work.   Marks 30

Internal assessment: 10 marks

External assessment: 20 marks

Unit I: Processing of Data and Thematic Mapping.   Marks15
- 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 flow chart; thematic maps; construction of dot; choropleth and isopleth maps.

Practical Record Book and Viva–voce.   Marks 05

BOOKS PRESCRIBED:
1. *Fundamentals of Human Geography, Textbook of Class XII, Published by NCERT, New Delhi.*
2. *Practical work in Geography Part II, Textbook of Class XII, Published by NCERT, New Delhi.*
3. *India People and Economy, Textbook in Geography for Class XII, Published by NCERT, New Delhi.*

POLITICAL SCIENCE

M. Marks: 100 Marks   Time: 3 Hours
Theory: 80 Marks   Project: 20 Marks

Part A: Contemporary World Politics.

1. **Disintegration of the "Second World " and the Collapse of Bipolarity**.   Marks 06
New entities in world politic: Russia, Balkan states and Central Asian states. Introduction of democratic politics and capitalism in post – communist regimes. India's relation with Russia and other post – communist countries.

2. **Alternative Centres of Economic and Political Power.**   Marks 06

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

3. **South Asia in the Post – Cold War Era.**   Marks06

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.

4. **International Organizations in a Unipolar World.**   Marks 06
Restructuring and the future of the UN. India's position in the restructured UN. Rise of new international actors; New international economic organizations, NGO's. How democratic and accountable are the new institutions of global governance?

5. **Security in Contemporary World.**   Marks 06

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

6. **Globalization and its Critics.**   Marks 04

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

7. Environmental and Natural Resources in Global Politics. **Marks 06**

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.

8. Nation–Building and Its Problems. **Marks 06**

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

9. Era of One – Party Dominance. **Marks 04**

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.

10. Politics of Planned Development. **Marks 02**

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 fallouts.

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

Nehru's foreign policy. Sino–Indian war of1962, Indo–Pak war of 1965 and 1971. India's nuclear programme and shifting alliances in world politics.

12. 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''

13. Crisis of the Constitutional Order. **Marks 04**

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 organizations.

14. Regional Aspirations and Conflicts.   **Marks 06**

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

15. Recent Developments in Indian Politics.   **Marks 07**

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 governments.

Scheme of assessment

Question paper contains five sections namely

1. **Section –A** contains 10 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x10= 10 marks

2. **Section- B** contains 9 Very Short Answer Type Questions of 2 marks each to be answered in20 to 30 words. 2 x 9 = 18 marks

3. **Section – C** contains 7 Short Answer type questions of 4 marks each to be answered in 100 to 150 words. 4 x 7 = 28 marks

4. **Section - D** contains 1 Passage having three questions of 2 marks each to be answered in 20 to 30 words. 2 x 3 = 6 marks

5. **Section - E** contains 3 Long Answer type questions of 6 marks each to be answered in 150to 200 words. (With Internal Choice) 6 x 3 = 18 marks

    Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

Project work (Internal): 20 marks

List of Suggested Topics
1. Division of Germany with special focus on the construction and dismantling of the Berlin Wall.
2. CIS-Central Asian Republics
3. Disintegration of USSR with special focus on Gorbachev.
4. Arab Spring
5. Cover the negative as well as positive aspects of relationship between India and the following countries.
Focus on any one of the following (current updates should be highlighted):
a) Relationship between India and Russia
b) Relationship between India and China
c) Relationship between India and Pakistan
d) Relationship between India and Bangladesh

7. ASEAN
8. European Union and BREXIT
9. BRICS
10. SAARC
11. India's Nuclear Policy
12. United Nations with focus on India's candidature in Security Council.
13. UN Agencies – UNICEF, UNESCO, WHO
14. Pandemics: Covid 19- Its global impact (focus on worldwide cooperation and preparedness along with controversies (please collect newspaper clippings for the same)
15. Partition of India-Theory behind it and its legacy
16. Comparison between NITI AAYOG and Planning Commission and their contribution in India's Development.
17. Election 2019- Rise of BJP and Downfall of Congress (1989-2019).
18. Emergency – A blot on Indian Democracy
19. NDA III and NDA IV – Social and Economic welfare programmes.

Distribution of Marks
- Internal Project File   **10 Marks**
- Viva-Voce   **10 Marks**

BOOKS PRESCRIBED:
1. *Contemporary World Politics-A Published by NCERT New Delhi*
2. *Politics in India Since Independence, Published by NCERT New Delhi*

PSYCHOLOGY

Maximum Marks: 100   Time: 3 Hours
Theory: 70 Marks   Practicals: 30 Marks

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).   10 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-efficiency, self-regulation and techniques.
- Concept of Personality, theories of Personality (Trait and types, Psychoanalytic, Humanistic).
- Assessment of Personality: Self report measures, Projective techniques. 09 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.   08 marks

UNITIV: 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, behavioral, 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: Humanistic, Cognitive, Behavior, Yoga & Meditation.
- Rehabilitation of mentally ill patients.   **09 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 behavior.

- Nature and components of attitude, attitude–formation and change.
- Attribution
- Prejudice and discrimination, Strategies for handling prejudice.   **09 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 behavior, factors influencing group formation, types of groups.
- Social influence processes.   **07 marks**

UNIT VIII: 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.   **09 marks**

Scheme of assessment

Question paper contains four sections namely

1. **Section –A** contains 10 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x10= 10 marks

2. **Section- B** contains 9 Very Short Answer Type Questions of 2 marks each to be answered in 20 to 30 words. 2 x 9 = 18 marks

3. **Section – C** contains 9 Short Answer type questions of 3 marks each to be

answered in 100 to 150 words. 3 x 9 = 27 marks

4. **Section - D** contains 3 Long Answer type questions of 5 marks each to be answered in 150 to 200 words. (With Internal Choice) 5 x 3 = 15 marks

   Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

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, Stress and anxiety)
- **Distribution of Marks (External):**
  - (i) Case Profile: 03 marks
  - (ii) Practical File: 03 marks
  - (iii) Viva-Voce: 04 marks
  - (iv) Two Practicals   10 marks

BOOK PRESCRIBED:

1. *A textbook of Psychology for Class XII published by NCERT, New Delhi.*

SOCIOLOGY

Maximum Marks: 100   Time: 3 Hours
Theory: 80 Marks   Practicals: 20 Marks
                                                               Internal: 05
                                                               External: 15

INDIAN SOCIETY

Unit1: Introducing Indian Society   Non-Evaluative
- Unity in Diversity in India.
- Geographical, Cultural, Religious and Linguistic.
- Ethnic Composition of J&K.

Unit 2: Demography and Society   08 Marks
- 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.

Unit3: Social Institutions   08 Marks
- Family: Concept and Functions.
- Marriage: Concept and Types.
- Caste System: Concept, Characteristics, Change and Continuity.

Unit4: Social Inequality   08 Marks
- Meaning and Definition of Social Inequality.
- Tribals: Definition and Characteristics; Distribution; Marginalization of Tribal Communities.
- Religious Minorities.
- The Differently Abled.
- Struggle for Equality of Women.

Unit5: Challenges to National Integration   08 Marks
- Communalism.
- Regionalism.
- Casteism.
- Role of State: Constitutional and Legal Measures.

Unit6: Methodology   08 Marks
- 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.

SOCIAL CHANGE AND DEVELOPMENT IN INDIAN SOCIETY

Unit7: Processes of Social Change in India   08 Marks
- Modernization.
- ☐ Industrialization and Urbanization.
- ☐ Sanskritisation.
- ☐ Westernization.

Unit 8: Change and Development in Rural Society   08 Marks
- ☐ Rural Society: Meaning and Features.
- ☐ Land Reforms with Special Reference to J&K.
- ☐ Green Revolution: Significance and Adverse
- ☐ Effects. 73rd Amendment Act: Panchayati Raj Institution.

Unit 9: Globalization and Social Change   08 Marks
- ☐ Globalization: Meaning and
- ☐ Concept. Economic Globalization.
- ☐ Cultural
- ☐ Globalization.
  Political Globalization.

Unit 10: Mass Media and Society   08 Marks
- ☐ Mass Media: Concept and Classification.
- ☐ Role of Mass Media in Modern India (Environmental protection, Gender Health Sensitisation, Education)
- ☐ Social Media: Emergence, Merits and Demerits.

Unit 11: Social Movements   08 Marks
- ☐ Class Movement: Peasant Movement (Meaning, Impact and
- ☐ Trends). Caste Movement: Dalit movement (Meaning, Impact
- ☐ and Trends).
  Environmental Movement: Meaning, Impact and Trends (Chipkoo Movement).

Scheme of assessment

Question paper contains four sections namely

1. **Section –A** contains 10 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x10= 10 marks

2. **Section- B** contains 10 Very Short Answer Type Questions of 2 marks each to be answered in20 to 30 words. 2 x 10 = 20 marks

3. **Section – C** contains 8 Short Answer type questions of 4 marks each to be answered in 100 to 150 words. 4x 8 = 32 marks

4. **Section - D** contains 3 Long Answer type questions of 6 marks each to be

answered in 150 to 200 words. (With Internal Choice) 6 x 3 = 18 marks

Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

Practical Examination		Max. Marks: 20

Time Allotted: 3 Hours External: 15 Marks Internal: 5 Marks

INTERNAL:
A. Project (undertaken during the academic year at school level) 5 marks

I.	Statement of the Problem	1½marks
II.	Methodology/Technique	1½marks
III.	Conclusion	2 marks

EXTERNAL:

B.	Viva–based on the project work		5 marks
C.	Research Design		10 marks
	a.	Overall format	2 marks
	b.	Research Questions	2 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.

BOOKS PRESCRIBED:
- *A Textbook of Indian Society for Class XII Published by NCERT, New Delhi.*
- *Social Change and Development in India for Class XII Published by NCERT, New Delhi.*

Note: List of Deleted Topics from the prescribed books is placed at the end of the syllabus

MATHEMATICS

Theory: Marks 80
Project Work: 20 Marks

Time Allowed: 3 hrs.

I.	RELATIONS AND FUNCTIONS	Marks 08
II.	ALGEBRA	Marks 10
III.	CALCULUS	Marks 35
IV.	VECTORS AND THREE–DIMENSIONAL GEOMETRY	Marks 14
V.	LINEAR PROGRAMMING	Marks 05
VI.	PROBABILITY	Marks 08

UNIT I. RELATIONS AND FUNCTIONS.

1. Relations and Functions:
Types of Relations: Reflexive, symmetric, transitive and equivalence relations. One to one and onto Functions.

2. Inverse Trigonometric Functions:
Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions.

UNIT II. ALGEBRA

1. Matrices.
Concept, notation, order, equality, types of matrices, zero matrix, identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on 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). 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 (upto 3 x 3 matrices), 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.

UNIT III: CALCULUS

1. Continuity and Differentiability.

Continuity and differentiability, chain rule, derivatives of inverse trigonometric functions like $\sin^{-1}x$, $\cos^{-1}x$ and $\tan^{-1}x$, derivate of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.

2. Applications of Derivatives.

Applications of derivatives: rate of change of quantities, increasing/decreasing functions, 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. Evaluation of simple integrals of the following types and problem based on them to be evaluated.

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

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

$$\int \sqrt{ax^2 + bx + c} \, dx,$$

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, circles/parabolas / ellipses (in standard form only)

5. Differentia l Equations.

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

dy/dx +py=q, where p and q are functions of x or constants.
dx/dy+px=q, where p and q are functions of y or constants

UNIT IV: VECTORS AND THREE–DIMENSIONAL GEOMERTY

1. Vectors.

Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. 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 Cosines and direction ratios of a vector.

vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of Scalar (dot) product of vectors. Vector (cross) product of vectors.

2. Three–dimensional Geometry.

Direction cosines and direction ratios of a line joining two points. Cartesian and vector equation of a line, skew lines, shortest distance between two lines. Angle between the two lines.

UNIT V: LINEAR PROGRAMMING

1. Linear Programming.

Introduction, related terminology such as constraints, objective function, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions (**Bounded or Unbounded**), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

UNITVI: PROBABILITY

1. Probability.

Multiplication theorem on probability. Conditional probability, independent events, total probability. Baye's Theorem, Random variable and its probability distribution, mean of random variable.

Scheme of assessment

Question paper contains four sections namely

1. **Section –A** contains 10 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x10= 10 marks

2. **Section- B** contains 10 Very Short Answer Type Questions of 2 marks each. 2 x 10 = 20 marks

3. **Section – C** contains 8 Short Answer type questions of 4 marks each. 4x 8 = 32 marks

4. **Section - D** contains 3 Long Answer type questions of 6 marks each. (With Internal Choice) 6 x 3 = 18 marks

Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

INTERNAL ASSESSMENT	20 MARKS
Periodic Tests (Best 2 out of 3 tests conducted)	10 Marks
Mathematics Activities	10 Marks

Note: For activities NCERT Lab Manual may be referred.

Conduct of Periodic Tests:

Periodic Test is a Pen and Paper assessment which is to be conducted by the respective subject teacher. The format of periodic test must have questions items with a balance mix, such as, very short answer (VSA), short answer (SA) and long answer (LA) to effectively assess the knowledge, understanding, application, skills, analysis, evaluation and synthesis. Depending on the nature of subject, the subject teacher will have the liberty of incorporating any other types of questions too. The modalities of the PT are as follows:

a) **Mode:** The periodic testis to be taken in the form of pen-paper test.

b) **Schedule:** In the entire Academic Year, three Periodic Tests in Mathematics subject may be conducted as follows:

Test	Pre-Mid-term (PT-I)	Mid-Term (PT-II)	Post Mid-Term (PT-III)
Tentative Month	July-August	November	December-January

This is only a suggestive schedule and schools may conduct periodic tests as per their convenience. The winter bound schools would develop their own schedule with similar time gaps between two consecutive tests.

c) **Average of Marks**: Once schools complete the conduct of all the three periodic tests, they will convert the Weightage of each of the three tests into ten marks each for identifying best two tests. The best two will be taken into consideration and the average of the two shall be taken as the final marks for PT.

d) The school will ensure simple documentation to keep a record of performance.

e) Sharing of Feedback/Performance: The students' achievement in each test must be shared with the students and their parents to give them an overview of the level of learning that has taken place during different periods. Feedback will help parents formulate interventions (conducive ambience, support materials, motivation and morale-boosting) to further enhance learning. A teacher, while sharing the feedback with student or parent, should be empathetic, non- judgmental and motivating

a) Assessment of Activity Work: Throughout the year activities shall be performed by the students from the activities given in the NCERT Laboratory Manual for the respective class (XI or XII). A record of the same may be kept by the student. A year end test on the activity may be conducted.

The Weightage are as under:

- The activities performed by the student throughout the year and record keeping: 5 marks
- Assessment of the activity performed during the year end test:3 marks
- Viva-voce: 2 marks

BOOKS PRESCRIBED:

1) *Mathematics Part-I Textbook for Class XII, NCERT Publication*
2) *Mathematics Part-II Textbook for Class XII, NCERT Publication*
3) *Mathematics Lab Manual Class XII, published by NCERT*

PHYSICS

Max.Marks:100

Theory: 70 Marks

Time Allowed: 3hrs

Practicals: 30 Marks

Unit I: Electrostatics   09 marks

Electric Charges and Fields

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 a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

Electrostatic Potential and Capacitance

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two-point charges and of electric dipole in an electrostatic field. Conductors 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 (no derivation, formulae only).

Unit II: Current Electricity   07 marks

Current Electricity

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, temperature dependence of resistance, Internal resistance of a cell, potential difference and emf of a cell, Kirchhoff's rules, Wheatstone bridge.

Unit III: Magnetic Effects of Current and Magnetism   09 marks

Moving Charges 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 infinitely long straight

wire. Straight solenoid (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields. 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; Current loop as a magnetic dipole and its magnetic dipole moment, moving coil galvanometer- its current sensitivity and conversion to ammeter and voltmeter.

Magnetism and Matter

Bar magnet, bar magnet as an equivalent solenoid (qualitative treatment only), magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis (qualitative treatment only), torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines. Magnetic properties of materials- Para-, dia- and ferro - magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties.

Unit IV: Electromagnetic Induction and Alternating Currents 09 marks

Electromagnetic Induction

Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction.

Alternating Current

Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LCR series circuit (phasors only), resonance, power in AC circuits, power factor, wattless current. AC generator, Transformer.

Unit V: Electromagnetic waves 03 marks

Electromagnetic Waves

Basic idea of displacement current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.

Unit VI: Optics 14 marks

Ray Optics and Optical Instruments

Ray Optics: Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses

in contact, refraction of light through a prism. Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.

Wave Optics

Wave optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width (No derivation final expression only), coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima (qualitative treatment only).

Unit VII: Dual Nature of Radiation and Matter   04 marks
Dual Nature of Radiation and Matter

Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Experimental study of photoelectric effect Matter waves-wave nature of particles, de-Broglie relation.

Unit VIII: Atoms and Nuclei   08 marks
Atoms

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of nth possible orbit, velocity and energy of electron in nth orbit, hydrogen line spectra (qualitative treatment only).

Nuclei

Composition and size of nucleus, nuclear force Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.

Unit IX: Electronic Devices   07 marks
Semiconductor Electronics

Materials, Devices and Simple Circuits Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier.

Scheme of assessment

Question paper contains four sections namely

1. **Section –A** contains 10 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x10= 10 marks

2. **Section- B** contains 9 Very Short Answer Type Questions of 2 marks each to be answered in 20 to 30 words. 2 x 9 = 18 marks

3. **Section – C** contains 9 Short Answer type questions of 3 marks each to be answered in 100 to 150 words. 3 x 9 = 27 marks

4. **Section - D** contains 3 Long Answer type questions of 5 marks each to be answered in 150 to 200 words. (With Internal Choice) 5 x 3 = 15 marks

   Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

PRACTICALS   **Maximum Marks: 30**
Time: 03 Hours   **External: 20 Marks/ Internal: 10 Marks**

The record, to be submitted by the students, at the time of their annual examination, has to include:

• Record of at least 8 Experiments [with 4 from each section], to be performed by the students.

• Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.

• Report of the project carried out by the students.

Experiments
SECTION–A

1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current.

2. To find resistance of a given wire / standard resistor using metre bridge.

3. To verify the laws of combination (series) of resistances using a metre bridge.

OR

To verify the laws of combination (parallel) of resistances using a metre bridge.

4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.

5. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.

OR

To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.

6. To find the frequency of AC mains with a sonometer.

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 multimeter.

3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.

4. To assemble the components of a given electrical circuit.

5. To study the variation in potential drop with length of a wire for a steady current.

6. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

SECTION-B

Experiments

1. To find the value of v for different values of u in case of a concave mirror and to find the focal length.

2. To find the focal length of a convex mirror, using a convex lens.

3. To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v.

4. To find the focal length of a concave lens, using a convex lens.

5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.

6. To determine refractive index of a glass slab using a travelling microscope.

7. To find the refractive index of a liquid using convex lens and plane mirror.

8. To find the refractive index of a liquid using a concave mirror and a plane mirror.

9. To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.

Activities

1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.

2. Use of multimeter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order.

3. To study effect of intensity of light (by varying distance of the source) on an LDR.

4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.

5. To observe diffraction of light due to a thin slit.

6. To study the nature and size of the image formed by a

 (i) Convex lens, or

 (ii) Concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).

7. To obtain a lens combination with the specified focal length by using two lenses from the given set of Lenses.

Suggested Investigatory Projects

1. To study various factors on which the internal resistance/EMF of a cell depends.

2. To study the variations in current flowing in a circuit containing an LDR because of a variation in

(a) the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance).

(b) the distance of a incandescent lamp (of fixed power) used to 'illuminate' the LDR.

 3. To find the refractive indices of

(a) Water

(b) Oil (transparent) using a plane mirror, an equiconvex lens (made from a glass of known refractive index) and an adjustable object needle.

4. To investigate the relation between the ratio of

(i) Output and input voltage and

(ii) Number of turns in the secondary coil and primary coil of a self-designed transformer.

5. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.

6. To estimate the charge induced on each one of the two identical Styrofoam (or pith)

balls suspended in a Vertical plane by making use of Coulomb's law.

7. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/ (bulb) in a circuit fed up by an A.C. source of adjustable frequency.

8. To study the earth's magnetic field using a compass needle -bar magnet by plotting magnetic field lines and tangent galvanometer.

Practical Examination for Visually Impaired Students

Evaluation Scheme   Time 2 hours

Max. Marks: 30

General Guidelines

◦ The practical examination will be of two-hour duration.

◦ A separate list of ten experiments is included here.

◦ The written examination in practical for these students will be conducted at the time of practical examination of all other students.

◦ The written test will be of 30 minutes duration.

◦ The question paper given to the students should be legibly typed. It should contain a total of 15 practical skill based very short answer type questions. A student would be required to answer any 10 questions.

◦ A writer may be allowed to such students as per CBSE examination rules.

◦ All questions included in the question papers should be related to the listed practicals. Every question

should require about two minutes to be answered. These students are also required to maintain a practical file.

◦ A student is expected to record at least five of the listed experiments as per the specific instructions for each subject.

◦ These practical should be duly checked and signed by the internal examiner.

◦ The format of writing any experiment in the practical file should include aim, apparatus required, simple theory, procedure, related practical skills, precautions etc.

◦ Questions may be generated jointly by the external/internal examiners and used for assessment. The Viva Questions may include questions based on basic theory/principle/concept, apparatus/ Materials/chemicals required procedure, precautions, sources of error etc.

BOOK PRESCRIBED:

1. *A Textbook of Physics for class XII published by NCERT, New Delhi*

CHEMISTRY

Max.Marks:100   Time Allowed: 3 hrs
Theory: 70 Marks   Practicals: 30 Marks

Unit-I: SOLUTIONS   07 Marks

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-II: ELECTROCHEMISTRY   09 Marks

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-III: CHEMICAL KINETICS   07 Marks

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-IV: d and f-BLOCK ELEMENTS   07 Marks

General introduction, electronic configuration, occurrence and characteristics of the transition meals, 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- V: CO-ORDINATION COMPOUNDS   07 Marks

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-VI: HALOALKANES AND HALOARENES   06 Marks

Haloalkanes: Nomenclature, nature of C-X bond, physical & chemical properties, mechanism of substitution reactions. Stability of carbocations, R-S and d-1 configurations

Haloarenes: Nature of C-X bond, substitution reactions (directive influence of halogens for mono substituted compounds only), Stability of carbocations, R-S and D-L configurations Uses and environmental effects of-dichloromethane, trichloromethane, tetrachloromethane, iodoform, freon, and DDT

Unit- VII: ALCOHOLS, PHENOLS AND ETHERS   06 Marks

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, electrophillic substitution reactions, uses of phenols.

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

UNIT-VIII: ALDEHYDES, KETONES AND CARBOXYLIC ACIDS   08 Marks

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-IX: ORGANIC COMPOUNDS CONTAINING NITROGEN   06 Marks

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 aesthetic organic chemistry

UNIT-X: BIOMOLECULES   07 Marks

Carbohydrates: Classification (aldoses and ketoses), mono saccharides: 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, etary and qualemary structure of proteins (Qualitative idea only), denaturation of proteins; enzymes, lips &harmones, 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.

Scheme of assessment

Question paper contains four sections namely

1. **Section –A** contains 10 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x10= 10 marks

2. **Section- B** contains 9 Very Short Answer Type Questions of 2 marks each to be answered in 20 to 30 words. 2 x 9 = 18 marks

3. **Section – C** contains 9 Short Answer type questions of 3 marks each to be answered in 100 to 150 words. 3 x 9 = 27 marks

4. **Section - D** contains 3 Long Answer type questions of 5 marks each to be answered in 150 to 200 words. (With Internal Choice) 5 x 3 = 15 marks

   Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

PRACTICALS

Internal: 10   External: 20

Evaluation Scheme for Practical Examination: (External)

Volumetric analysis   06 marks

Salt Analysis   06 marks

Content based experiment   04 marks

Class record, Project work and viva   04 marks

                                                              Total =20 marks

A. 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 (KIO_3) and sodium sulphite (Na_2SO_3) using starch solution as Indicator (clok reaction).

B. THERMODYNAMICS

Any one of the following experiments:

i)Enthalpy of dissolution of $CuSO_4$ or KNO_3

ii) Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH).

iii) Determination of enthalpy change during interaction (Hydrogen bond formation) between acetone &chloroform.

C. ELECTRO CHEMISTRY

i) Variation of cell potential in Zn/Zn^{2+} // Cu^{2+} /Cu with change in concentration of electrolytes ($CuSO_4$ or $ZnSO_4$) at room temperature.

D. PREPARATION OF INORGANIC COMPOUNDS

i) Preparation of double salt of ferrous ammonium sulphate or potash alum.

ii) Preparation of potassium ferric oxalate.

E. TEST FOR THE FUNCTIONAL GROUPS PRESENT IN ORANIC COMPOUNDS

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

F. Study of carbohydrates, fats and proteins in pure form and detection of their presence in given Foodstuffs.

G. Determination of concentration/ molarity of $KMnO_4$ solution by titrating it against a

standard solution of:

i) Oxalic acid

ii) Ferrous ammonium sulphate.

H. Qualitative Analysis

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

Cations: Pb^{2+} Cu^{2+}, As^{3+}, Al^{3+}, Fe^{3+}, Mn^{2+}, Zn^{2+}, Ni^{2+}, Co^{2+}, Ca^{2+}, Sr^{2+}, Ba^{2+}, Mg^{2+}, NH_4^+

Anions: CO_3^{2-}, S^{2-}, SO_3^{2-}, SO_4^{2-}, NO_2^-, NO_3^-, Cl^-, Br^-, I^-, PO_4^{3-}, $C_2O_4^{2-}$, CH_3COO^-

PROJECT WORK

Wherever feasible may include:

1) Model Preparation

2) Investigatory Project

• Determine the oxalate content of Guava fruit at different stages of ripening.

• To determine the amount of casein present in different samples of milk from different sources.

• Preparation of soybean milk and its comparison with the natural milk.

• Study of the effect of Potassium Bisulphate as food preservative under various conditions (temperature, Concentration, time, etc.)

• Comparative study of the rate of fermentation of following materials: wheat flour, gram flour, potato juice, Carrot juice, etc.

• Study of insecticides and pesticides in various fruits and vegetables.

• To determine the presence of adulterants in common foods such as oil, butter, sugar, turmeric powder, chilli powder, rice, pepper.

• Prevetion of rusting of iron by using cathode protection method.

3) Science Exhibits.

4) Participation in Science Fairs

BOOK PRESCRIBED:

1. *Textbook of Chemistry for class XII published by NCERT, New Delhi*

BIOLOGY

Maximum Marks: 100   Theory Marks: 70
Practical Marks: 30   Time: 3 Hours

SECTION A (Botany)   Marks: 35

Unit-I Reproduction in Flowering Plants   Marks: 07

Sexual Reproduction: Flower structure; Development of male and female gametophytes; Pollination - types, agencies and examples; Out breeding devices; Pollen-Pistil interactions; Double fertilization; Post fertilization events - Development of Endosperm, embryo; Development of seed and formation of fruit; special modes - apomixis, parthenocarpy, polyembryony; Significance of seed and fruit formation.

Unit-II Genetics   Marks: 09

Heredity and variation Mendelian inheritance; deviations from Mendelism: Incomplete Dominance; Co-dominance; Multiple alleles and inheritance of blood groups; Pleiotropy; Elementary idea of polygenic inheritance; Chromosomal theory of Inheritance; Chromosomes and genes.

Molecular Basis of Inheritance: Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central Dogma; Protein Biosynthesis: Transcription, genetic code, translation; Gene expression and regulation - lac Operon.

Unit-III Biology and Human Welfare   Marks: 07

Tissue Culture: Cellular totipotency, technique and application of tissue culture.

Microbes in Human welfare: Microbes in food processing, industrial production, sewage treatment, energy generation (Biogas) and microbes as bio-control agents, Biopesticides and Bio-fertilizers. Antibiotics; production and judicious use.

Application of Biotechnology in Agriculture: Genetically Modified organisms - BT crops; Biopiracy and patents.

Unit-IV: Ecology and Environment   Marks: 12

Populations: Population attributes and Population growth; Population interactions -

mutualism, competition, predation, parasitism; population attributes - growth, birth rate and death rate, age distribution.

Ecosystems: Patterns, components; productivity and decomposition; energy flow; Ecological pyramids: Pyramids of number, biomass and energy.

Biodiversity and its Conservation: Biodiversity-Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book; Biosphere reserves, National parks, Wildlife Sanctuaries and Ramsar sites.

SECTION B (Zoology)   Marks: 35

Unit I: Reproduction in Animals   **Marks: 11**

Human Reproduction: Male and Female reproductive systems; Microscopic anatomy of testis and ovary; Gametogenesis (spermatogenesis and oogenesis; menstrual cycle). Fertilisation, embryo development upto blastocyst formation, implantation; Pregnancy and placenta formation. Elementary idea of Parturition and Lactation.

Reproductive Health: Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); Birth control – need and methods, Contraception and Medical Termination of Pregnancy (MTP); Amniocentesis; Infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary idea for general awareness)
.

Unit II: Genetics and Evolution   **Marks: 12**

Sex determination – in humans, birds and honey bee; Linkage and Crossing over.

Sex linked inheritance: Haemophilia and colour blindness.

Mendelian disorders in humans – Thalassemia; Chromosomal disorders in humans: Down's syndrome, Turner's syndrome and Klinefelter's syndrome

Genome and Human genome project; DNA fingerprinting.

Evolution: Origin of life; Biological evolution and evidences for biological evolution; Darwin's contribution, Modern synthetic theory of Evolution; Mechanism of evolution - Variation (Mutation and Recombination) and Natural Selection with examples, types of natural selection; Gene flow and genetic drift; Hardy - Weinberg's principle; adaptive radiation; Human evolution.

UNIT: III Biology in Human Welfare   **Marks: 07**

Health and Disease: Basic concepts of immunology - vaccines; Pathogens; parasites causing human diseases (Hepatitis, Malaria, Dengue, Filariasis, Ascariasis, Typhoid, Pneumonia, Common cold, Amoebiasis, Ring worm) and their control; Cancer, HIV and AIDS; **Adolescence**: drug and alcohol abuse.

UNIT: IV Biotechnology and its Applications   Marks: 05

Biotechnology: Principles and processes; Genetic Engineering (Recombinant DNA Technology).

Application of biotechnology in health: Human insulin and vaccine production stem cell technology, gene therapy. Transgenic Animals.

Bio-safety issues.

Scheme of assessment
BOTANY

Question paper contains four sections namely

1. **Section –A** contains 5 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x 5= 5 marks

2. **Section- B** contains 5 Very Short Answer Type Questions of 2 marks each to be answered in20 to 30 words. 2 x 5 = 10 marks

3. **Section – C** contains 5 Short Answer type questions of 3 marks each to be answered in 100 to 150 words. 3 x 5 = 15 marks

4. **Section - D** contains 1 Long Answer type question of 5 marks each to be answered in 150to 200 words. (With Internal Choice) 5 x 1 = 5 marks

   Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

ZOOLOGY

Question paper contains four sections namely

1. **Section –A** contains 5 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x 5= 5 marks

2. **Section- B** contains 5 Very Short Answer Type Questions of 2 marks each to be answered in20 to 30 words. 2 x 5 = 10 marks

3. **Section – C** contains 5 Short Answer type questions of 3 marks each to be

answered in 100 to 150 words. 3 x 5 = 15 marks

4. **Section - D** contains 1 Long Answer type question of 5 marks each to be answered in 150 to 200 words. (With Internal Choice) 5 x 1 = 5 marks

Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

PRACTICALS   Maximum Marks: 30
Time: 03 Hours   External: 20 Marks/ Internal: 10 Marks

SECTION A: BOTANY

Max. Marks: 15

A. List of Experiments
1. Study pollen germination on a slide.
2. Collect soil samples from at least two different sites and study them for texture, moisture content, pH and water holding capacity. Correlate with the kinds of plants found in them.
3. Study the presence of suspended particulate matter in air at two widely different sites.
4. Study of plant population density by Quadrant method.
5. Study of plant population frequency by Quadrant method

B. Observation/ Spotting

1. Study of flowers adapted to pollination by the agencies of wind and insects.

2. Study pollen germination on stigma through a permanent slide.

3. Study Mendelian inheritance using seeds of different colours/ size of any plant.

4. Exercise on controlled pollination – Emasculation, tagging and bagging.

5. Study two plants found in xerophytic conditions. Comment upon their morphological adaptations.

6. Study plants found in aquatic conditions. Comment upon their morphological adaptations.

SECTION B: ZOOLOGY

Max. Marks: 15

A. List of Experiments
1. Collect water samples from two different water bodies around you and study them for pH, clarity and presence of any living organisms.
2. Prepare a temporary mount of onion root tip to study mitosis.
3. To study the effect of different temperatures and three different pHs on the activity of salivary amylase on starch.

B. Observation/ Spotting

1. Identification of stages of gamete development i.e. T.S. testis and T.S. ovary through permanent slides (from any mammal).
2. Study the T.S. of blastula through permanent slides.
3. Study prepared pedigree charts of genetic traits such as rolling of tongue, blood groups, widow's peak, colour blindness.
4. Identification of common disease-causing organisms like *Ascaris, Entamoeba, Plasmodium,* ringworm through permanent slides or specimens. Comment on symptoms of diseases that they cause.
5. Study two different animals found in xerophytic conditions. Comment upon their morphological adaptations.
6. Study animals found in aquatic conditions. Comment upon their morphological adaptations.

BOOK PRESCRIBED:

1. *A textbook of Biology for class XII published by NCERT, New Delhi.*

BUSINESS STUDIES

Maximum marks:100 Marks   Time: 3 hrs

Theory: 80 Marks   Project Work: 20 Marks

Part A: Principles and Functions of Management

Unit I: Nature and Significance of Management   Marks: 07

- Management–concept, objectives, importance.
- Nature of management; Management as Science, Art, Profession.
- Levels of management–top, middle supervisory (First level).
- Management functions–planning, organising, staffing, directing and controlling.
- Coordination–nature and importance.

Unit II: Principles of Management   Marks: 06

- Principles of Management–meaning, nature and significance.
- Fayol's principles of management.
- Taylor's Scientific Management–Principles and Techniques.

Unit III: Business Environment   Marks: 03

- Business Environment–meaning and importance.
- Dimensions of Business Environment–Economic, Social, Technological, Political and Legal.
- Economic Environment in India.

Unit IV: Planning   Marks: 07

- Meaning, features, importance, limitations.
- Planning process.
- Types of Plans–Objectives, Strategy, Policy, Procedure, Method, Rule, Budget, Programme.

Unit V: Organising   Marks: 07

- Meaning and importance.
- Steps in the process of organising.
- Structure of organization–functional and divisional.
- Formal and informal organisation.
- Delegation: meaning elements and importance.
- Decentralization: meaning and importance.

- Difference between delegation and decentralization.

Unit VI: Staffing   Marks: 08

- Meaning, need and importance of staffing.
- Staffing as a part of Human Resources Management.
- Steps in staffing process.
- Recruitment–meaning and sources.
- Selection–meaning and process.
- Training and Development–meaning, need, methods– on the job and off the job methods of training.

Unit VII: Directing   Marks: 08

- Meaning, importance and principles.
- Elements of Direction:
    - Supervision–meaning and importance
    - Motivation–meaning and importance, Maslow's hierarchy of needs; Financial and non-financial incentives.
    - Leadership–meaning, importance;
    - Communication meaning and importance, formal and informal communication; barriers to effective communication.

Unit VIII: Controlling   Marks: 04

- Meaning and importance.
- Relationship between planning and controlling.
- Steps in the process of control.

Part B: Business Finance & Marketing

Unit IX: Business Finance   Marks: 10

- Business finance–meaning, role, objectives of financial management.
- Financial Decisions; factors affecting
- Financial planning–meaning and importance.
- Capital Structure–meaning and factors.
- Fixed and Working Capital–meaning and factors affecting their requirements.

Unit X: Marketing Management   Marks: 14

- Marketing–meaning, functions, role.
- Distinction between marketing and selling.
- Marketing mix–concept and elements:

- Product–nature, classification, branding, labeling and packaging
- Price: factors influencing pricing
- Physical distribution: meaning, role; Channels of distribution–meaning, types, factors, determining choice of channels.
- Promotion–meaning and role, promotion mix, Role of Advertising and personal selling; objections to Advertising.
- Personal Selling-Concept, Importance,
- Sales Promotion-Merits, limitation, methods.
- Publicity-Concept &Role.

Unit XI: Consumer Protection   **Marks: 06**

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

Scheme of assessment

Question paper contains five sections namely

1. **Section –A** contains 8 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x 8 = 8 marks

2. **Section- B** contains 4 Short Answer Type Questions of 3 marks each to be answered in 20 to 30 words. 3 x 4 = 12 marks

3. **Section – C** contains 5 Short Answer type questions of 4 marks each to be answered in 100 to 150 words. 4 x 5 = 20 marks

4. **Section - D** contains 4 Long Answer type questions of 6 marks each to be answered in 150 to 200 words. (With Internal Choice) 6 x 4 = 24 marks

5. **Section – E** contains 2 Long Answer type questions of 8 marks each to be answered in 150 to 200 words. (With Internal Choice) 8 x 2 = 16 marks

Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

PROJECT WORK IN BUSINESS STUDIES

Introduction

The course in Business Studies is introduced at Senior School level to provide students with a sound understanding of the principles and practices bearing in business (trade and industry) as well as their relationship with the society. Business is a dynamic process that brings together technology, natural resources and human initiative in a constantly changing global environment. With the purpose to help them understand the framework within which a business operates, and its interaction with the social, economic, technological and legal environment, the CBSE has introduced Project Work in the Business Studies Syllabus for Classes XII. The projects have been designed to allow students to appreciate that business is an integral component of society and help them develop an understanding of the social and ethical issues concerning them.

The project work also aims to empower the teacher to relate all the concepts with what is happening around the world and the student's surroundings, making them appear more clear and contextual. This will enable the student to enjoy studies and use his free time effectively in observing what's happening around.

By means of Project Work the students are exposed to life beyond textbooks giving them opportunities to refer materials, gather information, analyze it further to obtain relevant information and decide what matter to keep.

Objectives

After doing the Project Work in Business Studies, the students will be able to do the following:

- Develop a practical approach by using modern technologies in the field of business and management;
- get an opportunity for exposure to the operational environment in the field of business management and related services;
- inculcate important skills of teamwork, problem solving, time management, information collection, processing, analysing and synthesizing relevant information to derive meaningful conclusions
- get involved in the process of research work; demonstrate his or her capabilities while working independently and
- Make studies an enjoyable experience to cherish.

GUIDELINES FOR TEACHERS

Students are supposed to select one unit out of four and are required to make only **ONE project** from the selected unit. (Consist of one project of 20marks)

1. Help students to select any ONE Topic for the entire year.
2. The topic should be assigned after discussion with the student in the class and

should then be discussed at every stage of the submission of the project. The teacher should play the role of a facilitator and should closely supervise the process of project completion. The teachers must ensure that the project workassignedtothestudentswhetherindividuallyoringrouparediscussedatdiffer ent stages right from assignment to drafts review and finalization. Students should be facilitated in terms of providing relevant materials or suggesting websites, or obtaining required permissions from business houses, malls etc for their project. The periods assigned to the Project Work should be suitably spaced throughout the academic session. The teachers MUST ensure that the student actually go through the rigors and enjoy the process of doing the project rather than depending on any readymade material available outside.

3. The students must make a presentation of the project before the class.
4. The teachers must ensure that the student's self-esteem and creativity is enhanced and both the teacher and the student enjoy this process.
5. The teachers should feel pride in the fact that they have explored the different dimensions of the project in an innovative way and their students have put in genuine work

I. Project One: Elements of Business Environment

The teachers should help the students in selecting any one element of the following:

1. Changes witnessed over the last few years on mode of packaging and its economic impact. The teacher may guide the students to identify the following changes:
a) The changes in transportation of fruits and vegetables such as cardboard crates being used in place of wooden crates, etc. Reasons for above changes.
b) Milk being supplied in glass bottles, later in plastic bags and now in tetra-pack and through vending machines.
c) Plastic furniture doors and stools gaining preference over wooden furniture.
d) The origin of cardboard and the various stages of changes and growth.
e) Brown paper bags packing to recycled paper bags to plastic bags and cloth bags.
f) Reuse of packaging [bottles, jars and tins] to attract customers for their products.
g) The concept of pyramid packaging for milk.
h) Cost being borne by the consumer/manufacturer.
i) Packaging used as means of advertisements.

2. The reasons behind changes in the following:
Coca–Cola and Fanta in the seventies to Thumbs up and Campa Cola in the eighties to Pepsi and Coke in nineties.
The teacher may guide the students to the times when India sold Coca Cola and Fanta which were being manufactured in India by the foreign companies.

The students may be asked to enquire about
a) Reasons of stopping the manufacturing of the above-mentioned drinks in India

THEN.

b) The introduction of Thumps up and Campa cola range.

c) Re-entry of Coke and introduction of Pepsi in the Indian market.

d) Factors responsible for the change.

e) Other linkages with the above.

f) Leading brands and the company having the highest market share.

g) Different local brands venturing in the Indian market.

h) The rating of the above brands in the market.

i) The survival and reasons of failure in competition with the international brands.

j) Other observations made by the students

The teacher may develop the following on the above lines

2. Changing role of the women in the past 25 years relating to joint families, nuclear families, women as a bread earner of the family, changes in the requirement trend of mixers, washing machines, microwave and standard of living.

3. The changes in the pattern of import and export of different Products.

4. The trend in the changing interest rates and their effect on savings.

5. A study on child labour laws, its implementation and consequences.

6. The state of 'anti plastic campaign, 'the law, its effects and implementation.

7. The laws of mining/setting up of industries, rules and regulations, licenses required for running that business.

8. Social factors affecting acceptance and rejection of an identified product. (Dishwasher, Atta maker, etc.)

9.   What has the effect of change in environment on the types of goods and services? The students can take examples like:

a) Washing machines, micro waves, mixers and grinder.

b) Need for crèche, daycare centre for young and old.

c) Ready to eat food, eating food outside, and Tiffin centres.

10. Change in the man-machine ratio with technological advances resulting in change of Cost Structure.

11. Effect of changes in technological environment on the behaviour of employee.

II.Project Two: Principles of Management

The students are required to visit any one of the following:

1. A departmental store.
2. An Industrial unit.
3. A fast-food outlet.
4. Any other organisation approved by the teacher.

They are required to observe the application of the general Principles of management advocated by Fayol.

Fayol's principles
1. Division of work.
2. Unity of command.
3. Unity of direction.
4. Scalar chain
5. Espirit de corps
6. Fair remuneration to all.
7. Order.
8. Equity.
9. Discipline
10. Subordination of individual interest to general interest.
11. Initiative.
12. Centralisation and decentralisation.
13. Stability of tenure.
14. Authority and Responsibility OR
They may enquire into the application of scientific management techniques by F.W. Taylor in the unit visited.

Scientific techniques of management.
1. Functional foremanship.
2. Standardisation and simplification of work.
3. Method study.
4. Motion Study.
5. Time Study.
6. Fatigue Study
7. Differential piece rate plan.

Tips to teacher
(i) The teacher may organize this visit.
(ii) The teacher should facilitate the students to identify any unit of their choice and guide them to identify the principles that are being followed.
(iii) Similarly, they should guide the students to identify the techniques of scientific management implemented in the organisation.
(iv) It may be done as a group activity.

(v) The observations could be on the basis of
- The different stages of division of work resulting to specialization.
- Following instructions and accountability of subordinates to higher authorities.
- Visibility of order and equity in the unit.
- Balance of authority and responsibility.
- Communication levels and pattern in the organisation.
- Methods and techniques followed by the organisation for unity of direction and

Coordination amongst all.

- ☐ Methods of wage payments followed. The arrangements of fatigue study.
- ☐ Derivation of time study.
- ☐ Derivation and advantages of method study.
- ☐ Organizational chart of functional foremanship.
- ☐ Any other identified in the organisation

vi. It is advised that students should be motivated to pick up different areas of visit. As presentations of different areas in the class would help in better understanding to the other students.

vii. The students may be encouraged to develop worksheets. Teachers should help students to prepare observation tools to be used for undertaking the project.

Examples; worksheets, questionnaire, interviews and organizational chart etc.

III. Project Three: Stock Exchange

The purpose of this project is to teach school students the values of investing and utilizing the stock market. This project also teaches important lessons about the economy, mathematics and financial responsibility.

The basis of this project is to learn about the stock market while investing a specified amount of fake money in certain stocks. Students then study the results and buy and sell as they see fit.

This project will also guide the students and provide them with the supplies necessary to successfully monitor stock market trends and will teach students how to calculate profit and loss on stock.

The project work will enable the students to:

- ☐ Understand the topics like sources of business finance and capital market
- ☐ Understand the concepts used in stock exchange
- ☐ Inculcate the habit of watching business channels, reading business journals/ newspapers and seeking information from their elders.

The students are expected to:

a) Develop a brief report on History of Stock Exchanges in India. (your country)

b) Prepare a list of atleast 25 companies listed on a Stock Exchange.

c) To make an imaginary portfolio totaling a sum of Rs.50, 000 equally in any of the 5 companies of their choice listed above over a period of twenty working days

The students may be required to report the prices of the stocks on daily basis and present it diagrammatically on the graph paper.

☐ They will understand the weekly holidays and the holidays under the Negotiable Instruments Act.

They will also come across with terms like closing prices, opening prices, etc.

☐ During this period of recording students are supposed to distinctively record the daily and starting and closing prices of the week other days under the negotiable instrument act so that they acquire knowledge about closing and opening prices.

☐ The students may conclude by identifying the causes in the fluctuations of prices. Normally it would be related to the front-page news of a business journal, for example,

☐ Change of seasons.
☐ Festivals.
☐ Spread of epidemic.
☐ Strikes and accidents
☐ Natural and human disasters.
☐ Political environment.
☐ Lack of faith in the government policies.
☐ Impact of changes in government policies for specific industry.
☐ International events.
☐ Contract and treaties at the international scene.
☐ Relations with the neighbouring countries.
☐ Crisis in developed countries, etc.

The students are expected to find the value of their investments and accordingly rearrange their portfolio. The project work should cover the following aspects;

1. Graphical presentation of the share prices of different companies on different dates.
2. Change in market value of shares due to change of seasons, festivals, natural and human disasters.
3. Change in market value of shares due to change in political environment / policies of various countries/ crisis in developed countries or any other reasons
4. Identify the top ten companies out of the 25 selected on the basis of their market value of shares.

It does not matter if they have made profits or losses.

IV. Project Four: Marketing

Adhesives	Hair Dye	Salt
Air conditioners	Hair Oil	Sarees
Baby diapers	Infant dress	Sauces/Ketchup
Bathing Soap	Inverter	Shampoo
Bathroom cleaner	Jams	Shaving cream
Bike	Jeans	Shoe polish
Blanket	Jewellery	Shoes
Body Spray	Kurti	Squashes

Bread	Ladies bag	Suitcase/airbag
Breakfast cereal	Ladies footwear	Sunglasses
Butter	Learning Toys	Tea
Camera	Lipstick	Tiffin Wallah
Car	Microwave oven	Toothpaste
Cheese spreads	Mixers	Wallet
Chocolate	Mobile	Washing detergent
Coffee	Moisturizer	Washing machine
Cosmetology product	Music player	Washing powder
Crayons	Nail polish	Water bottle
Crockery	Newspaper	Water storage tank
Cutlery	Noodles	Wipes
Cycle	Pen	
DTH	Pen drive	
Eraser	Pencil	
e-wash	Pickles	
Fairness cream	Razor	
Fans	Ready Soups	
Fruit candy	Refrigerator	
Furniture	RO system	

Any more as suggested by the teacher.

The teacher must ensure that the identified product should not be items whose consumption/use is discouraged by the society and government like alcohol products/pan masala and tobacco products, etc.

Identify one product/service from the above which the students may like to manufacture/provide [pre-assumption].

Now the students are required to make a project on the identified product/service keeping in mind the following:
1. Why have they selected this product/service?
2. Find out '5 'competitive brands that exist in the market.
3. What permission and licenses would be required to make the product?
4. What are your competitors Unique Selling Proposition? [U.S.P.]?
5. Does your product have any range give details?
6. What is the name of your product?
7. Enlist its features.
8. Draw the 'Label' of your product.
9. Draw a logo for your product.
10. Draft a tagline.
11. What is the selling price of your competitor's product?
(i) Selling price to consumer
(ii) Selling price to retailer

(iii) Selling price to wholesaler

12.　　　　What is the profit margin in percentage to the
- Manufacturer.
- Wholesaler.
- Retailer

13. How will your product be packaged?
14. Which channel of distribution are you going to use? Give reasons for selection?
15. Decisions related to warehousing, state reasons.
16. What is going to be your selling price?
　　　(i) To consumer
　　　(ii) To retailer
　　　(iii) To wholesaler
17. List 5 ways of promoting your product.
18. Any schemes for
　　　(i) The wholesaler
　　　(ii) The retailer
　　　(iii) The consumer
19. What is going to be your 'U.S.P?
20. What means of transport you will use and why?
21. Draft a social message for your label.
22. What cost effective techniques will you follow for your product.
23. What cost effective techniques will you follow for your promotion plan.
At this stage the students will realise the importance of the concept of marketing mix and the necessary decision regarding the four P's of marketing.
- Product
- Place
- Price
- Promotion

On the basis of the work done by the students the project report should include the following:
1. Type of product/ service identified and the (consumer /industries) process involve there in.
2. Brand name and the product.
3. Range of the product.
4. Identification mark or logo.
5. Tagline.
6. Labeling and packaging.
7. Price of the product and basis of price fixation.
8. Selected channels of distribution and reasons thereof.
9. Decisions related to transportation and warehousing. State reasons.

10. Promotional techniques used and starting reasons for deciding the particular technique.

11. Grading and standardization.

Presentation and Submission of Project Report

At the end of the stipulated term, each student will prepare and submit his/her project report.

Following essentials are required to be fulfilled for its preparation and submission.
1. The total length of the project will be of 25 to 30 pages.
2. The project should be hand written.
3. The project should be presented in a neat folder.
4. The project report should be developed in the following sequence-

   ▫ Cover page should include the title of the Project, student information, school and year.

   ▫ List of contents.
   ▫   Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
   ▫ Introduction.
   ▫ Topic with suitable heading.
   ▫ Planning and activities done during the project, if any.
   ▫ Observations and findings of the visit.
   ▫ Conclusions (summarized suggestions or findings, future scope of study).
   ▫ Photographs (if any).
   ▫ Appendix
   ▫ Teacher's observation.
   ▫ Signatures of the teachers.
   ▫   At the completion of the evaluation of the project, it should be punched in the centres o that the report may not be reused but is available for reference only.
   ▫   The project will be returned after evaluation. The school may keep the best projects

ASSESSMENT

Allocation of Marks= 20 Marks

The marks will be allocated under the following heads:

1	Initiative, cooperativeness and participation	2 Marks
2	Creativity in presentation	2 Marks
3	Content, observation and research work	4 Marks
4	Analysis of situations	4 Marks
5	Viva	8 Marks
	Total	**20 Marks**

BOOKS PRESCRIBED:

1. *Business Studies I by NCERT, New Delhi.*

2. *Business Studies II by NCERT, New Delhi*

ACCOUNTANCY

Maximum marks:100 Marks   Time: 3 hrs

Theory: 80 Marks   Project Work: 20 Marks

Part A: Accounting for partnership firms and companies   60 Marks

Unit-1: Accounting for partnership firms   35 Marks

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-evaluation 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 partner's 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   25 Marks

A. Accounting for share capital   15 Marks

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.

4. Accounting treatment for forfeiture and reissue of shares.

B. Accounting for Debentures   10 Marks

1. 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.

2. Issue of debentures as collateral security journal entries for interest an debenture.

3. Sources of redemption of debentures-out of profit, out of capital and creation debenture redemption reserve.

4. 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   12 Marks

1. Financial Statement of company-preparation of simple Balance sheet of a company in prescribed from as per schedule III to the Companies Act 2013, with major headings only.
2. Financials statement analysis-meaning, significance, limitations.
3. 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

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

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. Representation of data in the form of bad graphics, pie-diagram, tables and tally marks.

Or

Part B: Computerized accounting   20 Marks

Unit-3: Overview of computerized accounting system   10 Marks

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 Applications of Electronics Spread   10 Marks

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.

Scheme of assessment

Question paper contains five sections namely

1. **Section –A** contains 8 (Objective Type Question/Multiple Choice Questions) of 1 mark each. 1x 8 = 8 marks
2. **Section- B** contains 4 Short Answer Type Questions of 3 marks each to be answered in 20 to 30 words. 3 x 4 = 12 marks
3. **Section – C** contains 5 Short Answer type questions of 4 marks each to be answered in 100 to 150 words. 4 x 5 = 20 marks
4. **Section - D** contains 4 Long Answer type questions of 6 marks each to be answered in 150 to 200 words. (With Internal Choice) 6 x 4 = 24 marks
5. **Section – E** contains 2 Long Answer type questions of 8 marks each to be answered in 150 to 200 words. (With Internal Choice) 8 x 2 = 16 marks

Note: The paper setter shall incorporate Higher Order Thinking Skills (HOTS) questions apart from knowledge, memory and application based questions.

Part C: Project Work   20 Marks

- Internal Assessment: - 05 Marks
- External Assessment: - 15 Marks

Project File   03 Marks

Written Test   09 Marks

Viva-Voce   03 Marks

BOOKS PRESCRIBED:

1. *Accountancy Part I Textbook for Class 12th by NCERT, New Delhi.*

2. *Accountancy Part II Textbook for Class 12th by NCERT, New Delhi.*

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 , neighbour , crèche , day care centres etc: Integrated Child Development Scheme (ICDS) – objectives and functions .

Marks: 18
Periods: 34

Unit-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 and milk products , fats and oils , sugar , jaggery , honey , spices and condiments . Illeffects of some of the adulterants present in the foods: Kesari dal , metanil yellow , argemone seeds .

Marks: 09
Periods: 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 and 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 and 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 and Family	**11 marks**
3)	Money Management and Consumer Education	**03 marks**
4)	Clothing, Selection and Care	**06 marks**
5)	Viva --- Voce	**02 marks**
6)	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 carry out modifications for pregnant and lactating mother, including persons suffering from fever and diarrhoea. Prepare and serve one dish.
2) Preparations 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)   **Period – 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.

Unit IV   CLOTHING, SELECTION AND CARE   Period – 8

Make samples of:

a)   Basic stitches and seams

- Flat , run & fell , French , Counter Seam .
- Running stitches – Hemming
- Back stitches
- Inter locking

b)   Fasteners:

- a) Press button , b) 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 and 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

PHILOSOPHY

Maximum Marks:100   **Time: 03:00 Hours**

Theory: 80 Marks   **Internal Assessment: 20 Marks**

A. INDIAN PHILOSOPHY

1. Nature and schools of Indian philosophy

2. Philosophy of the Bhagavad Gita

3. Buddhism, Nyaya, Yoga, Jainism

B. MUSLIM PHILOSOPHY

4. Introduction to Muslim philosophy

5. Principle Schools of Muslim philosophical thought

6. Muslim philosophers and their contribution

C. WESTERN PHIOSOPHY

7. The casual principles

8. Nature of reality

9. Mind body problem

D. APPLIED PHILOSOPHY

10. Environmental ethics, Bioethics, Business ethics, Philosophy of education

A. INDIAN PHILOSOPHY

Unit I: Nature and Schools of Indian Philosophy   **Mark 08**

1: Nature and schools of Indian philosophy
2: Characteristics of Indian philosophy
3: Theory of purusarthas (Dharma,Artha, Kama &Moksha)

Unit II: Philosophy of the Bhagavad Gita   **Marks 08**

1: Nishkama-karma
2: Svadharma
3:Lokasamgraha

Unit III: Buddhism, Nayaya, Yoga, Janism   **Marks 08**

1: Buddhism (Eight fold path)
2: Nyaya (Theory of pramanas)
3. Yoga (Eight fold practice)

4. Janism (panchmahavarta, Ahamsa, satya, astaya, aprigraha, barahmacharaya,)

B: MUSLIM PHILOSOPHY

Unit IV: Introduction to Muslim Philosophy   **Marks 08**

1: Meaning and emergence of Muslim philosophy

2: Sources of Muslim philosophy (Primary and Secondary sources)
3: Main philosophical teachings of Holy Quran
Unit V: Principle Schools of Muslim Philosophical Thought   **Marks 08**

1: Mutazilism: Principles of mutazilism
2: Asharism: main doctrines of Asharism
Unit VI: Muslim Philosophers and their Contribution   **Marks 08**

1: Alama Iqbal- Intellect and intuition

2: Jamal-al-din AL-Afghani- spirituality, morality, rationality and Muslim unity
3: Alkindi- God, soul, intellect
C: WESTERN PHILOSOPHY

Unit VII: The Casual Principles   **Marks 08**

1: Aristotle's theory of four folds causation
2: Hume's theory of causation
Unit VIII: Nature of Reality   **Marks 08**

1: Proofs for the existence of God
2: Ontological argument
3: Cosmological argument
4: Teleological argument

Unit IX: Mind-Body Problem   **Marks 08**

1: Interactionism- Descartes

2: Parallelism-Spinoza

3: Pre-established harmony-Leibnitz

D: APPLIED PHILOSOPHY

Unit X: Environmental Ethics, Bioethics, Business Ethics   **Marks 08**

1: Environmental ethics

2: Bioethics

3: Business ethics

4: Philosophy of education
Internal Assesment - 20 Marks
1: Assignment- 05 Marks
2: Presentation – 05 Marks

3: Viva - 05 Marks

4: Holistic performances indicators (attendance & discipline) – 05 Marks

Suggested readings:

1: Introduction to Indian philosophy, By Dutta and Chatterji
2: Critical survey of Indian philosophy, by C. D. Sharma
3: History of Indian philosophy, by R. N. Sharma
4: History of Muslim philosophy by M. M. Sharif
5: Muslim philosophy and philosophers by Salim Khan and Anwar Khan
6: History of western philosophy by Y. Masiah
7: Introduction to philosophy by John Patrick
8: Living issues in philosophy by H.Titus
9: Companion to ethics by R. G. Frey
10: Applied ethics by Patter Singer

Scheme and Pattern of the Question Paper

Section	Question Type	Number of Questions	Serial No. in Question paper	Marks for each Question	Total Marks
A.	OBJECTIVETYPE QUESTIONS	12	1-(I-XII)	01 Marks	12 Marks
B.	VERY SHORT ANSWERTYPE QUESTIONS	12	2-13	02 Marks	24 Marks
C.	SHORT ANSWERTYPE QUESTIONS	05	14-18	04 Marks	20 Marks
D.	LONG ANSWER TYPE QUESTIONS	04	19-22	06 Marks	24 Marks

EDUCATION

Max. Marks : 100   **Time : 3 Hours**

UNIT 1 : CURRICULAM

1.1   Meaning and Importance of Curriculum
1.2   Definitions – Ross , Cunningham , Tagore , Zakir Hussain
        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   ** Methods of Teaching
       ** Curriculum   ** 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 and Principles of Growth and Development
1.2   Stages of Growth and Development (Physical, Mental & 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 & Jeff Cobb
1.3   Characteristics of Learning
1.4   Types of Learning :
       (i) Perceptual   (ii) Conceptual   (iii) Motor   (iv) Verbal   (v) 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)**

SCHEME OF ASSESSMENT

PART	Question Type	Question no. to be shown in question paper	Number of Questions	Marks for Each Question	Total Marks
A	OBJECTIVE TYPE QUESTIONS	Q.1 (I-XX)	20	1 Mark	20
B	PASSAGE BASED QUESTIONS	Q.2 & Q.3	2	5 Marks	10
C	VERY SHORT ANSWER TYPE QUESTIONS	Q.4- Q.12	9	2 Marks	18
D	SHORT ANSWER TYPE QUESTIONS	Q.13- Q.19	7	4 Marks	28
E	LONG ANSWER TYPE QUESTIONS	Q.20-Q.23	4	6 Marks	24
	Grand Total		**42**		**100**

APPLIED MATHEMATICS

Max. Marks = 100
(80 - Theory +20 - Internal Assessment)

Unit Ist :- Matrices and Determinants   (16 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 (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 2nd :- Limits and Continuity of a Function   (10 Marks)

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

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

$$\lim_{x \to o} \frac{\log(1 + x)}{x}$$

and their applications.
Continuity of a function.

Unit 3rd :- Derivative   (10 Marks)

Derivative of a function, its geometrical and physical significance, derivation 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 4th :- Applications of Derivatives   (08 Marks)

Tangents and normal (Cartesian Co-ordinates only), Increasing and decreasing functions. Maxima and Minima. Rolles and Mean Value Theorem (without proof) and their simple applications.

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Unit 5th :- Integrals

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

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

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

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

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 definite integrals.

Unit 6th :- Differential Equations

(08 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 7th :- Statics

(08 Marks)

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

Unit 8th :- Dynamics

(09 Marks)

Velocity acceleration , equations of motion along a straight line with uniform acceleration.

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

FUNCTIONAL ENGLISH

TIME: 3 HOURS

MAX MARKS: 100   **80 (THEORY)+20 (INTERNAL ASSESSMENT)**

Prescribed Textbooks

1. Functional English Literature Reader for Class-XII published by Goyal Brothers Prakashan, New Delhi

2. Functional English Language Skills Book for Class XII published by Goyal Brothers Prakashan, New Delhi.

Q No	DESCRIPTION	Weightage
SECTION A: READING COMPREHENSION		**20 marks**
1	One unseen passage of 250-300 words in length followed by questions including MCQ's, true/false, yes/no, one line clarity questions, asking for title etc., to assess comprehension, vocabulary, interpretation and inference.	1x10=10 marks
2	One seen prose passage from Literature Reader of 250-300 words in length to measure the comprehension of students at a deeper level. Students shall be assessed through a cloze test wherein, they will be asked to fill the blanks within the passage. Proper hints must be provided.	1x10= 10 marks
SECTION B: WRITING SKILLS		**30 marks**
3	One question on note making. (100-120 words)	5 marks
4	One out of two questions (commercial ad or classified ad) on advertisement. (50- 80 words)	4 marks
5	One out of two questions on Memorandum/Circular writing. (100-120 words)	5 marks
6	One question on report writing with internal choice (newspaper/other reports). (100-120 words)	5 marks
7	One question on editing and proof-reading.	5 marks
8	One question on invitations and replies (50-80 words)	3 marks
9	One question on Dialect/Register/Accent/Style with examples.	3 marks
SECTION C :GRAMMAR		**10 marks**
10	One question on Word class Conversion (2 items)	2 marks
11	One question on Modals (2 items)	2 marks
12	One question on Syllable Identification (4 items)	2 marks
13	One question on Articles (2 items)	2 marks
14	One question on Emphatic Constructions (2 items)	2 marks
SECTION D: LITERATURE		**20 marks**
15	Five out of eight questions to be attempted based on prose to assess inference and critical thinking. (40-50 words)	5x2=10 marks
16	One question from poetry with internal choice to assess interpretive and inferential comprehension. (80-100 words)	4 marks
17	One question with internal choice from plays based on character sketch/description of scene/event/theme/title (100-150 words)	6 marks

INTERNAL ASSESSMENT   **20 marks**

Guidelines for Internal Assessment

S. No	Skill	Activities
1.	Listening	• Listening to a short monologue/dialogue and answering the questions at the end. The teacher shall play a cassette or an audio from his/her cell phone, recorder etc. • Introducing the students to basic phonetics (Part-1). • Note-taking. • Listening to speeches of important personalities from Politics, Sport, and entertainment etc. and expose them to different *accents* people use. • Introducing the students to basic phonetics (Part-2) like blends, clusters, syllabic structures, etc.
2.	Speaking	• Interpreting tables, bar-charts, histograms and other statistical data (Refer to *Language Skills Book*). • Role-play. • News reading, conducting interviews, group discussions.
3.	Project work	• Peer/ group work on communication skills • Presentations, PPTs on advertisements, storytelling, reviews of books, films • Discussions on contemporary social and educational issues

Suggested Reading

- A Practical Course of English Pronunciation by A. C. Gimson (Cambridge University Press).
- Introduction to English Phonetics and Phonology by Mohammad Aslam & Aadil Amin Kak (Cambridge University Press).
- A Course in Listening and Speaking-I by V. Sasikumar et al (Foundation Books Delhi).
- High School English Grammar and Composition (Wren & Martin).

VEDIC STUDIES

पाठ्यक्रम

वैदिक अध्ययन

पूर्णांक : 80
समयावधि : 3 घंटे

इकाई 1– वैदिक विद्वान् भारतीय एवं पाश्चात्त्य   08 अंक

क. भारतीय विद्वान् – यास्क, वेंकटमाधव, सायण, स्वामीदयानन्द, अरविन्द घोष एवं विनोवा भावे।

ख. पाश्चात्त्य विद्वान् – रूडोल्फ रॉथ, फैडिक, मैक्स मूलर

इकाई 2– वेदों से सम्बद्ध साहित्य   08 अंक

क. वेदांग

ख. उपवेद

इकाई 3– सृष्टिविज्ञान   08 अंक

क. सृष्टि की उत्पत्ति

ख. सृष्टिके भेद

इकाई 4– देश एवं उनके निवासी   14 अंक

क. मातृभूमि
ख. प्रजा
ग. वृक्ष एवं वनस्पति

इकाई 5– परवर्ती साहित्य1   13 अंक

क. रामायण

ख. महाभारत

इकाई 6– परवर्ती वैदिक साहित्य 2   13 अंक

क. स्मृति ग्रन्थ

ख. पुराण

इकाई 7– वैदिक विज्ञान एवं तकनीकि   08 अंक

क. गणित

ख. भौतिक विज्ञान

ग.रसायन विज्ञान

इकाई 8–   वैदिक अवधारणाएं   08 अंक

क. सार्वभौमिक नियम

ख. त्याग

ग. समानता एवं एकता

घ. पुण्य एवं पाप

ङ. चार पुरुषार्थ

आंतरिक मूल्यांकन

अंक– 15+5 = 20   समय– 1 घंटा

इकाई 1– वैदिक विद्वान् भारतीय एवं पाश्चात्त्य   07 अंक

क. भारतीय विद्वान् – यास्क, वेंकटमाधव, सायण, स्वामी दयानन्द, अरविन्द घोष

एवं विनोवा भावे।

ख. पाश्चात्त्य विद्वान् – रूडोल्फ रॉथ, फैडिक, मैक्स मूलर

इकाई 2–   वेदों से सम्बद्ध साहित्य   08 अंक

क. वेदांग

ख. उपवेद

मौखिक परीक्षा   05 अंक

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, medival 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 Srivastava.
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 dun.   **02 marks**
5. Playing of the following Talas in single & double Layakaries :
   (i) Ek Taal   (ii) Tilwara Taal   (iii) JhapTaal   (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 : (Theory)

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.

Total= 50

STATISTICS

Class:12th

MaximumMarks:100

Time : 3Hrs

(Theory:70,Practical:30)

(Internal=10; External =20)

Unit I: Probability–I   (07marks)

Random Experiment, Trail, Sample space, Sample point, Events, Impossibleevent, Exhaustive events, Equally like and mutually exclusive events, Independent & Dependent events. Definitions of Probability, Classical and Mathematical. Axioms of Probability. Law of Addition for two events. Law of Multiplication of two events. Concept of conditional probability, Statement of Baye's theorem.

Unit II:Probability–II   (08marks)

Randomvariable,Typesofrandomvariable(DiscreteandContinuous),Distribution functions, Types of Distribution functions (Discrete and Continuous),Probability Mass Function, Probability Distribution Function, Numerical characteristics of random variable (Discrete and Continuous), Definition of some Discrete probability distributions (Bernoulli, Binomial and Poisson Distributions)and applications in real life, Evaluate first two moments of Discrete ProbabilityDistributions.

Unit III:Regression Analysis   (08marks)

Concept of Bi-variate data, Graphical representation of Bi-variate data, Scattered diagram, Concept of Regression, Paired linear regression (Regression lines),Estimation of parameters (Least square method), Estimation of unknown observations, Regression Coefficients, Properties of regression coefficient, Fitting of regression lines to real life data, Application of regression analysis, Angle between two regression lines.

Unit IV: Theory of Attributes   (08marks)

Concept of attributes, categories of attributes (Dichotomy, many-folds), Notations used in theory of attributes, Class frequencies, order of class frequencies, ultimate class frequency, consistence of data, (2X2) contingency table for attributes, Independence and association between two attributes, Yule's coefficient of association, use of Yule's coefficient of association in real life data.

UnitV:IndexNumber   (08marks)

Basic information of Index Number, Characteristics of Index Number, Applications of index number, Problems in the construction of Index Number. Important terms used in index number (Base year price/quantities, current year price quantities, price relative, price index, quality index), Methods of constructing index number, Simple or un-weighted index number, limitation of simple index number,Simple average of price relatives. Weighted Index Number, Methods of calculating weighted index number (Laspeyer's, Paasche's and Fisher's index number), Time Reversal Test(TRT)and Factor Reversal Test (FRT),Testing for ideal index number.

Unit VI: Vital Statistics   (07marks)

Meaning and nature of Vital Statistics, Uses of Vital statistics, Various terms used in vital statistics (Vital Events, Population, Mean Population), Concept of Fertility and Mortality, Different measures of fertility (Crude Birth Rate, Specific Birth Rate, General Fertility Rate, Specific Fertility Rate, Gross Reproduction Rate),Different measures of mortality (Crude Death Rate, Specific Death Rate, Standardized Death Rate).

Unit VII: Sampling Theory   (08marks)

Meaning and Objective of sampling, Concept of Statistical Population andSample (WR, WOR), Homogenous and Heterogeneous population, Requisites of good sample, Sampling and Census, advantages and disadvantages of sampling over census, different sampling techniques (Simple Random Sampling, Stratified sampling and systematic sampling), Sampling and non-sampling errors, Advantagesand disadvantages of different sampling methods, Application of different sampling methods in real life situations.

Unit VIII: Time Series Analysis   (07marks)

Introduction and Importance of Time Series, Examples of time series, Components of Time Series (Secular, Seasonal, Cyclic, Irregular trends), Graphical presentation of time series data, Measure of trend by using various techniques (Freehand method, Semi average method), Estimation of unknown values from giventimeseries data,Forecasting bytime series.

Unit IX: Linear Programming and Computer Applications-II   (09 marks)

Concept of Linear programming, Feasible solution, Basic feasible solution, Two dimensional Linear programming problems, Graphical method to solve two dimensional Linear programming problems (Maximization/Minimization models).

Concept of software and hardware, System software and application software, Concept of Software used in statistical analysis (Microsoft Excel, Minitab, SPSS), Applications of Statistical software.

Practical/Projectwork

1. Fitting of Binomial and Poisson distribution.
2. Construct regression lines to real life data and estimate unknown values
3. Construction of Index number (Laspyer's, Paasche's and Fisher's),using market data.
4. Testing of ideal index number using data collected by students.
5. Estimation of different measures of fertility and mortality.
6. Forecasting of time series data using free hand method and semi-average method.
7. Calculation of sample mean and population mean from collected data and check E(sample mean)=μ
8. Construct different statistical charts by using statistical software.
9. Calculation of measures of central tendency and measures of dispersion by using statistical software.
10. Construct a linear programming problem and solve it by graphical method.

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BUSINESS MATHEMATICS

Max. Marks = 100
(80 - Theory +20 - Internal Assessment)

Time Allowed: 3 Hours

Unit Ist:- Matrices and determinants   (12 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 2nd Limits and continuity of a function   (08 marks)

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

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

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

and their applications. Continuity of a function .

Unit 3rd Derivative   (12 marks)

Derivative of a function, its geometrical and physical significance,derivative of some simple functions by first principle method ($x^n(ax + b)^n$, sinx, cosx, tanx, logx ,a^x), derivative of sum ,product and quotient of two functions. Derivative of inverse trigonometric functions (without proof) with applications.

Unit 4th Integration   (12 marks)

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

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

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

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

Unit 5th Differential equation (12 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 6th Applications of Integration (08 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 7th Application of calculus in commerce and economics (08 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 8th Computing (08 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.

The question paper contains four sections: A, B, C and D.

Section A - questions 1 to 10 - comprises of 10 multiple choice questions of 1 mark each.

Section B - questions 11 to 20 - comprises of 10 very short answer type questions of 2 marks each.

Section C - questions 21 to 28 - comprises of 8 short answer type questions of 4 marks each.

Section D - questions 29 to 31 - comprises of 3 long answer questions of 6 marks each.

INTERNAL ASSESSMENT	20 MARKS
Periodic Tests (Best 2 out of 3 tests conducted)	10 Marks
Mathematics Activities	10 Marks

Note: For activities NCERT Lab Manual may be referred.

COMPUTER SCIENCE

Maximum Marks=100
Time: 3 Hrs

Theory =70 Marks
Practical =30 Marks (Internal=10: External=20)

Unit 1: Control Structures in Python.   10
Marks

Conditional Statements:

> If
> If-Else
> If-Elif-else.

Loops: -

> While Loop
> For Loop,
> Finite loop and Infinite Loop,
> Nested Loop.
> Break and continue.

Unit 2:-User Defined functions in Python :   10 Marks

> Concept of a Function
> creating a function
> calling a Function
> Arguments, Arbitrary arguments
> Scope of a variable (Local and Global)
> Functions Returning values.

Unit 3: -Introduction to Object Oriented Programming in Python   10 Marks

> Concept of Object-Oriented Programming
> Advantages of OOPs
> Basic elements of OOPs: Class, Object, Encapsulation, Polymorphism, Inheritance, Data abstraction and Data hiding,
> Access Specifiers (Public, Private, Protected).
> Constructors: -- Concept of Constructors
> Types of Constructors (Default and Parameterized constructor).
> Concept of Destructor.

Unit 4: - Data Structures in Python.   10 Marks

> Arrays: Concept of Array, creating an array, Access the Elements of an Array, Array Length.
> Lists- Concept of Lists, Creating a list, List Items (Ordered, Changeable, Allow Duplicates) ,List Length.

- Dictionaries: - Concept of Dictionaries, Creating a dictionary, Dictionaries items:- (Ordered, Changeable, Allow Duplicates) , dictionary Length.
- Tuple: - Concept of Tuple, Creating a Tuple with one item, Tuple items: - (Ordered, Changeable, Allow Duplicates) , Tuple Length.
- Sets: - Concept of Sets, Creating a Set, Sets items: - (Ordered, Changeable, Allow Duplicates) , Set Length.

UNIT 5: Database and SQL   10 Marks

- Database and its advantages
- Relational data model
- Concept of Domain, Relation, Attribute, Tuple, Candidate key, Primary key, Alternate key
- SQL and its advantages
- Data types in SQL (NUMBER, CHAR, DATE)
- Data Definition Language and Data Manipulation Language
- SQL commands: DDL commands (CREATE, DROP, ALTER) , DML commands (SELECT, INSERT, UPDATE, DELETE)
- SQL functions: SUM(), AVG(), COUNT(), MIN(), MAX()

UNIT 6: Boolean Logic   10
Marks

- Boolean Operators: AND, OR, NOT .
- Truth Table
- Basic Logic Gates: AND, OR, NOT, NAND, NOR
- Laws of Boolean Algebra: Commutative law, Associative law, Distributive law, De Morgan's law, Principle of Duality (Proving these laws using Truth Tables only)

UNIT 7: Networking and Cyber security   10 Marks

- Networking and its advantages
- Types of Networks: PAN, LAN, MAN, WAN
- Network Topologies: Bus, Star, Ring
- Modem

Cyber safety and security

- Cyber Bullying: Preventive Measures
- Computer Safety and Security
- Internet Safety and Ethics
- Safe Social Networking
- Safe Email Practices
- Dos and Don'ts for Cyber Safety

PRACTICALS:

Programming in Python

1. WAP to find weather a number is even or odd.

2. WAP to Find greatest among three numbers.

3. WAP to find factorial of a number.

4. WAP to swap two numbers using a user defined function.

5. WAP to find length of a list.

6. WAP to implement concept of multilevel inheritance.

7. WAP to initialize array, display and access its elements.

8. WAP to create a dictionary.

9. WAP create a tuple using one element.

10. WAP to create a set with duplicate values.

SQL Commands:

1. Use SQL command to create a table with specified columns.

2. Use SQL command to insert data into a table.

3. Use SQL command to retrieve data from existing table.

4. Use SQL command to delete records from a table.

5. Use SQL command to drop an existing table.

Practical file

Practical file must contain the entire mentioned practical.

Viva voce

Viva will be asked from syllabus covered

Distribution of 20 marks for External practical

- Programming (Logic, Syntax, Indentation, output) (07 marks)

- SQL commands (03 marks)

- Practical file (05 marks)

- Viva (05 marks)

INFORMATION PRACTICES (IP)

Maximum Marks: 100   **Time: 3Hrs**

Theory: Marks 70.

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

TOPIC	Marks	Theory Lectures	Practicals
Computer Networking	20	40	05
Internet & Cyber Security	15	25	-
Fundamentals of DBMS	20	40	20
Python Programming	15	30	20

Unit-I: Computer Networking

Introduction to Data Communication, Components of Data Communication, Data Flow (Simplex, Half Duplex and Full Duplex), A brief overview of networking, Identifying Computer over a Network (MAC, IP, DNS); IP Addressing: Types and Classes. Types of networking (PAN, LAN, MAN, WAN); Network Topologies (BUS, RING, STAR, TREE); Network Media- Guided (Twisted pair, Co-axial, Fiber Optics), Un-Guided Media, (Infrared, Radio, Microwave).

Network Device: Hub, Modem, Repeater, Gateway, Router, Switch, and their Functions. Network Technologies –Ethernet, Bluetooth, Wi-Fi.

Unit-II: internet and Cyber Security

Internet and World Wide Web, Internet Concepts: Web page and types, Web Browsers, URL, Web Address and Web application, ISP, Web Server and hosting of a website.

Cybercrime: Brief overview, Types of Cyber Crimes. Network threats (Virus, Trojan Horse, Worm, Denial of Services, Snooping), Social Networking Risks and Challenges- (Illegal content, Spam, Fake friends, Malicious Links, Phishing).

Cyber Security – Firewall and Anti-Virus.

Unit-III: Fundamentals of RDBMS

Introduction to Database, Definition of Database, DBMS, RDBMS Concepts, Table, Attribute, Tuple, Field; Data Definition, Data Types Key Concept, Types of Keys, Candidate Key, Alternate Key, Primary Key, Foreign Key; Database basic Constraints, Unique, Null, Not Null;

Structured Query Language (SQL) Concept, Types of SQL Commands; Basic SQL Data Types – Char, Varchar2, Number, Long, Date; SQL Operators – Arithmetic, Relational, Logical; Types of SQL Commands – DDL (Create, Alter, Drop, Truncate, Rename), DML (Insert, Select, Update, Delete), DCL (Grant, Revoke), TCL (Commit, Rollback, Save Point);

SQL Functions – Brief Overview, String Functions (LOWER, UPPER, INITCAP, CONCAT, SUBSTR, INSTR, TRIM), Number Functions (ABS, CEIL, FLOOR, LEN, MOD, SQRT); Group Functions (SUM, AVG, MAX, MIN, COUNT)

Unit-IV: Python Programming

Revision of Decision Structures, LOOPING Structures, Lists: List Operations - Creating, Initializing, Traversing, and Manipulating Lists, List Methods, and Built-In Functions viz len(list), Max(list), Min(list), cmp(list1,list2), list.append(obj), list.count(obj), list.index(obj), list.insert(obj), list.remove(obj), list.reverse(obj) and list.sort(obj).

Dictionary: Concept of Key-Value Pair, Creating, Initializing, Traversing, Updating, And Deleting Elements, Dictionary Methods, and Built-In Functions viz len(), pop(), popitem(), del keyword, clear. Basic introduction to Pandas.

Programs of Python

1. To print the multiplication table of a given number.
2. To find the sum of 'n' natural numbers.
3. To find the factorial of a natural number.
4. To count the number of vowels in user entered string.
5. To find minimum of three numbers
6. To generate Fibonacci series.
7. To append elements in a List
8. To remove elements in a List
9. To find the largest and smallest numbers in a List.
10. Create a dictionary to store names of states and their capitals.

Write the 20 SQL Query's

ELECTRONICS

Maximum Marks: 100
Theory: 70 marks
Time: 3 hours
Practical: 30 marks (Internal Assessment: 10 marks, External: 20 marks)

Unit-I

Design of combinational Logic Circuits: (Marks = 15)

Conversion of Boolean expression to canonical forms: Sum Of Products (SOP) and Product Of Sums(POS) forms. Use of Karnough map (upto three variables) for minimization of Boolean expressions. Converting expressions to logic circuits. Half-adder, full- adder. Subtractors: half subtractor, full subtractor.

Unit-II

Semiconductors: (Marks =10)

Electronic structure of atoms, energy band theory of Solids: insulators, semiconductors and conductors., intrinsic semiconductors, effect of temperature and doping, extrinsic semiconductors — donor and acceptor impurities in semiconductors, n-type and p-type semiconductors,Transport phenomenon in semiconductors (Drift and Diffusion)

Unit-III

Semiconductor Diode: (Marks = 15)

P-N Junction: depletion region, Junction Barrier, effect of voltage on movement of charges carriers across junction. V-I characteristics, Diode resistance. Diode as rectifier (half wave and full wave), average value, ripple factor and efficiency.

Unit-IV

Bipolar Junction Transistor (BJT) (Marks = 15)

Transistor: PNP and NPN, Working Principle, Transistor configurations: CE and CB. α and β of a transistor and their relationship, characteristics of CE. Concept of Load line and Q-point. Transistor as an amplifier in CE arrangement, Active , cutoff, saturation regions.

Unit-V

Communication: (Marks = 15)

Modulation, need for modulation, carrier wave, types of modulation, Amplitude modulation, graphical representation of AM wave, percent modulation, calculation of modulation index from waveform, , upper and lower side frequencies (qualitative treatment only). Limitations of AM. Frequency modulation, Graphical representation of FM wave, Qualitative concepts about the bandwidth and side frequencies. Advantages of FM over AM. Qualitative concept of Demodulation.

PRACTICALS (HSP-II)

1) Identification of Various electronics components from mixed collection of items.
2) To implement a circuit given in the expression using logic gates.

3) To design and implement a half adder using logic gates.

4) To design and implement a full adder using logic gates.

5)To design and implement a half subtractor using logic gates.

6) To design and implement a full subtractor using logic gates.

7) To study the V-I Characteristics of Semiconductor diode in forward bias.

8) To study the V-I Characteristics of Semiconductor diode in reverse bias.

9) To study a half wave rectifier.

10) To study a Full Wave rectifier.

11) To study the characteristics of NPN transistor.

12) To study the characteristics of PNP transistor.

13) To study common emitter npn transistor as Switch.

14) To study Common Emitter npn transistor as an Amplifier

15) Use of Multimeter to

    (a) identify base of Transistor.

    (b) distinguish between NPN and PNP type transistors.

    (c) see the unidirectional flow of current in case of a diode.

    (d) check whether a given electronic component is in working order.

16) To study the amplitude modulation, trace the waveform and calculate the modulation index.

17) Design and implement Simple electronic circuits.

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ENGLISH LITERATURE

Objectives of teaching English Literature

- To provide exposure to various genres of writing in English in order to develop sensitivity to literary and creative uses of the language.

- To expand the learners' vocabulary resources through various media.

- To develop a taste for reading and a critical faculty to examine a text and comment on its different aspects.

- To develop proficiency in English Language both in receptive and productive skills.

- To grasp the global meaning of the text, its gist and understand the interplay and inter-relationships between its theme and sub-themes.

- To form critical and evaluative opinions about a text, for example, how the details support a generalization or the conclusion either by classification or by contrast and comparison.

- To comprehend details, locate and identify facts, arguments, logical relationships, generalisation, conclusion, in the texts.

- To draw inferences, supply missing details, predict outcomes, grasp the significance ofparticular details and interpret texts.

- To assess and analyze the point of view of the author.

- To infer the meanings and connotations of words and phrases from the context.

- To appreciate stylistic nuances, literal and figurative uses.

- To analyse a variety of texts on the basis of skills attained according to the aforesaid.

- To identify different styles of writing like humorous, satirical, contemplative, ironical and burlesque.

- To be able produce text-based writing (writing in response to questions or tasks based on prescribed as well as 'unseen' texts).

To develop familiarity with the poetic uses of language including features of the language through which artistic effect is achieved.

Book Prescribed

Glory II: Textbook of English literature for Class XII Published by JKBOSE

SECTION A: READING COMPREHENSION		12 MARKS
1	One unseen passage (500-600 words) followed by six objective typeand multiple choice questions.	6x1=6 Marks
2	One unseen poem followed by two questions based on interpretation, inference and critical appreciation (50-60 words each).	2x3=6 Marks
SECTION B: CREATIVE WRITING SKILLs		**10 MARKS**
3	One out of two questions on writing an essay on a contemporary issue of cultural/social/historical/environmental importance (300-400 words).	1x5=5 Marks
4	One out of two questions based on writing a biographical sketch or personality profile of relative/celebrity/sportsperson/teacher/etc (300-400words).	1x5=5 Marks
SECTION C: LITERATURE		**58 MARKS**
Poetry		
5	Complete text of a prescribed poem followed by three questions on appreciation and critical analysis, etc. (20-30 words each).	3x2=6 Marks
6	Four out of six extract-based questions based on identifying poetic devices.	4x1=4 Marks
7	One out of three questions on prescribed poems, excluding the poem at Q5above, based on critical analysis, theme, structure genre, etc (100-120 words).	1x5=5 Marks
Essays		
8	Four multiple choice/objective type questions based on the prescribed essays.	1x4=4 Marks
9	One passage (300-400 words) from the prescribed essays followed by threequestions onappreciation, devices, critical analysis, etc (20-30 words each).	3x2=6 Marks
10	One out of three questions on prescribed essays based on critical analysis,theme, structure, genre, situation, etc (100-120words each).	1x5=5 Marks
Drama		
11	Three multiple choice/objective type questions based on the prescribed play.	3x1=3 Marks
12	One out of two questions on the prescribed play based on theme, structure,genre, critical analysis, situation, characterization, etc (100-120 words).	1x5=5 Marks
Novel		
13	Five multiple choice/objective type questions based on the prescribed novel.	5x1=5 Marks
14	Two out of four questions on the prescribed novel based on theme, genre, characterization etc (100-120 words each).	2x4=8 Marks
15	One out of two questions based on critical analysis, structure, situation, scene,etc. (300-350 words).	1x7=7 Marks
Internal assessment based on project work/presentation on any two of the following: 1. Poetry reading to be followed by interpretative tasks based on close readingand literary analysis of the text. 2. Critical review of a film/ documentary/book (novella/ play/ poems/ stories/ essays/ articles). Writing an article on a contemporary issue of cultural/ social/ historical importance based on research done by the students under the guidance of the teacher. 3. Conducting a writing workshop focused on short story/poetry/translation/etc. **Note: Teachers may develop their own rubrics to assess the performance of the students objectively.** The parameters for assessing speaking skills as given in the curriculum for General English may be referred to.		2x10=20 Marks

BIOTECHNOLOGY

Maximum Marks=100
Theory=70 Marks
Practical=30 Marks

UNIT I :- Recombinant DNA Technology   15 Marks

- Introduction,
- Tools of DNA Technology,
- Vectors-plasmid, cosmid, phage, BAC and YAC, animal and plant viral vectors,
- Enzymes used in cloning-Restriction enzymes, DNA ligase and Alkaline phosphatase,
- Host cells, Marking recombinant DNA, Introduction of recombinant DNA into host cells,
- Identification of recombinants, DNA library (Elementary Idea)
- DNA isolation from bacteria, Plants and blood, Plasmid DNA isolation, Polymerase chain reaction,
- DNA probes DNA hybridization techniques-Southern and Northern blotting, DNA sequencing-chain termination method, Site directed mutagenesis.(Brief Idea)

UNIT II :- Protein Structure and Engineering   15 Marks

- Introduction to the world of protein,
- 3-D shape of proteins,
- Structure- function relationship in proteins-Chymotrypsin and Hemoglobin,
- Purification of proteins- salting out, chromatography, Dialysis, SDS-PAGE, Western blotting,
- Characterization of proteins- Two dimensional gel electrophoresis, Peptide mapping, Protein sequencing, Mass spectrometry,
- Protein based products- blood products and vaccines, enzymes, antibodies, hormones and growth factors, industrial enzymes, non catalytic proteins, nutraceutical proteins,
- Designing proteins- Improving laundry detergent Subtilisin, Creation of novel proteins, Improving nutritional value of cereals and legumes, Proteomics- basic idea.

UNIT III :- Genomics and Bioinformatics   10 Marks

Introduction, Genomics, Structural genomics and Functional genomics, Genome sequencing projects- Directed sequencing of Bacterial Artificial Chromosome (BAC) contigs, Random shotgun sequencing, Genome Similarity, SNPs and Comparative Genomics.

Introduction to Bioinformatics, Information sources- Major databases (NCBI, Entrez and EMBL), BLAST family of search tools, Analysis using Bioinformatics tools.

CELL CULTURE TECHNOLOGY

UNIT IV :- Microbial cell culture and applications   10 Marks

Introduction, Microbial culture techniques- Nutrient for microbial culture, Culture Procedures, Equipment for microbial culture, Types of microbial culture- Batch culture, Fed-batch culture and Continuous culture, Measurement and kinetics of microbial growth, Microbial growth measurement: quantifying cell concentration.

Scale-up of microbial processes, Isolation of microbial products, Strain isolation, improvement, metgenomics and preservation, Culture Collections Centers, Applications of microbial culture technology, Biosafety issues in Microbial Technology.

UNIT V :- Plant cell culture and applications   10 Marks

Introduction, Cell and Tissue Culture Techniques- Nutritional media, Types of cultures, Plant regeneration pathways, Applications of Cell and Tissue culture- Micro propagation, Virus-free plants, Artificial seeds, Embryo rescue, Haploids and Triploids, Somatic hybrids and cybrids, Production of Secondary metabolites, Somaclonal variation, In vitro plant germplasm conservation,

Gene transfer methods in plants- vector and non-vector mediated, Transgene analysis- a brief idea),

Transgenic plants with beneficial traits- Stress tolerance (biotic and abiotic), Delayed fruit ripening, Male sterility, Transgenic plants as bioreactors (Molecular farming), Metabolic engineering and secondary products, Biosafety issues in Plant Genetic Engineering.

UNIT VI :- Animal cell culture and applications   10 Marks

Introduction, Animal Cell Culture Techniques- Features of animal cell growth in culture, Primary Cell Cultures, Secondary Cell Cultures and cell lines, Types of cell lines, Finite Cell Lines, Continuous Cell Lines, Physical environment for culturing Animal Cells- Temperature, pH, Osmolality, Medium, Serum and Antibiotics, Vessels and Equipments, Characterization of Cell Lines, Storage and Revival of cells.

Methods of Gene Delivery into cells, Scale-up of Animal Culture Process, Applications of

Animal Cell culture, Hybridoma Technology, Stem Cell Technology, Tissue engineering-a brief idea.

Practicals: 30 Marks
1. Precipitation of serum albumins and globulins by ammonium sulphate.
2. Separation of plant pigments/amino acids by paper chromatography
3. Isolation of genomic DNA from bacteria/plant/blood.
4. Analysis of genomic or plasmid DNA using agarose gel electrophoresis
5. Download a DNA, mRNA and a Protein sequence from NCBI, analyze and comment on it.
6. Culture bacteria by Streak Culture Technique.
7. Production and estimation of ethanol from microbial culture.
8. Preparation of explants for plant tissue culture.
9. Preparation of Murashige Skoog medium.
10. Synthesis of artificial seed.
11. Blood group typing.
12. Cell viability test by dye exclusion method.

Project work:
a. Lab visits, sum up the list of equipments, facilities and 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 out by the duo.
c. Access the internet at www. ncbi.nlm.nih.gov or www.googlescholar.com and download the articles form and any of the discipline pertaining to syllabus and critically comment on the downloaded articles.
d. Field visit to plant gene banks of IIIM(Jammu/Srinagar or DRDO(Leh) or and Biotechnology departments of SKUAST Jammu/Kashmir or Universities of J&K/ Ladakh.

Scheme of Evaluation

Internal Assessment:	**10 Marks**
Project work :	06 Marks
Viva:	04 Marks
External Assessment:	**20 Marks**
One Experiment	12 marks
Practical record:	04 Marks
Viva:	02 Marks
Attendance:	02 Marks.

Textbook Suggested
1. textbook of Bio-technology, Published by NCERT New Delhi

MICROBIOLOGY

Maximum Marks: 100

Theory : 70 Marks

Practical: 30 Marks

External : 20 Marks

Internal : 10 Marks

Time: 03 hr

Unit I: Host Microbe Interaction   Marks 11

Chapter I: Host-microbe relationship and disease process: mutualism, commensalism and parasitism. Pathogen virulence, infection, pathogenecity 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. .

ChapterVIII: 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.

Scheme of Evaluation

Internal Assessment: **10 Marks**
Project work :   06 Marks
Viva: 04 Marks
External Assessment: **20 Marks**
One Experiment   12 marks
Practical record: 04 Marks
Viva: 02 Marks
Attendance: 02 Marks.

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   **Time: 3 hours**
Theory: 70 marks   **Practical: 30 marks**

UNIT I: METABOLISM IN BIOCHEMISTRY I:
Chapter 01:
Carbohydrate Metabolism: ATP as energy currency of cell. Aerobic and Anaerobic Glycolysis. Mitochondrial reactions of TCA cycle, Various photosystems for electron transport chain. Elementary idea of Glycogenesis and Glycogenolysis.   **(7 marks)**

Chapter 02:
Amino acid metabolism: Deamination, Decarboxylation and Transamination of Amino acids. **(6 marks)**

UNIT II: METABOLISM IN BIOCHEMISTRY II:
Chapter 01:
Lipid Metabolism: Action of Lipases, beta oxidation of fatty acids, Activation of fatty acids. Atheroseclorosis   **(6 marks)**

Chapter 02:
Elementary idea of salvage and de novo pathway of nucleotides. LeschNyhan Syndrome.   **(4 marks)**
Chapter 03: Metabolic Disorders: Overview of metabolic disorders. Phenylketonuria, Alkaptonuria, Albinism, Tyrosinemia.   **(4 marks)**

UNIT III: CHEMICAL MESSANGERS:
Chapter 01:
Introduction of Hormones. Nature and properties of Hormones. Classification of hormones on the basis of chemical nature. Physiological and Biochemical role of Cortisol, Cortisone, Aldosterone, Progestrone and Testosterone.   **(7 marks)**

Chapter 02:
Peptide hormones: Physiological and Biochemical role of Thyroxine (T3 & T4), Insulin and Glucagon. Role of Vassopresin.   **(6 marks)**

UNIT IV: PLANT BIOCHEMISTRY:
Chapter 01:
Plant Hormones: Physiological and Biochemical role of Plant hormones, Auxins, Gibberlins and Cytokinins.   **(5 marks)**

Chapter 02:
Photosynthesis: Light phase (Cyclic and Non Cyclic Phosphorylation). C3, C4 and CAM pathway.
                                                             (7 marks)

UNIT V: MOLECULAR BIOLOGY AND IMMUNOLOGY:

Chapter 01:

Genomics: Replication of DNA. DNA polymerases and their function. Leading and lagging strand synthesis. Transcription. Initiation, elongation and termination. Activation of aminoacids, aminoacyl tRNA. Initiation elongation and termination of translation. **(8 marks)**

Chapter 02:

Introduction to immunology: Cells of immune system. Immunoglobulins and types (Elementary idea). Humoral and cell mediated immunity. **(4 marks)**

UNIT VI: APPLICATION AND SCOPE OF BIOCHEMISTRY: **(6 marks)**

Genetic engineering, Gene Cloning (Concept), Application of Genetic engineering in Fermentation, Forensic and clinical usage. Various non-communicable diseases like Cancer, AIDS.

PRACTICAL **30 marks**

I. Laboratory course:

1. Handling of Biological samples for various tests and estimations.
2. Centrifugation: basic principles and separation of plasma.
3. Quantitative estimation of Glucose.
4. Paper chromatography of amino acids Alanine and Glycine.
5. Collection of blood samples aseptically.
6. Blood grouping.

II. Institutional visits:

- Lab visits and get to know about the equipment's and lab conditions.
- Get to know about sampling of blood and tissue for various tests.
- The students will interact with the Scholars of the concerned Institutions, have an Interaction. session and develop a write up of the interaction.

III. Project work:

a. Collection of blood samples and separation of plasma and sera using centrifugation.
b. Quantitative estimation of
  Serum Glucose
  Serum Cholestrol
  Serum Bilirubin.
c. Separation of RBC Ghost cell.

Scheme of Evaluation

Internal Assessment:	**10 Marks**
Project work :	06 Marks
Viva:	04 Marks
External Assessment:	**20 Marks**
One Experiment	12 marks
Practical record:	04 Marks
Viva:	02 Marks
Attendance:	02 Marks.

ENVIRONMENTAL SCIENCE

Maximum Marks: 100   **Time: 3 Hours.**
Theory: 70 Marks   **Practical: 30 Marks**

UNIT 1 : Air and Noise Pollution   (10 Marks)
- Air pollution : sources and types
- Impact of air pollution on environment
- Control of air pollution (gaseous and particulate matter)
- Noise pollution : sources and effects on health
- Control of noise pollution

UNIT 2 : Water Pollution   (10 Marks)
- Water pollution : sources and impacts
- Concept of eutrophication and bio magnification
- Marine pollution
- Water pollution control
- Sewage treatment (primary and secondary)

UNIT 3 : Soil Degradation   (10 Marks)
- Soil composition and profile
- Soil types (Indian classification of soils)
- Soil erosion : causes, impacts and control
- Soil pollution : causes and impacts
- Control of soil pollution

UNIT 4 : Solid and Hazardous Waste Management   (10 Marks)
- Solid Wastes: sources, generation and impacts.
- Disposal of solid wastes (composting, incineration, sanitary landfill)
- Management of solid waste.
- Hazardous waste : definition and characteristics
- Management of hazardous waste (deep well injection, plasma torch, incineration)

UNIT 5 : Biodiversity Management   (10 Marks)
- Biodiversity and its levels
- Importance of biodiversity
- Threats to biodiversity : causes and impacts
- Concept of threatened species (as per IUCN : extinct, endangered, vulnerable, rare)
- Biodiversity conservation : in-situ, ex-situ

UNIT 6 : Global Environmental Issues   **(10 Marks)**

- Climate change and global warming : causes, impacts and international efforts for combating global warming (Kyoto protocol)
- Ozone layer depletion: causes, impacts and global efforts for control (Montreal protocol)
- Acid rain: causes, impacts and control.
- Smog and its types.
- Desertification and its control.

UNIT 7 : Environmental Management and Legislation: **(10 Marks)**

- Concept of sustainable development
- Environmental Impact Assessment: Scope and Key Elements.
- Salient features of Water (Prevention and Control of Pollution) Act, 1974.
- Salient features of Air (Prevention and Control of Pollution) Act, 1981.
- Salient features of Environment Protection Act, 1986.

PRACTICALS: **(30 Marks)**

1. Determination of pH of different water and soil samples.

2. Determination of soil texture using feel method.

3. Documentation of macrophytic aquatic plants.

4. Visit to a nearby lake/wetland/river/hydropower plant and preparation of a field report.

5. Collection of data regarding different types of solid waste generated in your locality.

6. Compilation of names of different endangered and endemic plant and animal species of your locality.

Scheme of Evaluation

Internal Assessment:	**10 Marks**	
Project work :	06 Marks	
Viva:	04 Marks	
External Assessment:	**20 Marks**	
One Experiment	12 marks	
Practical record:	04 Marks	
Viva:	02 Marks	
Attendance:	02 Marks.	

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   Scheme of Assessment

Time Allowed: 3 Hours

Maximum Marks: 80
Internal Assesment: 20

I. Trisharanagamana (Refuge to Three Jewels)	Marks: 08
II. Panchashila	Marks: 08
III. Karma and Re-birth	Marks: 08
IV. Post Gautama Buddha Preceptors	Marks: 08
V. Buddhism and Modern World	Marks: 08
VI. Introduction to Sacred Books of Buddhism	Marks: 08
VII. Introduction to Sadalankara (Six Acharyas of Buddhism	Marks: 08
VIII. Bodhichitta	Marks: 08
IX. Paramita	Marks: 08
X. Introduction to the Buddhist Art and Architecture	Marks: 08

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) Shvenavastra

(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

مضمۆن : کأشُر   جماتھ : بیُہم   وَق: 3 گأنٹِہ   نمبر : 80

* نِصابی کِتابہ منٛز دِنیہ آمتہ نثریہ تہ شاعٔری ہِندٕ حوالہ یٖن (44) نمبرن ہِندی سوال پُرٛژِہنہ ۔

* لیکھٕنچ مہارت تہ تخلیقی صلاحیَتہ پرکھاونہ بٲپتھ یٖن (18) نمبرن ہِندی سوال پُرٛژِہنہ ۔

* گرامٔرس متعلق یٖن (18) نمبرن ہِندی سوال پرٛژِہنہ ۔

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حصہٕ (الف) : نِصابی کِتاب

سوال نمبر(1): سبق تہ لیکھاری سُند حوالہ دِتھ دِنہ آمٕتو دۆیو نثری پارو منٛز اُکچھ وَرٛژٕہنٛے ۔ ------- (6) نمبر

سوال نمبر(2): بُنہِ نثری سبقہ منٛز کرٕنہ آمٕس اقتباس متعلق پُرٛژِہنہ آمتین زورن سوالن ہِندی جواب ژٲرِنی ---------- (4=1+1+1+1) نمبر

سوال نمبر(3): بُنہِ نثری سبٕکٕک خُلاصہٕ / تنقیدی جایٖزٕ یا کأشہِ کِردارس متعلق نوٹ ۔

(60 پیٹھ 80 لفظن تام) ---------- (5) نمبر

سوال نمبر(4): نِصابی کِتابہ منٛز شٲمٕل نثری سبقن پیٹھ کنہِ دِنہِ آمٕتو زٛورٕ مشٕقی سوالَو منٛز دۆن ہُند جواب لیکھُن ۔ ------- (4=2+2) نمبر

سوال نمبر(5): نِصابس منٛز شٲمٕل ترٛیٶ نثر نگارو منٛز اٴکس پیٹھ نوٹ لیکھُن ۔

(60 پیٹھ 80 لفظن تام) --------- (5) نمبر

سوال نمبر(6): نِصابی کِتابہ منٛز کرٕنہ آمٕتو ترٛیٶ شعرو منٛز (شاعٔر سُند حوالہ دِتھ) دۆن شعرن ہٕنز تشریٲح کرِنی ۔ ---------- (6) نمبر

سوال نمبر(7): نصابس منز شامل ترتيو شاعرو منز أكس پيٹھ نوٹ ۔   (یا)

دِنہٕ آمٕژ وۄتربٕیو شعرٕ صِنفٕو منز أكس پيٹھ نوٹ (60 پيٹھ 80 لفظن تام)۔۔۔۔۔۔۔ (5) نمبر

سوال نمبر(8): نصأبی كِتابہ منز شامل منظوٕمن ہِندِس أُخرس پيٹھ دِنہٕ آمتیو زۄرو مشقی سوالَو منزِ دۄن ہُند
جواب لیٚكھٕن ۔۔۔۔۔۔۔۔۔۔۔۔ (4=2+2) نمبر

سوال نمبر(9): پاژِن مۄخصر سوالن ہِندی جواب لیٚكھٕز ۔۔۔۔۔۔۔۔۔۔ (5=1+1+1+1) نمبر

حصہٕ (ب) :   لیٚكھٕچ مہارت

سوال نمبر(10): دِنہٕ آمٕتیو تربٕیو عنوانَو منزِ أُكس پيٹھ مضمون لیٚكھٕن ۔
(100 پيٹھ 150 لفظن تام)۔۔۔۔۔۔۔۔۔۔ (8) نمبر

سوال نمبر(11): چِٹھی یا درخاس لیٚكھٕن ۔۔۔۔۔۔۔۔۔۔ (6) نمبر

سوال نمبر(12): اخبأری رِپورٹ ؍ میٹنگہٕ یا كُنہٕ تقریبہ ہٕنزِ کاروأئی ؍ اِشتہار ؍ ای ۔ میل یا
ایس ۔ ایم ۔ ایس لیٚكھٕن (کانٛہہ اکھ)۔۔۔۔۔۔۔۔۔۔ (4) نمبر

حصہٕ (ج) : گرامر

سوال نمبر(13): بُہمہٕ جماعژ ہٕنزِ نصأبی كِتابہ منز شامل گرامر کہِ حوالہٕ ژودہو مۄخصر سوالہٕ منزِ نۄن ہِندی جواب
لیٚكھٕز ۔۔۔۔۔۔۔۔۔۔ (18 =2 x 9) نمبر

✱✱✱✱✱✱✱✱

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دأخلی تشخیص (Internal Assessment) ۔۔۔۔۔۔ نمبر (20)

اَپچھ باگئے پھٔے یتھٕہ پاٹھی:

1- وقتٕہ وقتٕہ تشخیص کرُن (Periodic Assessment)

یتھ حِصّہ پیٹھ مزید باگئے یتھٕہ پاٹھی کرنہٕ:

(i) کاغذی تٕہ قلمی تشخیص (Pen and Paper Assessment): یتھ حِصّہ منٛز تراوِ وٟستاد طالِب علمن مذکورٕ مضمونس متعلق کیٛنہہ موخصر سوال پیٛمہِ پٹی تہِنٛد بوزن تٕہ بولن ول، تخلیقی ہُنر تٕہ گرامٕرچ زان پرکھنہٕ پیٛہ ۔۔۔۔۔۔۔ نمبر (5)

(ii) کثیرٕ پہلوٕ تشخیص (Multiple Assessment): یتھ حِصّہ منٛز کرِ وٟستاد طالِب علمن کوٟیز (Quiz)، زبانی امتحان (Oral Test)، بحث و مباحثٕہ (Group Discussion)، بیت بازی تٕہ سکوٚلٕہ نیبٕر کینٛژٕن کامٕن (Outdoor Activities) ہُنر پرکھ۔ یہ مشق پھٔے خاصکرِ تھ طالِب علمن منٛز بوزٕنچ تٕہ بوٚلٕچٕن صلاحیٛٔژٕن ووتھٕہ واشر دِنہٕ باپتھ ضرٛوٗری ۔۔۔۔۔۔۔ نمبر (5)

2- پورٹ فولیو (Portfolio): امٕہ نوٚعیٖتیٖکس تشخیص دوران پَرکھہِ وٟستاد سکوٚل، جماعٕت تٕہ غأر نصابی کامٕن تٕہ مشقن دوران طالِب علمن ہٕنٛز کلٟبم شِرکت تٕہ کارکرِدگی ۔۔۔۔۔۔۔ نمبر (5)

3- موضوٗعی ووتھٕہ واشر (Subject Enrichment): یتھ حِصّہ منٛز پَرکھہِ وٟستاد طالِب علمن ہُنٛد بوزن، بولن تٕہ لیٖکھن ول تٕہ امٕہ باپتھ کرِ تمن کیٛنہہ علمی سرگرمیہٕ تفویض پیٛمہِ پٹی یہِنٛد مذکورٕ مضمونس نِسبت کلٟہم ووتھٕہ واشرٕک انداز کرنہٕ پیٛہ ۔۔۔۔۔۔۔ نمبر (5)

(نوٹ): وٟستاد دِس چھُ لأزٕی من مذکورٕ تشخیصن ہِنٛدِس بُنیادِس پیٹھ طالِب علمن ہٕنٛز پَرکھ کرِنٕی تٕہ امیٖک کلٟہم ریکارڈ سأنِتہ تھأوِتھ تِمن نمبر دِنٕی۔

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.

PRACTICAL

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

Marks 09

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

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 :

i) Key board of Typing machine/Computer.

ii) Function of different parts of machine, Type writer/Computer

iii) Table setting and

iv) 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.

1ST 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.

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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" Test	10 marks
2nd 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.

<div align="right">

Marks: 14
Periods: 22

</div>

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.

<div align="right">

Marks: 14
Periods: 22

</div>

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 1: 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 CONSTRCTION

- 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   Time: 3 hours

Practicals: Marks 30

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 extesion 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

UNIT V: 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, bolders, pamphlets.

Marks: 30

Periods: 24

FOOD TECHNOLOGY

Maximum Marks: 100
Theory: 70
Practical: 30

Unit-1: Fruits and Vegetable Processing Technology: (20 Marks)

- Composition & Nutritional importance of fruits and vegetables in human diet.
- Common operations in post harvest management & processing- pre cooling cleaning, sorting, grading, peeling, coring and Slicing.
- Storage of fresh fruits and vegetables-Cold Storage, CAS.
- Ingredients and process for manufacture of Jams, Jellies, Marmalades, Preserves, candies, Pickles and Chutneys.
- Tomato Processing- Ingredients and process for manufacture of tomato ketchup, sauce, puree and paste.
- Juices-Raw material and processing for preparation of different fruit juices- Squash, Nectar, Cordial and Concentrate.
- Common operations of drying and dehydration of fruits and vegetables. Pretreatments (blanching, Sulfuring ad fumigation), and storage of dried products.

Unit 2: Cereal and Pulse Processing Technology   (15 marks)

- Wheat: Structure, types and milling of wheat.
- Rice: Structure, Parboiling and milling.
- Maize: Structure and milling.
- Pluses: Nutritional importance and anti-nutritional factors in pulses. Pulse milling.

Unit 3: Milk and Milk Products Processing Technology: (15 marks)

- Milk: Sources, composition and nutritive value.
- Factors effecting composition of milk.
- Milk processing- Collection, chilling, standardization, homogenization and pasteurization.
- Milk products-preparation and storage of curd, ice cream and paneer, butter and gee.
- CIP System in dairy industry.

Unit 4: Meat, Fish and Poultry Processing Technology: (10 marks)

- Composition and nutritive value of meat, fish and poultry.
- Ante- mortem inspection of meat, animals and methods of slaughtering.
- Preservation of Meat, Fish and Poultry-Pickling, Smoking, Curing, Freezing, Canning, Drying and Salting.
- Introduction to traditional meat products of J&K.
- Egg: Structure, composition, nutritive value and spoilage.

Unit 5: Bakery and Confectionary Technology: (10 marks)

- Raw materials and their role in bakery products.
- Types, preparation and quality evaluation of bread, biscuits and cakes. Staling of bread.
- Confectionery Products: Different ingredients and processes for making of candy, chocolates and HFCS (High Fructose Corn Syrup).
- Mallard reaction and caramelization in bakery products.

Practical;s: (30 marks)

1. Preparation of Jams and pickles.
2. Preparation of tomato ketchup and puree.
3. Preparation and preservation of fruit juices.
4. Drying of locally available fruits and vegetables.
5. Determination of physical characteristics of wheat, rice and maize (1000 kernel weight and bulk density).
6. Estimation of wheat flour quality- Moisture content and gluten content.
7. Determination of Fat, SNF (Solid not fat), Specific Gravity and COB in milk.
8. Preparation of dahi, paneer and icecream.
9. Candling and grading of egg.
10. Preparation of fish/meat pickle.
11. Preparation and evaluation of confectionary products- Candy, toffee.
12. Visit to different food processing industries.

Scheme of Evaluation

Internal Assessment:	**10 Marks**
Project work :	06 Marks
Viva:	04 Marks
External Assessment:	**20 Marks**
One Experiment	12 marks
Practical record:	04 Marks
Viva:	02 Marks
Attendance:	02 Marks.

PUNJABI

Scheme of Assessment

Maximum Marks: 80

Time Allowed: 3 Hours

Internal Assesment: 20

1. ਪੁਸਤਕ 'ਕਾਵਿ ਪ੍ਰਵਾਹ' ਵਿੱਚੋਂ — 30 Marks

2. ਪੁਸਤਕ 'ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ' ਵਿੱਚੋਂ — 26 Marks

3. ਪੁਸਤਕ 'ਆਰਸੀ' ਵਿੱਚੋਂ — 26 Marks

4. ਵਿਆਕਰਨਕ ਭਾਗ — 18 Marks

   (i) 'ਕਾਵਿ ਪ੍ਰਵਾਹ' ਪੁਸਤਕ ਵਿੱਚੋਂ 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 ਵਿੱਚੋਂ ਹੇਠ ਲਿਖੀਆਂ 3 ਕਹਾਣੀਆਂ (Non-Evaluative) ਹਨ।

      (ੳ) ਸਫ਼ਰ

      (ਅ) ਕੇ ਨਹੀਂ ਲਿਖਣੀ

      (ੲ) ਸੜਕ ਵਾਪਸ ਜਾਂਦੀ ਹੈ।

   (iii) 'ਆਰਸੀ' (ਸਵੈਜੀਵਨੀ) ਪ੍ਰਿੰ. ਤੇਜਾ ਸਿੰਘ।

   (iv) ਵਿਆਕਰਨ

      (1) ਲੇਖ-ਰਚਨਾ

      (2) ਬਹੁਅਰਥਕ 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 ਐਂਡ ਕੇ ਕਲਚਰਲ ਅਕੈਡਮੀ, ਜੰਮੂ।

3. ਆਰਸੀ (ਸਵੈਜੀਵਨੀ) ਪ੍ਰਿੰ. ਤੇਜਾ ਸਿੰਘ, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।

4. ਪੰਜਾਬੀ ਵਿਆਕਰਣ ਅਤੇ ਲੇਖ ਚਰਚਨਾ। by ਨਰਿੰਦਰ ਸਿੰਘ 'ਦੁੱਗਲ'।

1.'ਕਾਵਿ -ਪਰਵਾਹ ਪ੍ਰਸੰਗ ਪੁਸਤਕ ਵਿੱਚੋਂ ਇੱਕ ਬੰਦ ਦੀ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ ਕਰੋ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ)   (4 ਅੰਕ)

2. ਕਾਵਿ ਪ੍ਰਵਹ ਪੁਸਤਕ ਵਿੱਚੋਂ ਇੱਕ ਕਵਿਤਾ ਦਾ ਸਾਰ ਲਿਖੋ (ਕੋਈ ਦੋ ਵਿੱਚੋਂ ਇੱਕ)

   ਜਾਂ

'ਕਾਵਿ ਪ੍ਰਵਾਹ ਪੁਸਤਕ ਵਿੱਚੋਂ ਇੱਕ ਕਵੀ ਦੀ ਜੀਵਨੀ ਉੱਤੇ ਨੇਟ ਲਿਖੋ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) (4 ਅੰਕ)

3. ਚੋਣਵੀਆਂ ' ਪੰਜਾਬੀ ਕਾਣੀਆਂ ਵਿੱਚੋਂ ਕਾਣੀ ਦੇ ਵਿਸ਼ੇ ਉੱਤੇ ਨੇਟ ਲਿਖੋ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) (4ਅੰਕ)

4. ਚੋਣਵੀ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ ਵਿੱਚੋਂ ਕਹਾਣੀ ਦੇ ਪਾਤਰਾਂ ਵਿੱਚੋਂ ਪਾਤਰ ਚਿਤਰਨ ਕਰੋ (ਕਈ ਤਿੰਨ ਵਿੱਚੋਂ ਇੱਕ)। ((4 ਅੰਕ))

5. 'ਆਰਸੀ ਪੁਸਤਕ ਵਿੱਚੋਂ ਕੋਈ ਇਕ ਲੇਖ ਲਿਖੋ.   (4ਅੰਕ)

 ਜਾਂ

'ਆਰਸੀ ਪੁਸਤਕ ਵਿੱਚੋਂ ਇੱਕ ਕਾਵਿ-ਬੰਦ ਦੀ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ ਕਰੋ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ).   (4 ਅੰਕ)

6. 'ਵਿਆਕਰਣ' ਵਿੱਚੋਂ ਇੱਕ ਲੇਖ ਰਚਨਾ ਕਰੋ ਤਿੰਨ ਚੋ ਇੱਕ.   (4 ਅੰਕ)

7. ਵਿਆਕਰਣ ਵਿਸ਼ੇ ਵਿੱਚ ਇੱਕ ਪੱਤਰ/ਅਰਜੀ ਲਿਖੋ.   (4 ਅੰਕ)

(Short Answer) ਸੰਖੇਪ ਪ੍ਰਸ਼ਨ

8.'ਕਾਵਿ ਪਰਵਾਹ ਚੋ ਕੋਈ ਦੋ ਪ੍ਰਸ਼ਨ ਲਿਖੋ.   (3X2=6)ਅੰਕ

9. ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ ਵਿੱਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਕਰੋ . (3X2=6)ਅੰਕ

10.ਆਰਸੀ ਵਿੱਚੋਂ ਕੋਈ ਇੱਕ ਪ੍ਰਸ਼ਨ ਕਰੋ.(3ਅੰਕ)

11. ਵਿਆਕਰਣ ਵਿੱਚੋਂ ਬੂਹਾ ਆਰਥਿਕ ਸ਼ਬਦ ਲਿਖੋ .   (3 ਅੰਕ)

(Very Short) ਅ ਸੰਖੇਪ- ਪ੍ਰਸ਼ਨ

12. ਕਾਵਿ - ਪਰਵਾਹ ਵਿੱਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਲਿਖੋ.   (2 X2=4) ਅੰਕ

13. ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ ਵਿੱਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ. (2X2=4)ਅੰਕ

14. 'ਆਰਸੀ' ਵਿੱਚੋਂ ਤਿੰਨ ਪ੍ਰਸ਼ਨ ਲਿਖੇ. (2x2=4)ਅੰਕ

15.   ਵਿਆਕਰਣ ਵਿੱਚੋਂ ਕੋਈ ਦੋ ਪ੍ਰਸ਼ਨ ਕਰੋ.(2X2=4)ਅੰਕ

16. ਕਿਸੇ ਇੱਕ ਵਾਰਤਕ ਬੰਦ (ਆਰਸੀ ਵਿੱਚੋਂ) ਦਾ ਸਿਰਲੇਖ ਦਸ ਕੇ ਪ੍ਰਸ਼ਨ ਦੇ ਉੱਤਰ ਦਿਓ. (07)ਅੰਕ

  (Multiple choice)ਬਹੁ ਪੂਕਰਮੀ ਵਿਕਲਪ

17. ਵਿਆਕਰਣ ਭਾਗ ਵਿੱਚੋਂ ਨੋ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ. (1x9=9) ਅੰਕ

DOGRI

Marks : 80   Time : 3 Hours

(बड्डे जवाब आह्ले सुआल)

सुआल -1   5+5+5=15

(क) 'इन्दर-धनख'किताबै च संकलत काव्य-रचनाएं चा कुसै इक पद्यांश गी चंगी चाल्ली पढ़ियै पुच्छे गेदे सुआलें दे जवाब देओ ।

(ख)   'इन्दर-धनख'किताबै च संकलत निबंधें थमां कुसै इक गद्यांश गी चंगी चाल्ली पढ़ियै पुच्छे गेदे सुआलें दे जवाब देओ ।

(ग) 'इन्दर-धनख'किताबै च संकलत क्हानियें थमां कुसै इक गद्यांश गी चंगी चाल्ली पढ़ियै पुच्छे गेदे सुआलें दे जवाब देओ ।

सुआल -2   4+4+4+4=16

    (क) 'इन्दर-धनख'किताबै च संकलत कुसै इक कवि दा जीवन परिचे जां सार (विकल्प समेत)
    (ख) 'इन्दर-धनख'किताबै च संकलत कुसै इक क्हानी दा सार जां क्हानीकार दा परिचे (विकल्प समेत)
    (ग) 'इन्दर-धनख'किताबै च संकलत कुसै इक निबंधकार दा जीवन परिचे ते साहित्यक परिचे (विकल्प समेत)
    (घ) 'इन्दर-धनख'किताबै च संकलत कुसै इक गज़ल-गो शायर दी शायरी बारै सुआल जां जीवनपरिचे (विकल्प समेत)

(दरम्याने जवाब आह्ले सुआल)

सुआल -3 'इन्दर-धनख'किताबै दियें

    (क)   काव्य-रचनाएं बारै 3 सुआल.. 3+3+3 = 9
    (ख)   निबंधें बारै 3 सुआल... 3+3+3 = 9
    (ग)   क्हानियें बारै 3 सुआल... 3+3+3 = 9

(लौह्के जवाब आह्ले सुआल)

सुआल- 4 'इन्दर-धनख'किताबै दियें

    (क)   काव्य-रचनाएं बारै 2 सुआल... 2+2 = 4
    (ख)   निबंधें बारै 2 सुआल.. 2+2 = 4
    (ग)   क्हानियें बारै 2 सुआल... 2+2 = 4

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सुआल -5 व्याकरण

अंदरूनी मूल्यांकन (INTERNAL ASSESSMENT)

SANSKRIT

संस्कृतम्

पूर्णाङ्काः = 80   आन्तरिकम् =20

क्र.सं.	भागः	विषयस्य विवरणम्	अङ्काः
1	भाग – क (अपठित - अवबोधः)	ज्ञानात्मकं विश्लेषणात्मकं शब्द- अवबोधात्मकं सृजनात्मकञ्च ।	08
2	भाग – ख (रचनात्मक - कार्यम्)	1. हिन्दी - संस्कृत - अनुवादः ।	04
		2. संस्कृत -हिन्दी - अनुवादः ।	04
		3. संस्कृतसाहित्यात् रचनात्मकप्रश्नः ।	04
3	भाग – ग (अनुप्रयुक्त - व्याकरणम्)	1. हल् सन्धिः, विसर्गसन्धिः ।	04
		2. हलन्तशब्दरूप – राजन्,आत्मन्, विद्वस् , चन्द्रमस्। सर्वनामशब्दरूप – अस्मद् ,युष्मद्, भवत् (पुं.स्त्री.), एतद्, किम्।	04
		3. धातुरूप – दा, ज्ञा, लिख्, खाद्, पत्, कृ, चल् (लट् , लोट् , लृट् एवं लङ्ग- लकारेषु) ।	04
		4. समासः –बहुब्रीहिः , अव्ययीभावः ।	04
		5. प्रत्ययः – शतृ –शानच् , तव्यत् अनीयर् ,यत् ।	04
4	भाग – घ (पठित- अवबोधः)	**प्रतिमानाटकम् – अङ्कद्वयम् (प्रथमः द्वितीयः च) ।**	
		1. द्वयोः श्लोकयोः सप्रसङ्गव्याख्या ।	08
		2. अङ्कस्य सारः / पात्र-परिचयः	04
		3. श्लोकानुवादः (एकस्य श्लोकस्य) ।	03
		4. वस्तुनिष्ठप्रश्नाः ।	03
		मेघदूतम् – (1-25 श्लोकाः)	
		1. सप्रसङ्ग व्याख्या – (एकस्य श्लोकस्य) 1-15 श्लोकेषु ।	05
		2. श्लोकानुवादः(16-25, एकस्य श्लोकस्य) ।	04
		3. वस्तुनिष्ठप्रश्नाः ।	03
5	भाग – ङ (साहित्यम्)	1. क. संस्कृत – साहित्यस्य उत्पत्तिः । ख. रामायणस्य महाभारतस्य च महाकाव्ययोः सङ्क्षिप्तवर्णनम् । ग. संस्कृत- साहित्यस्य महत्त्वम् ।	04
		2. नाट्यकाराणां जीवनपरिचयः कृतयश्च । (सङ्क्षिप्त-परिचयः) क. शूद्रकः । ख. अश्वघोषः । ग. श्रीहर्षः ।	03
		3.गद्यकाराणां जीवनपरिचयः कृतयश्च । (सङ्क्षिप्त-परिचयः) क. दण्डी । ख. सुबन्धुः । ग. बाणभट्टः ।	03
	पूर्णाङ्काः		80

आन्तरिक – मूल्याङ्कनम् (२० अङ्काः)

"श्रवण-भाषण-पठन-लेखनकौशलानां मूल्याङ्कनम्" - चतुर्णां कौशलानां मूल्याङ्कनं २० (विंशतिः) अङ्कानां कृते भविष्यति । अभ्यासः मूल्याङ्कनं च निर्धारितेषु पाठ्यपुस्तकेषु समाविष्टानां क्रियाकलापानाम् आधारेण तथा च विद्यालये उपलब्धानां विविधानां संसाधनानां, तन्त्रांशानां च आश्रयं स्वीकृत्य करणीयम् । **आन्तरिक-मूल्याङ्कनं संस्कृत-भाषायाम् एव भवेत् ।**

श्रवणं भाषणं कौशलयोः मूल्याङ्कनम् : Assessment of Listening and Speaking Skills   **(15)**

च, अतः, एव, इति, अस्मि, यदि - तर्हि, यथा – तथा,तः - पर्यन्तम् (वाक्यपत्रस्य उपयोगेन वाक्यानि वाचनीयानि ।)

अद्य आरभ्य, कृते - (वाक्यपत्रस्य उपयोगः करणीयः)

भूतकालीनक्रियापदानां पाठनम् ।

गतवान् - पठितवान् - लिखितवान् ।

गतवती - पठितवती - लिखितवती ।

सः गतवान् - सा गतवती परिवर्तनाभ्यासः ।

अहं गतवान् । अहं गतवती ।

क्रियापदानां परिवर्तनाभ्यासः ।

यथा - गच्छति गतवान्, गतवती ।

विशेषपाठनम् - आसीत्, आसन्, आसम्, आस्म, एकः, एका, एकम् – सङ्ख्यासु लिङ्गभेदः ज्ञापनीयः ।

भोजनसम्बन्धिशब्दाः । सम्भाषणप्रदर्शनम् ।सङ्ख्या १-१०० , समयः – १:०० , ०२:०० सपाद, सार्ध, पादोन, पञ्चोन, दशोन, पञ्चाधिक, दशाधिक । वाहनानां नामानि । तृतीयाविभक्तिपाठनम् - दण्डेन, हस्तेन.....

(वाक्यपत्रस्य आधारेण वाक्यानि वाचनीयानि) सह, विना ।

अद्यतन, ह्यस्तन, श्वस्तन, पूर्वतन, इदानीन्तन भविष्यत्कालीनक्रियापदानां पाठनम् । गमिष्यति, पठिष्यति, लेखिष्यति । (पत्रकसाहाय्येन)

गत, आगामि, स्म, अभवत् । वेशभूषाणां नामानि ।

क्त्वाप्रयोगः यथा - बालकः पठित्वा लिखति । (पत्रकसाहाय्येन), यदा - तदा । बन्धुवाचकशब्दाः, वर्णाः, रुचयः ।

पुरातनम् - नूतनम्, बहु - किञ्चित्, दीर्घः - ह्स्वः, उन्नतः - वामनः, स्थूलः - कृशः, ईदृश, तादृश, कीदृश ?

तुमुन् यथा – बालकः पठितुं विद्यालयं गच्छति । (पत्रकसाहाय्येन)

किन्तु, निश्चयेन, किल, बहुशः, शक्नोति ।

विशेषणविशेष्यभावस्य अभ्यासः ।

सः उत्तमः बालकः । सा उत्तमा बालिका । तत् उत्तमं पुस्तकम् ।

विशेषणविशेष्ययोः समानविभक्तित्वं पाठनीयम् । उत्तमं बालकम् आह्वयतु । उत्तमस्य बालकस्य पुस्तकम् ।

क्त्वा - तुमुन् – परिवर्तनम् । छात्रः विद्यालयं गत्वा पठति , छात्रः पठितुं विद्यालयं गच्छति ।

बहिः - अन्तः, रिक्तम् – पूर्णम् । इतोऽपि, इत्युक्ते, अन्ते, चेत्, नो चेत् ।

आरोग्यसम्बन्धिशब्दाः - वैद्यरोगिसम्भाषणम् । प्रश्नोत्तरस्पर्धा । ऋषीणां नामानि/वैज्ञानीकानां नामानि / संस्कृतकवीनां नामानि ।

कथा -शिक्षकः एकां कथां वदति । अनन्तरं छात्रेषु एकैकः तस्याः कथायाः एकैकं वाक्यम् उक्त्वा कथां सम्पूर्णां करोति।

संख्या – दीर्घसंख्यापाठनम् ।

वारम्, अतः - यतः परिवर्तनाभ्यासः यद्यपि - तथापि, यत्र – तत्र, कति - कियद् एतयोः भेद।

यावत् - तावत्, यत् - तत्, यः - सः, या – सा ।

अस्माकम्, ।

चर्चा (संस्कृतम् आवश्यकम् – संस्कृतं नावश्यकम् , इत्यादि विषयेषु चर्चा ।)। संख्यासु लिङ्गभेदः । एकः, एका, एकम् । द्वौ, द्वे, द्वे । त्रयः, तिस्रः, त्रीणि । चत्वारः, चतस्रः, चत्वारि । शिक्षकः - अहं वैद्यः, मम नाम सुरेशः

छात्राः तमुद्दिश्य प्रश्नान् पृच्छेयुः ।।तव्यत्- अनीयर् । अनन्त्यकथारचना ।

शिक्षकानां कृते :- कृपया शिक्षकाः शिक्षणकौशलानि उपयुज्य अभिनयपूर्वकम् एतान् बिन्दून् पाठयेयुः येन छात्राः सहजतया सम्भाषणशीलाः भवेयुः।

कृपया शिक्षक शिक्षण कौशलों का सही उपयोग करते हुए अभिनय पूर्वक इन बिंदुओं को पढ़ाएं , जिससे छात्र सहज ही संस्कृत में संभाषणशील हो जाएं।

परियोजना-कार्यम् :- Project work   **(05)**

कस्मिंश्चित् एकस्मिन् विषये – यथा -

1. जम्मूकाशमीरे विद्यमानाः संस्कृतसंस्थाः ।
2. भारते विद्यमानाः संस्कृतसंस्थाः ।
3. संस्कृते समुपलब्धाः ऐतिहासिकग्रन्थाः ।
4. संस्कृतस्य जम्मूकाश्मीरस्य विद्वांसः ।
5. जम्मूकाश्मीरस्य ऐतिहासिक सांस्कृतिकं मूल्यम् ।
6. पर्यावरणस्य संरक्षणे मम भूमिका ।
7. आपदा प्रबन्धने मम भूमिका ।

Persian

Note: Sections A, B and C shall be asked from بخشِ اول and Section D from بخشِ دوم of the prescribed textbook published by JKBOSE. The selected chapters from بخشِ دوم are as under:

بخشِ نثر
1- به نام خدا
2- پنیرِ طیب بابهار
3- حکایت از گلستان -۱
۴- حکایت از گلستان -۲
۵- حکایت از گلستان -۶
۶- شام در دسترسِ وران؟
۷- حکایت از رسالهٔ دلکشاد -۲
۸- حکایت از رسالهٔ دلگشاء -۳
۹- روباه و خروسی
۱۰- ابن سینا و ابن سلویه

بخشِ نظم
۱- گل، آئینه، قرآن
۲- نوبتِ دیدار
۳- آرام جان
۴- بی شائی این جهان
۵- دوست
۶- مادر
۷- فصیلت
۸- لروبن

Section A: Language   11 Marks
Q1. Translation of four Persian sentences into Urdu/English/Hindi out of six sentences.

(4x1=4 marks)

Q2. Translation of three Urdu/English sentences into Persian out of five sentences.

(3x1=3 marks)

Q3. One Persian passage followed by four questions of one marks each will be asked out of five questions.

(4x1=4 marks)

Section B Writing Skills   15 Marks
Q4. To write the meaning of three Persian words in Urdu/English/Hindi and use them in Persian sentences out of five words.

(3x1=3 marks)

Q5. Arrangement of words in order to make four meaningful sentences.

140

Q6. Four fill in the blanks type questions.

(4x1=4 marks)

Q7. Writing an essay in Persian of five sentences (one out of three).

(4 marks)

Section C: Applied Grammar   **12 Marks**

Q8. Conjugation of two infinitives out of three with respect to past tense.

(2x2 ½ =5 marks)

Q9. Conjugation of two infinitives out of three with respect to present tense.

(2x2 ½ =5 marks)

Q10. To make tw0 verbs out of four.

(2x1 =2 marks)

Section D Literature   **42 Marks**

Q11. Translation of any three Persian passages into Urdu/ English/Hindi out of four.

(3x4 =12 marks)

Q12. Translation of any two Urdu/English/passage into Persian.

(2x4 =8 marks)

Q13. Translation of any two verse into Urdu/English/ Hindi out of three.

(2x3 =6 marks)

Q14. Translation and explanation with reference to context of two verses into Urdu/English out of three.

(2x5 =10 marks)

Q15. One objective type question consisting of six MCQ'S based on prescribed syllabus.

(6x1 =6 marks)

Internal Assessment   **(20 Marks)**
- Assessment of listening, reading writing and speaking skills
- Pen paper tests/ discussion and role play/ presentation on given topics/ debate/ seminar/ conference/ etc
- Project work like a short essay on any given topics in Persian language.
- Portfolio of students.

ARABIC

Time: 3 Hours   Max. Marks: 100 (80 Theory + 20 Internal Assessment)

PART I: ADVANCED READING SKILLS   10 MARKS

1. Identification of nouns, verbs, prepositions from the passage extracted from the prescribed text book or from an unseen passage with the internal choice.

PART II: EFFECTIVE WRITING SKILLS   20 MARKS

2. To write a short paragraph in Arabic with internal choice.   5 Marks

3. Meaning of ten words from the prose portion with internal choice.   5 Marks

4. Five simple questions in Arabic language to be answered in Arabic.   5 Marks

5. Translation of five simple sentences of English/Urdu into Arabic.   5 Marks

PART III: APPLIED GRAMMAR   20 MARKS

6. The topics are:

ابواب الفعل الثلاثى المجرد۔
ابواب الفعل الرباعى المجرد۔

المشتقات: اسم الفاعل, اسم المفعول, اسم الصفة, اسم التفضيل۔
الحروف المشبهة بالفعل, الأفعال الناقصة, نواصب الفعل, جوازم الفعل, حروف الجر, التوابع والإعراب

PART IV: AI-QURAN & AL-HADITH   10 MARKS

7. Translation of Quranic Verses of the prescribed textbook into Urdu/English with internal choice.
                                                                            5 Marks

8. Translation of Al-Hadith and Phrases of Arabic from the prescribed textbook into Urdu/English with internal choice.   5 Marks

PART V: POETRY SECTION   5 MARKS

9. Explanation with reference to the context of two poetry sections out of three into Urdu/English.
                                                                            5 Marks

PART VI: PROSE SECTION   15 MARKS

10. Explanation with reference to the context in Urdu/English based on passage extracted from the prose section of the prescribed textbook with internal choice.   5 Marks

11. One question regarding the sum and substance of the topics of prose section with internal choice.
                                                                            4 Marks

12. Six multiple choice/objective type questions from prose portion of the prescribed textbook.
                                                                            6 Marks

INTERNAL ASSESSMENT   **20 MARKS**

Apart from the prescribed textbook, the subject teacher can plan their own activities and create their own material for assessing the listening, reading, writing and speaking skills and students shall be evaluated throughout the academic session. It may include

1.   **Periodic pen paper tests, quizzes, group discussions.**
2.   **Listening and speaking activities.**
3.   **Participation in debates and seminars/conferences, etc.**
4.   **Project work on any given topic in Arabic language/literature/culture.**
5.   **Portfolio of students.**

Prescribed Textbook

"Tasheelul Arabia Part-2 " for Class 12th published by Jammu& Kashmir Board of School Education.

نصاب برائے بارہویں جماعت

مضمون: اردو

درسی اسباق

حصہ نثر

۱۔ مرزا ظاہر دار بیگ	مولوی نذیر احمد
۲۔ گذرا ہوا زمانہ	سر سید احمد خان
۳۔ نمک کا داروغہ	منشی پریم چند
۴۔ مرحوم کی یاد میں	پطرس بخاری
۵۔ مینا کماری	خواجہ احمد عباس
۶۔ یونسکو کی چھتری	مجتبیٰ حسین
۷۔ مرزا غالبؔ	الطاف حسین حالیؔ

غزلیات

میر تقی میرؔ، حیدر علی آتشؔ، مرزا اسد اللہ خان غالبؔ، حکیم مومن خان مومنؔ، حسرت موہانی، حامدی کشمیریؔ اور پروین شاکرؔ کی دو دو غزلیں۔

دیگر اصنافِ شعر

۱۔ ایک آرزو	علامہ اقبالؔ
۲۔ حسن اور مزدوری	جوش ملیح آبادیؔ
۳۔ اے شریف انسانو!	ساحر لدھیانوی
۴۔ تضحیک روزگار	مرزا محمد رفیع سوداؔ
۵۔ حضرت عون و محمد کی جنگ کے لئے رخصت	میر انیسؔ

<div dir="rtl">

<div align="center">

داخلی تشخیص کا خاکہ

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<div align="center">

مضمون: اردو   جماعت: بارہویں   نمبرات = 20

</div>

ا۔   **وقتاً فوقتاً تشخیص (Periodical Assesment): نمبرات: 10**

اس قسم کی تشخیص کو مزید دو زمروں میں تقسیم کیا جاتا ہے اور ہر زمرے کے پانچ پانچ نمبرات ہیں۔

الف۔   **کاغذی و قلمی جانچ (Pen Paper Test): نمبرات: (5)**

اس قسم کی جانچ میں استاد طلاب کو قواعد، نثر اور شاعری کے متعلق مختلف النوع مختصر اور مختصر ترین سوالات پر مبنی آسان اور مختصر امتحانات منعقد کرے گا۔ ان امتحانات کے ذریعے طلاب کی تفہیمی اور تخلیقی صلاحیت کا تعین کیا جائے گا۔

ب۔   **کثیر پہلو جائزہ (Multiple Assesment): نمبرات: (5)**

اس قسم کے جائزے میں استاد کلاس میں کوئز، مذاکرے، مباحثے، بیت بازی، شعر سازی اور اسی نوعیت کی دیگر مشقیں کرائیں گے۔ اس کے ذریعے طلاب کے سننے اور بولنے کی صلاحیت اور مہارت کا تعین کیا جائے گا۔

۲۔   **پورٹ فولیو تشخیص (Portfolio Assesment): نمبرات: 5**

اس قسم کی تشخیص میں استاد طلاب کی اسکول اور جماعت کے اندر کارکردگی کو پرکھے گا۔ اسکول کی غیر نصابی سرگرمی میں اس کے رول کو جانچا جائے گا۔ اس دوران طلاب کی کارکردگی کو ریکارڈ کیا جائے گا۔ صباحی مجالس، ثقافتی پروگرام، سماجی اصلاح و خدمت اور کھیل کود میں طلاب کی کارکردگی کو جانچا جائے گا۔

۳۔   **مضمون کی افزودگی کی (Subject Enrichment Activity): نمبرات: 5**

اس نوعیت کی تشخیص میں استاد متعلقہ مضمون میں طلاب کی افزودگی کو یقینی بنانے کے لئے تقویضی مشق اور پڑھنے و لکھنے کی عملی سرگرمیوں طلاب کی شرکت کو یقینی بنائے گا۔ مختلف النوع موضوعات جیسے، لسانی، ادبی، تمدنی، سماجی، حب الوطنی اور ادبی تاریخ کے متعلق طلاب کو پڑھنے اور لکھنے کے لئے آمادہ کیا جائے گا۔ اس تشخیص میں طلاب کی لکھنے پڑھنے کی صلاحیت اور مہارت کو پرکھا جائے گا۔

(نوٹ: داخلی تشخیص کے تمام مراحل کا ریکارڈ استاد اپنے پاس موجود رکھے گا۔ اسکول سربراہ اس قسم کی تشخیص کا جائزہ ماہانہ بنیادوں پر یقینی بنائے گا۔)

</div>

مضمون ۔ اردو   جماعت ۔ بارہویں   وقت ۔ 3 گھنٹے   نمبرات ۔ 80

نمبرات	مہارت	سوالات کی تفصیل	سوال نمبر
8	پڑھنا	دئے گئے نصابی نثری اقتباس کو پڑھنے اور سمجھنے کے بعد اس کے آخر پر دئے گئے چار سوالات کے مختصر جواب لکھنا۔ یہ سوالات اقتباس کی تفہیم، جملے بنانے، اقتباس کا ماحصل لکھنے اور قواعد کے متعلق ہوں گے۔ (دو میں سے ایک)	۱
6	لکھنا	نصابی کتاب کے نثری اسباق سے لئے گئے چار سوالات میں سے دو کے چالیس الفاظ تک جواب لکھنا۔	۲
4	ادب	شامل نصاب نثری اصناف میں کسی ایک نثری صنف کی تکنیک، فن یا تاریخ پر پچاس الفاظ کا نوٹ لکھنا۔	۳
4	ادب	نصاب میں شامل نثر نگاروں میں سے کسی ایک کے حالات زندگی یا ادبی کارناموں پر پچاس الفاظ کا نوٹ لکھنا۔	۴
8	پڑھنا	نصاب میں شامل منظومات میں سے لئے گئے شعری جُز کو غور سے پڑھنے کے بعد، آخر پر دئے گئے چار سوالات کے مختصر جواب لکھنا۔ یہ سوالات اشعار کی تفہیم، وضاحت اور تشریح کے متعلق ہوں گے۔ (دو میں سے ایک)	۵
6	لکھنا	نصاب میں شامل غزلوں اور غزل گو شعراء کے متعلق پوچھے گئے چار سوالات میں سے دو کے چالیس الفاظ میں جواب لکھنا۔	۶
4	ادب	نظم، قصیدہ اور مرثیہ یا ان کے شعراء کے متعلق پوچھے گئے دو سوالات میں سے ایک کا پچاس الفاظ میں جواب لکھنا۔	۷
4	قواعد	دی گئی چار ادبی اصطلاحات میں سے دو کی مثالوں کے ساتھ مختصر وضاحت کرنا۔	۸
12	ادبی تاریخ	ادبی تحریکات اور تاریخ سے متعلق پوچھے گئے چار سوالات میں سے دو کے سو الفاظ میں جواب لکھنا۔	۹
4	لکھنا	دئے گئے دونجی، دفتری یا کاروباری خط تحریر کرنے کے سوال میں سے ایک کا جواب لکھنا۔	۱۰
8	لکھنا	دئے گئے چار عناوین میں سے کسی ایک عنوان پر ڈیڑھ سو الفاظ کا مضمون لکھنا۔ یہ عناوین ادب، سائنس، کھیل کود، ماحولیات، آزادیٔ نسواں اور انفارمیشن ٹیکنالوجی سے متعلق ہوں گے۔	۱۱
6	لکھنا	دئے گئے دو موضوعات میں سے کسی ایک پر اخباری رپورٹ یا اشتہار تیار کرنا۔	۱۲
6	قواعد	چھ معروضی سوالات۔ یہ سوالات کثیر جوابی، ہاں یا نہیں یا ایک لفظی و یک جملی جواب کی صورت میں ہوں گے۔ یہ سبھی سوالات قواعد سے متعلق ہوں گے۔	۱۳

HINDI

पूर्णांक – 80

आंतरिक मूल्यांकन – 20   समयाबधि : 3 घंटे

क्र. सं.	प्रश्नों के प्रारूप	दक्षता परीक्षण / अधिगम परिणाम	1 अंक	2 अंक	3 अंक	4 अंक	5 अंक	6 अंक	7 अंक	8 अंक	कुल
1	अपठित बोध गद्य(10)	ज्ञान विषयक, बोध, अर्थ ग्रहण, विश्लेषण, शब्द ज्ञान, मौलिकता, सृजनात्मकता आदि (बहुविकल्पीय प्रश्न 02, रिक्त स्थान-02, सही-गलत -02, अतिलघु उत्तरापेक्षी-02, वस्तुनिष्ठ-02)	10								10
2	व्याकरण एवं रचनात्मक लेखन	समृद्ध शब्दावली, वर्तनी, भाषा प्रवाह, शैली, अभिव्यक्ति की मौलिकता, सृजनात्मकता, संवाद, तार्किकता आदि।		6			1				17
3	हिंदी साहित्य का इतिहास	इतिहास बोध, साहित्य और समाज का सम्बन्ध, विश्लेषण, आलोचना, परम्परा, मूल्यांकन आदि।	3	1			1				10
4	पद्य भाग – अनुराग	भाव विचार, कल्पना-शैली, अर्थ ग्रहण, विश्लेषण, कार्य कारण सम्बन्ध, काव्य परम्पराओं का मूल्यांकन, संस्कृति, जीवन मूल्य, मौलिकता, सृजनात्मकता आदि।	3		3		2				22
	गद्य भाग आरोह भाग-२ (NCERT द्वारा प्रकाशित) के गद्य खंड से 4 निबन्ध	10. महादेवी वर्मा (भक्तिन्) 11. जैनेन्द्र कुमार (बाज़ार दर्शन) 12. धर्मवीर भारती (काले मेघा पानी दे) 14. हज़ारी प्रसाद द्विवेदी (शिरीष के फूल) कथानक, विषयवस्तु का बोध, अर्थ ग्रहण, विश्लेषण, व्याख्या, गद्य परम्पराओं का मूल्यांकन, जीवन मूल्य और हमारा समाज, साहित्य और समाज, मौलिकता, सृजनात्मकता, जीवन मूल्यों की पहचान आदि	**4**		**4**		**1**				**21**

आंतरिक मूल्यांकन (Internal Assessment)   20 अंक

विवरण :-

पाठ्यक्रम में आए रचनाकारों के कृतित्व के अन्य पहलुओं से संबंधित प्रायोजना कार्य दिया जा सकता है।

अथवा

पाठ्यक्रम की रचनाओं से संबंधित अन्य रचनाओं पर सामग्री एकत्रित करने सम्बन्धी कार्य दिया जा सकता है। उदाहरण के लिए 'रामधारी सिंह दिनकर' की किसी वीर रस की कविता पर कार्य दिया जा सकता है । यह प्रायोजना कार्य **10** अंक का होगा । यह कार्य हिन्दी साहित्येतिहास से संबंधित भी हो सकता है।

2. पूरे पाठ्यक्रम अथवा चुनिंदा पाठ्यक्रम के आधार पर छात्रों की मौखिक परीक्षा (VIVA) ली जा सकती है, जिसमें विषय ज्ञान के साथ-साथ वाचन क्षमताएँ (speaking skills) परखी जा सकती है । यह VIVA 5 अंक का होगा ।

3. शिक्षक अपनी इच्छानुसार पाठ्यक्रम के किन्हीं विषयों से संबंधित महत्वपूर्ण अपेक्षित प्रश्नों पर लिखित परीक्षा रख सकते हैं । इससे छात्रों की लेखन कुशलता की परख होगी और पाठ्यक्रम के महत्वपूर्ण बिंदुओं की तैयारी भी होगी । इसमें हिन्दी साहित्य के इतिहास पर बल दिया जा सकता है । यह कार्य **5** अंक का होगा ।

1. **आंतरिक मूल्यांकन की अंक योजना**

2. प्रायोजना कार्य - **10** अंक
3. मौखिक परीक्षा – **5** अंक
4. लिखित परीक्षा – **5** अंक

   कुल योग   - **20** अंक

BHOTI

བོད་ཡིག་འཛིན་གྲྭ་བཅུ་གཉིས་པའི་སློབ་ཚན།

སློབ་རིག་གཞོན་ནུའི་ལམ་གྱུར་ཆོན་ལག་གཉིས་པ།

སྐྱོན་ཐང་། ༡༠༠		དུས་ཡུན་ཆུ་ཚོད། ༣
ཀ༽	ཚིགས་སྒྱུག	༣༠
ཁ༽	ཚིགས་བཅད།	༣༠
ག༽	བརྡ་སྤྲོད་དང་སྦྱོར་རྩ།	༤༠

ཀ༽ ཚིགས་སྒྱུག

༡ མཆན་ཡོད་རྣམ་ཁྲིམས་བདག་ཛས་ཀྱིན་གྱི་བུ་མོ་ལ་ག་ཏ་བཟང་མོ་ཞེས་སོ་གགས།

༢ ཁྱུ་སྨན་ཆེན་པོ་ཞེས་སོ་གགས།

༣ རྒྱུན་པོ་མི་འུ་སྟུང་ཁ་བ་ར་ཞེས་སོ་གགས།

༤ སྤྱོན་སྨྱུ་ར་བའི་རྒྱུད་དུ་གྲགས་པའི་རྒྱལ་རིགས་ཞེས་སོ་གགས།

༥ སྤྱོད་སྦྱང་ཐ་མ་གཉིས་ཡོད་པ་ཞེས་སོ་གགས།

༦ སྤྱོན་སྦྱང་ཨུ་སྨྱེས་ཤིག་ཛས་ཀྱི་ཕྱིར་སྤྱོགས་ཀུན་ཏུ་གཅུལ་བ་ན་ཞེས་སོ་གགས།

ཁ༽ ཚིགས་བཅད།

༡ སྐྱེ་བོ་ཡོན་ཏན་ཡོད་མེད་པས། ཞེས་པ་ནས་ ཡོན་ཏན་ལྡན་ན་སྐྱེ་པོ་ཀུན། ཞེས་པའི་བར།

༢ ཡོན་ཏན་སྤྱོན་གཉིས་སྲས་རྒྱུང་གསལ། ཞེས་པ་ནས། ལེགས་བཤད་ཕྱིས་པ་དགའ་ལས་རྒྱུང་། ཞེས་པའི་བར།

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༣ ཏུག་ཏུ་དམ་པའི་ཡོན་ཏན་རྣམས། ཞེས་པ་ནས། དམ་པའི་ཡོན་ཏན་སྨྲས་གྱུར་ཀྱང་། ཞེས་པའི་བར།

༤ སྐྱེ་པོ་དན་པ་འཕྱིར་ཐོབ་ཀྱང་། ཞེས་པ་ནས། རྒྱུན་པོའི་དབུས་ན་དགའ་ཞིང་སྟེ། ཞེས་པའི་བར།

༥ སྐྱོན་རྣམས་འབད་པས་འཇིན་བྱེད་ཅིང་། ཞེས་པ་ནས། སྐྱེ་པོ་དན་པའི་ཚོགས་ནད། ཞེས་པའི་བར།

༧། བརྡ་སྤྲོད་དང་སྨྲན་ངག

༡ སྐྲ་རྒྱན་གྱི་རོ་བོ་དང་དབྱེ་བ། ༢ འགོག་རྒྱན་གྱི་དོན་དང་དབྱེ་བ། ༣ དོན་གཞན་བཀོད་པའི་རྒྱན་གྱི་རོ་བོ་དང་དབྱེ་བ། ༤ ལྷོག་པ་ཅན་རྒྱན་གྱི་མཚན་ཉིད་དང་དབྱེ་བ། ༥ ཚིག་དགང་བ་བཅུའི་དོན་ཕྱིས་ཏེ་བཏོད་པ་བཙོ་རྒྱུ།

༦ མངོན་བརྗོད་ལས། ས་གཞི། ལྷུང་སྐྱོང་། ཚངས་པ། འཇམ་པའི་དབྱངས། རྒྱ། ག མེ། སྒྱུ། བརྒྱ་བྱིན།

༧ འདད་པ་ཞིག་འཕྲི་རྒྱུ། ལ་དགས་ཀྱི་ལོ་གསར། ང་ཡི་སྐྱེ་ཡུལ། བོར་ཡུག་སྲུང་སྐྱོབ་སྐོར། ང་ཡི་དགེ་རྒན།

GEOLOGY

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^{14} 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, Trigonia, 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; Balloons 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, chemicals 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

Unit VI   STRUCTURAL GEOLOGY

A. FOLDS

      (i) Definition of Fold.

      (ii) Description of the following types of folds: Anti-Clinorium, Synclinorium, 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, Trigonia, Pecten, Calymene, Paradoxides and Agnostus.

2.   Megascopic, description and identification of the following minerals. Hornblende Orthoclase, Hematite, Chalcopyrite, Malachite, Bauxite, Quartz, Muscotive, Biotite, Meganetite, 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: 80   **Each unit carries 08 Marks**   **Time: 3 hours**

Project Work: 20 Marks

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 JKPSC

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

Scheme of Assessment for Public Administration

M. Marks: 80   **Time: 3:00 hrs**

This question paper contains five sections:

i. Section -A contains 10 Very Very Short Answer Type Questions of 1 mark each. 1 x 10= 10 marks

ii. Section- B contains 9 Very Short Answer Type Questions of 2 marks each to be answered in 20 to 30 words. 2 x 9 = 18 marks

iii. Section - C contains 7 Short Answer type questions of 4 marks each to be answered in 100 to 150 words. 4 x 7 = 28 marks

iv. Section - D contains 1 Passage having 3 questions of 2 marks each to be answered in 20 to 30 words. 2 x 3 = 6 marks

v. Section - E contains 3 Long Answer type questions of 6 marks each to be answered in 150 to 200 words. 6 x 3 = 18 marks

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 etal. (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.

ISLAMIC STUDIES

MAX. MARKS: (80+20=100)

Units:
1. *Worship in Islam (Ibadah and Arkan)*
2. *Ethical Values in Islam*
3. *Human Rights in Islam*
4. *Status of Women in Islam*
5. *Introduction to the Quran.*
6. *Knowledge and the Quranic Teachings.*
7. *Social teachings of the Quran.*
8. *Economic teachings of the Quran.*
9. *Introduction to Hadith.*
10. *Introduction to Fiqh (Law)*

SCHEME OF ASSESSMENT FOR ISLAMIC STUDIES CLASS 12TH

(80 marks)

Section A: Ten questions based on multiple choice, fill in the blanks, etc

(1x10=10marks)

Section B: Ten out of twelve very short answer type questions to be answered in 10-20 words each

(2x10-20 marks)

Section C: Eight out of ten short answer type questions to be answered in 80-100 words each

(8x4=32 marks)

Section D: Three out of five long answer type questions to be answered in 130-150 words each

(3x6=18 marks)

Internal Assessment (20 marks)

1. Project work/assignments on critical thinking/ problem solving/ understanding the text   05 marks
2. Field trip to important Islamic sites/places   05 marks
3. Periodic pen paper tests/quizzes   05 marks
4. Group discussion/ debate/ seminar/ other activities about emerging contemporary problems in Islamic world   05 marks

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