ENGLISH CORE (301)

TIME: 3 Hours   **F.M.: 80+20=100**

PRESCRIBED BOOKS:

- FLAMINGO BY NCERT
- VISTAS BY NCERT

QUESTION WISE BREAK- UP			
Section	**Areas of Learning**		**TOTAL**
A	Reading: Unseen Passage (Two)	12+10	22
B	Advanced Writing Skills	4+4+5+5	18
C	Literature	6+4+6+10+4+5+5	40
	Assessment of Listening Assessment of Speaking Project Work	5 5 10	20
		TOTAL:	**100**

DIFFICULTY LEVEL :

1. Difficult questions   -   15 %
2. Average questions   -   70%
3. Easy questions   -   15%

- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%

- Select response type questions (MCQ) = 20%

- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

Reading Skills	Conceptual understanding, decoding, Analyzing, inferring, interpreting, appreciating, literary, conventions and vocabulary, summarizing and using appropriate format/s.	22
Creative Writing Sills	Conceptual Understanding, application of rules, Analysis, Reasoning, appropriacy of style and tone, using appropriate format and fluency, inference, analysis, evaluation and creativity.	18
Literature Text Books & Supplementary Reading Texts	Recalling, reasoning, appreciating literary convention, inference, analysis, creativity with fluency, Critical Thinking.	40
	Total	80
	Internal Assessment - Listening - Speaking - Project Work	5 5 10
	Grand Total	100

SUMMARY - SECTION – A

Choice Questions / Objective Type Questions will be asked. Reading Comprehension through unseen passage.   22 Marks

Unseen Passage	No. of words	Testing Areas	Marks Allotted
1	700-750 words	One unseen passage to assess comprehension, interpretation and inference. Vocabulary and inference of meaning will also be assessed. The passage may be factual, descriptive or literary of meaning will also be tested.	12
2		One unseen **case-based** passage with verbal/visual inputs like statistical data, charts etc.	10

Note: The combined word limit for both the passages will be 700 – 750 words. Multiple Choice Questions / Objective Type Questions

will be asked.

SECTION – B (CREATIVE WRITING SKILLS – 18 MARKS)

Creative Writing Skills   **18 Marks**

The section has Short and Long writing tasks.

3. Notice up to 50 words. One out of the two given questions to be answered. **(4 Marks**: Format: 1 / Organisation of Ideas: 1 / Content : 2 / Accuracy of Spelling and Grammar : 1).

4. Formal / Informal Invitation and Reply up to 50 words. One out of the two given questions to be answered. **(4 Marks**: Format: 1 / Organisation of Ideas: 1 / Content: 2 / Accuracy of Spelling and Grammar : 1).

5. Letters based on verbal/visual input, to be answered in approximately 120-150 words. Letter types include application for a job with bio data or resume. Letters to the editor (giving suggestions or opinion on issues of public interest). One out of the two given questions to be answered. **(5 Marks**: Format: 1 / Organisation of Ideas: 1/Content: 2 / Accuracy of Spelling and Grammar: 1).

6. Article/ Report Writing, descriptive and analytical in nature, based on verbal inputs, to be answered in

   120-150 words. One out of the two given questions to be answered. **(5 Marks**: Format: 1 / Organisation of Ideas: 1 / Content: 2 / Accuracy of Spelling and Grammar : 1).

SECTION – C [LITERARY TEXT (FLAMINGO AND VISTAS) – 40 MARKS]

This section will have variety of assessment items including Multiple Choice Questions, Objective Type Questions, Short Answer Type Questions and Long Answer Type Questions to assess comprehension, analysis, interpretation and extrapolation beyond the text.

Reference to the Context   **40 Marks**

7. One Poetry extract out of two from the book **Flamingo** to assess comprehension, interpretation, analysis and appreciation.

   (6x1=6 Marks)

8. One Prose extract out of two from the book **Vistas** to assess comprehension, interpretation, analysis and appreciation.

   (4x1=4 Marks)

9. One prose extract out of two from the book **Flamingo** to assess comprehension, interpretation and analysis.   **(6x1=6Marks)**

10. Short answer type question **(from Prose and Poetry from the book Flamingo**), to be answered in 40-50 words. Questions should elicit inferential responses through critical thinking. Five questions out of the six given are to be answered.

    (5x2=10 Marks)

11. Short answer type question, from **Prose (Vistas)**, to be answered in 40- 50 words. Questions should elicit inferential responses through critical thinking. Any 2 out of 3 questions to be done.   **(2x2=4 Marks)**

12. One Long answer type question, from **Prose/Poetry (Flamingo)**, to be answered in 120-150 words. Questions can be based on incident / theme / passage / extract / event as reference points to assess extrapolation beyond and across the text. The question will elicit analytical and evaluative response from student. Any 1 out of 2 questions to be done.   **(1x5=5 Marks)**

13. One Long answer type question, based on the chapters from the book Vistas to be answered in 120-150 words to assess global comprehension and extrapolation beyond the text. Questions to provide evaluative and analytical responses using incidents, events, themes as reference points. Any 1 out of 2 questions to be done.   **(1x5=5 Marks)**

PRESCRIBED BOOKS :

   a.   **Flamingo:** English Reader published by National Council of Education Research and Training, New Delhi

   (Prose)

(i) The Last Lesson	(iv) The Rattrap	(vii) The Interview
(ii) Lost Spring	(v) Indigo	(viii) Going Places
(iii) Deep Water	(vi) Poets and Pancakes	

   (Poetry)

(i)   My Mother at Sixty-Six   (iv) A Thing of Beauty   (vi) Aunt Jennifer's Tigers
(ii) Keeping Quiet   (v) A Roadside Stand

b.   **Vistas:** Supplementary Reader published by National Council of Education Research and Training, New Delhi
   (i)   The Third Level   (iv) The Enemy
   (ii) The Tiger King   (v) On the Face of It
   (iii) Journey to the end of the Earth   (vi) Memories of Childhood : (1) The Cutting of My
                                                                        Long Hair (2) We Too are Human Beings

INTERNAL ASSESSMENT

Assessment of Listening Skills   -   05 marks.
Assessment of Speaking Skills   –   05 Marks
Project Work   -   10 Marks

- Half-yearly - Project topic assignment, planning and presentation on project layout **(September-October, 2023)**
- AISSCE- Project report submission and Viva-voce **(January- February 2024)**

Annexure I (Guidelines for Internal Assessment Class-XII)

ALS must be seen as an integrated component of all four language skills rather than a compartment of two. Suggested activities, therefore, take into consideration an integration of the four language skills but during assessment, emphasis will be given to speaking and listening, since reading and writing are already being assessed in the written exam.

Class- XII (Total Marks: 20)

Assessment of Listening and Speaking Skills: (5+5=10 Marks)

i.   **Activities:**
- Subject teachers must refer to books prescribed in the syllabus.
- In addition to the above, teachers may plan their own activities and create their own material for assessing the listening and speaking skills.

ii.   **Parameters for Assessment :** The listening and speaking skills are to be assessed on the following parameters:
   a.   Interactive competence (Initiation & turn taking, relevance to the topic)
   b.   Fluency (cohesion, coherence and speed of delivery)
   c.   Pronunciation
   d.   Language (grammar and vocabulary)

A suggestive rubric is given below:

Interaction	• Contributions are mainly unrelated to those of other speakers • Shows hardly any initiative in the development of conversation • Very limited interaction	• Contributions are often unrelated to those of the other speaker • Generally passive in the development of conversation	• Develops interaction adequately, makes however minimal effort initiate conversation • Needs constant prompting to take turns	• Interaction is adequately initiated and develop • Can take turn but needs little prompting	• Can initiate & logically develop simple conversation on familiar topics • Can take turns appropriately
Pronunciation	• Insufficient accuracy in pronunciation; many grammatical errors. • Communication is severely affected.	• Frequently unintelligible articulation. • Frequent phonological errors. • Major communication problems.	• Largely correct pronunciation & clear articulation except occasional errors. • Some expressions cause stress without compromising with understanding of spoken discourse.	• Mostly correct pronunciation & clear articulation • Can be clearly understood most of the time; very few phonological errors.	• Can pronounce correctly & articulate clearly. • Is always comprehensible; uses appropriate intonation.

Fluency	• Noticeably/ long pauses; rate of Speech is slow • Frequent repetition and/yourself-correction • Links only basic sentences; breakdown of coherence evident	• Usually fluent; produces simple speech fluently, but loses coherence in complex communication • Often hesitates and/or resorts to slow speech • Topics partly developed; not always concluded logically	• Is willing to speak at length, however repetition is noticeable • Hesitates and/or self corrects; occasionally loses coherence • Topics mainly developed, but usually not logically concluded	• Speaks without noticeable effort, with a little repetition • Demonstrates hesitation to find words or use correct grammatical structures and/or self- correction • Topics not fully developed to merit	• Speaks fluently almost with no repetition & minimal hesitation • Develops topic fully & coherently
Vocabulary & Grammar	• Demonstrates almost no flexibility, and mostly struggles for appropriate words • Uses very basic vocabulary to express view-points.	• Communicates with limited flexibility and appropriacy on some of the topics • Complex forms and sentence structures are rare; exhibits limited vocabulary to express new ideas	• Communicates with limited flexibility and appropriacy on most of the topics • Sometimes uses complex forms and sentence structures; has limited vocabulary to describe/ express new points	• Can express with some flexibility and appropriacy on most of the topics • Demonstrates ability to use complex forms and sentence structures most of the time; expresses with adequate vocabulary	• Can express with some flexibility and appropriacy on a variety of topics such as family, hobbies, work, travel and current events • Frequently uses complex forms and sentence structures; has enough vocabulary to express himself / herself

iii.   Schedule:

- The practice of listening and speaking skills should be done throughout the academic year.

- The final assessment of the skills is to be done as per the convenience and schedule of the school.

Project Work + Viva: 10 Marks

Out of ten marks, 5 marks will be allotted for the project report/script /essay etc. and 5 marks for the viva.

I.   Schedule:

- Schools may refer to the suggestive timeline given in these guidelines for the planning, preparation and viva-voce of ALS based projects.

The final assessment of the skills may be done on the basis of parameters suggested by the Board. Language teachers, however, have the option to adopt/ modify these parameters according to their school specific requirements.

COURSE STRUCTURE		
Section	**HALF-YEARLY**	**PRE BOARD / BOARD EXAM**
	17 September – 27 September 2024	**PRE BOARD: 3rd January – 15th January 2025** **BOARD EXAM: As per CBSE Guidelines**
A	**Reading Section** Comprehension & Vocabulary Case based Comprehension Passage	**Reading Section** Comprehension & Vocabulary Case based Comprehension Passage
B	**Writing Skills** • Notice • Invitation & Reply (Formal &Informal) • Job Application • Article Writing	**Writing Skills** • Notice • Invitation & Reply (Formal & Informal) • Job Application • Article Writing

Section	HALF-YEARLY	PRE BOARD / BOARD EXAM
	17 September – 27 September 2024	**PRE BOARD: 3rd January – 15th January 2025** **BOARD EXAM: As per CBSE Guidelines**
	• Letters to the Editor • Report Writing	• Letters to the Editor • Report Writing
C	**LITERATURE TEXT BOOKS FLAMINGO PROSE** 1. The Last Lesson 2. Lost Spring 3. Deep Water 4. The Rattrap 5. Indigo 6. Poets and Pancakes	**LITERATURE TEXT BOOKS FLAMINGO PROSE** 1. The Last Lesson 2. Lost Spring 3. Deep Water 4. The Rattrap 5. Indigo 6. Poets and Pancakes 7. The Interview Part-1 and Part 2 8. Going Places
	POETRY 1. My Mother at Sixty-six 2. Keeping Quiet 3. A Thing of Beauty 4. Aunt Jennifer's Tigers	**POETRY** 1. My Mother at Sixty-six 2. Keeping Quiet 3. A Thing of Beauty 4. Aunt Jennifer's Tigers 5. A Roadside Stand
	VISTAS 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	**VISTAS** 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)

NB:

1. **PRE-BOARD** also includes the syllabus of Half-Yearly

2. **The BOARD EXAMINATION** includes the whole syllabus.

MATHEMATICS (041)

Time: 3 hours **F.M.: 80**

PRESCRIBED BOOKS:

1. Mathematics Text book for Class XII (NCERT Publication, Part - I & II)
2. Mathematics Exemplar Problems for class XII(NCERT Publication)
3. Mathematics Lab Manual for Class XII, Published by NCERT

- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%

- Select response type questions (MCQ) = 20%

- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

QUESTION PAPER DESIGN

SL.	Typology of Questions	Total Marks	Approximate Percentage
1	Remembering Understanding	44	55 %
2	Applying	20	25 %
3	Analysing Evaluating Creating	16	20 %
	Total Marks	**80**	**100**
	Practical	**20**	
	Gross Total	**100**	

COURSE STRUCTURE

Sl. No.	UNITS	TYPE OF TEST / NAME OF THE TOPICS	HALF YEARLY	PRE BOARD / BOARD EXAM
			17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
1	I	Relations & Functions	09	08
2		Inverse Trigonometric functions	07	
3	II Algebra	Matrices & Determinants	14	10
4	III Calculus	Continuity & Differentiability	10	35
5		Application of Derivatives	12	
6		Indefinite Integrals	08	
7		Definite Integrals	08	
8		Application of Integrals	06	
9		Differential equation	06	
10	IV	Vectors		14
11		Three dimensional geometry		
12	V	Linear programming problem		05

Sl. No.	UNITS	TYPE OF TEST / NAME OF THE TOPICS	HALF YEARLY	PRE BOARD / BOARD EXAM
			17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
13	VI	Probability		08
		TOTAL	80	80

SYLLABUS DETAILS
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 & identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operations on matrices: Addition and multiplication and multiplication with a scalar, 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 uniqueness of inverse, if it exists; (Here all matrices will have real entries)

2. **Determinants**
   Determinant of a square matrix (up to 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, derivative of inverse trigonometric functions like $\sin^{-1}x$, $\cos^{-1}x$ and $\tan^{-1}x$, derivative 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 problems based on them.

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

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

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

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

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

UNIT - IV : VECTORS AND THREE-DIMENSIONAL GEOMETRY

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 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 equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines.

UNIT - V : LINEAR PROGRAMMING

1.   Linear Programming : Introduction, related terminology such as constraints, objective functions, 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).

UNIT - VI : PROBABILITY

1.   Probability : Conditional probability, multiplication theorem on probability, independent events, total probability, Baye's theorem, Random variable and its probability distribution, mean of random variable.

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

- 20 % weightage questions will be asked from the exemplar text book in all the examinations.
- No chapter wise weightage
- There will be no overall choice in the question paper, however, 33% internal choices will be given in each section.

NB: Question wise break up and typology of questions shall be done at par with the sample paper to be released by CBSE.

ACTIVITY (10 MARKS)		
Sl No	**LIST OF ACTIVITIES**	
1	ACTIVITY 1 (Parallel of lines is an equivalence relation)	Half yearly
2	ACTIVITY 2 (To demonstrate a function which is not one-one but onto)	Half yearly
3	ACTIVITY 3(To draw the graph of $sin^{-1}x$, using the graph of $\sin x$ and demonstrate the concept of mirror reflection about the line $y = x$.	Half yearly
4	ACTIVITY 4(Checking of Continuity of $f(x)$ at x=c)	Half yearly
5	ACTIVITY 5 (To understand the concept of decreasing and increasing functions)	Half yearly
6	ACTIVITY 6 (concept of absolute maximum and minimum)	Annual (Including Half yearly)
7	ACTIVITY 7 (construct of an open box of maximum volume from a given rectangular sheet)	Annual (Including Half yearly)
8	ACTIVITY 8 (Angle in a semi circle is right angle)	Annual (Including Half yearly)
9	ACTIVITY 9 (To find the distance between two skew lines)	Annual (Including Half yearly)
10	ACTIVITY 10(To explain the computation of conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice)	Annual (Including Half yearly)

NB: (i)(a) One activity (3 marks) out of first 5 will be asked in the half yearly exam and one activity (3 marks) will be asked out of 10 activities for annual activity test.

(b) Maintenance of record carries 5 marks and viva voce 2 marks which is in total 10 marks.

Assessment of Activities

Half Yearly	Annual
Record – 5 Marks	Record – 5 Marks
Viva voce - 2 Marks	Viva voce - 2 Marks
Activity – 3 Marks (Out of first 5 activities)	Activity – 3 Marks (Out of 10 activities)

ii) Periodic test (PT-1, HY, Pre Board / Pre Annual) out of these 3 two best marks to be taken for calculating for another 10 weightage.

iii) Total Internal Assessment will be done for 20 marks (10 from activity and 10 from periodic test)

PHYSICS (042)

PRESCRIBED BOOKS:

1. Physics Part-I, Published by NCERT
2. Physics Part-II, Published by NCERT
3. Exemplar Physics, Published by NCERT
4. Laboratory Manual of Physics, Class XII Published by NCERT
5. Any related books and manuals brought out by NCERT (Also consider multimedia)

QUESTION PAPER DESIGN

Maximum Marks: 70   **Duration: 3Hrs**

SL.	Typology of Questions	Total Marks	Approximate Percentage
1.	Remembering, Understanding	27	38 %
2.	Applying	22	32 %
3.	Analysing / Evaluating / Creating	21	30 %
	Total Marks	**70**	**100**
	Practical	**30**	
	Gross Total	**100**	

NOTE:

- **The above template is only a sample. Suitable internal variations may be made for generating similar templates keeping the overall weightage to different form of questions and typology of questions same.**
- **Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%**
- **Select response type questions (MCQ) = 20%**
- **Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%**

COURSE STRUCTURE (THEORY)

UNITS	TYPE OF TEST / NAME OF THE CHAPTER	Half Yearly	Pre Board / Board Exam
		17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
Unit I	**Electrostatics**		
	Chapter 1 : Electric Charges and Fields		
	Chapter 2: Electrostatic Potential and Capacitance	31	16
Unit II	**Current Electricity**		
	Chapter 3: Current Electricity		
Unit III	**Magnetic effect of Current and Magnetism**		
	Chapter 4: Moving charges and magnetism		
	Chapter 5: Magnetism and Matter		
Unit IV	**Electromagnetic Induction and Alternating Current**	34	17
	Chapter 6: Electromagnetic Induction		
	Chapter 7: Alternating Current		
Unit V	**Electromagnetic Waves**	05	
	Chapter 8: Electromagnetic Waves		
Unit VI	**Optics**		18
	Chapter 9: Ray Optics and Optical Instruments		
	Chapter 10 : Wave Optics		
Unit VII	**Dual Nature of Radiation and Matter**		
	Chapter 11:Dual Nature of Radiation and Matter		12
Unit VIII	**Atoms and Nuclei**		
	Chapter 12: Atoms		

UNITS	TYPE OF TEST / NAME OF THE CHAPTER	Half Yearly	Pre Board / Board Exam
		17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
	Chapter 13: Nuclei		
Unit–IX	**Electronics Devices**		
	Chapter14: Semiconductor Electronics: Materials, Devices & Simple Circuits.		07
	TOTAL	**70**	**70**

N.B. : 20% weightage questions may be asked from Exemplar Text book in all the examination.

SYLLABUS DETAILS

UNIT-I : ELECTROSTATICS

Chapter -1 : Electric Charges and Field

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).

Chapter - 2 : 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 parallelplate capacitor with and without dielectric medium between the plates, energy stored in a capacitor (no derivation, formulae only).

UNIT-II : CURRENT ELECTRICITY

Chapter - 3 : 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, combination of cells in series and in parallel, Kirchhoff's rules, Wheatstone bridge.

UNIT-III : MAGNETIC EFFECTS OF CURRENT AND MAGNETISM

Chapter -4: 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.

Chapter -5 : 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 it s 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

Chapter -6 : Electromagnetic Induction

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

Chapter -7 : 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, watt less current. AC generator, Transformer.

UNIT-V : ELECTROMAGNETIC WAVES

Chapter -8 : 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

Chapter -9 : 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.

Chapter -10 : 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 MATTER AND RADIATION

Chapter -11 : 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

Chapter -12: 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 n^{th} orbit, hydrogen line spectra (qualitative treatment only).

Chapter -13 : 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

Chapter -14 : 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.

PRACTICALS

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

❖ **HALF YEARLY:**
- ➢ Record of at least 04 Experiments [from sections A & B], to be performed by the students.
- ➢ Record of at least 03 activities [from sections A & B], to be performed by the students.

❖ **ANNUAL:**
- ➢ Record of at least 08 Experiments [with a minimum of 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 to be carried out by the students.

EVALUATION SCHEME

Time Allowed:3hrs   Max Marks:30

	Half- Yearly	Annual
Topic	**Marks**	**Marks**
Two experiments one from each section	7+7	7+7
Practical record (experiment and activities)	5	5
One activity from any section	3	3
Investigatory Project	3	3
Viva on experiments, activities and projects	5	5
Total	**30**	**30**

SECTION-A

Experiments

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 resistors 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 of 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 refractive index of a liquid by 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 of a p-n junction in forward bias 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, 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 combinations 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) in 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) use 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.

CHEMISTRY (043)

PRESCRIBED BOOKS:

1. Chemistry Part-I, Published by NCERT
2. Chemistry Part-II, Published by NCERT
3. Exemplar Chemistry, Published by NCERT
4. Laboratory Manual of Chemistry, Class XII Published by NCERT
5. Any related books and manuals brought out by NCERT (Also consider multimedia)

QUESTION PAPER DESIGN

SL.	Typology of Questions	Total Marks	Approximate Percentage
1.	Remembering Understanding	28	40 %
2.	Applying	21	30 %
3.	Analying Evaluating Creating	21	30 %
	Total Marks	**70**	**100**
	Practical	**30**	
	Gross Total	**100**	

N.B. : 20% weightage questions may be asked from Exemplar Text book in all the examination.

- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%
- Select response type questions (MCQ) = 20%
- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

COURSE STRUCTURE (THEORY)

Sl.		TYPE OF TEST / NAME OF THE CHAPTER	HALF YEARLY 17 September – 27 September 2024	PRE BOARD / BOARD EXAM PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
1	Unit – II	Solution	10	7
2	Unit –III	Electrochemistry	12	9
3	Unit –IV	Chemical Kinetics	10	7
4	Unit –VIII	d & f-Block Elements	9	7
5	Unit –IX	Coordination Compounds	9	7
6	Unit –X	Haloalkanes and Haloarenes	10	6
7	Unit –XI	Alcohols, Phenols and Ethers	10	6
8	Unit -XII	Aldehydes, Ketones and Carboxylic Acids		8
9	Unit -XIII	Organic Compounds Containing Nitrogen		6
10	Unit -XIV	Bio molecules		7
		Total	**70**	**70**

SYLLABUS DETAILS

UNIT II: SOLUTIONS

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor.

UNIT III: ELECTROCHEMISTRY

Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion

UNIT IV: CHEMICAL KINETICS

Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.

UNIT VIII: "d" AND "f" BLOCK ELEMENTS

General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals – metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$.

Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences.

Actinoids - Electronic configuration, oxidation states and comparison with lanthanoids.

UNIT IX: COORDINATION COMPOUNDS

Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).

UNIT X: HALOALKANES AND HALOARENES

Haloalkanes: Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation, mechanism of substitution reactions.

Haloarenes: Nature of C–X bond, substitution reactions (Directive influence of halogen in mono substituted compounds only).

Uses and environmental effects of - dichloromethane, tri chloromethane, tetra chloromethane, iodo form, freons, DDT.

UNIT XI: ALCOHOLS, PHENOLS AND ETHERS

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol.

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

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

UNIT XII: ALDEHYDES, KETONES AND CARBOXYLIC ACIDS

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

UNIT XIII: ORGANIC COMPOUNDS CONTAINING NITROGEN

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

Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

UNIT XIV: BIOMOLECULES

Carbohydrates - Classification (aldoses and ketoses), mono saccahrides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates.

Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure.

Vitamins - Classification and functions

Nucleic Acids: DNA and RNA.

PRACTICALS

EVALUATION SCHEME FOR EXAMINATION	Half Yearly	ANNUAL
VOLUMETRIC ANALYSIS	10	8
SALT ANALYSIS	-	8
CONTENT BASED EXPERIMENT	6	6
PROJECT WORK	4	4
CLASS RECORD AND VIVA	10	4
Total	**30**	**30**

PRACTICAL SYLLABUS

Micro-chemical methods are available for several of the practical experiments. Wherever possible, such techniques should be used.

A. Surface Chemistry

(a) Preparation of one lyophilic and one lyophobic sol Lyophilic sol - starch, egg albumin and gum Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide.

(b) Dialysis of sol-prepared in (a) above.

(c) Study of the role of emulsifying agents in stabilizing the emulsion of different oils.

B. Chemical Kinetics

(a) Effect of concentration and temperature on the rate of reaction between Sodium Thiosulphate and Hydrochloric acid.

(b) Study of reaction rates of any one of the following:

(i) Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentration of Iodide ions.

(ii) Reaction between Potassium Iodate, (KIO_3) and Sodium Sulphite: (Na_2SO_3) using starch solution as indicator (clock reaction).

C. Thermo chemistry

Any one of the following experiments

a) Enthalpy of dissolution of Copper Sulphate or Potassium Nitrate.

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

c) Determination of enthaply change during interaction (Hydrogen bond formation) between Acetone and Chloroform.

D. Electrochemistry

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.

E. Chromatography

a) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rf values.

b) Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in Rf values to be provided).

F. Preparation of Inorganic Compounds

a) Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum.

b) Preparation of Potassium Ferric Oxalate.

G. Preparation of Organic Compounds

Preparation of any one of the following compounds

a) Acetanilide

b) Di -benzal Acetone

c) p-Nitroacetanilide

d) Aniline yellow or 2 - Naphthol Aniline dye.

H.   Tests for the functional groups present in organic compounds:

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

I.   Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given food stuffs.

J.   Determination of concentration/ molarity of $KMnO_4$ solution by titrating it against a standard solution of:

a)   Oxalic acid

b)   Ferrous Ammonium Sulphate

(Students will be required to prepare standard solutions by weighing themselves).

K. Qualitative analysis

Determination of one cation and one anion in a given salt.

Cation - Pb^{2+}, Cu^{2+}, As^{3+}, Al^{3+}, Fe^{3+}, Mn^{2+}, Zn^{2+}, Ni^{2+} , Ca^{2+}, Sr^{2+}, Ba^{2+}, Mg^{2+}, $(NH_4)^+$

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

PROJECT

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested Projects.

- Study of the presence of oxalate ions in guava fruit at different stages of ripening.

- Study of quantity of casein present in different samples of milk.

- Preparation of soybean milk and its comparison with the natural milk with respect to curd formation, effect of temperature, etc.

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

- Study of digestion of starch by salivary amylase and effect of pH and temperature on it.

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

- Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom).

- Study of common food adulterants in fat, oil, butter, sugar, turmeric power, chilli powder and pepper.

Note: Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.

BIOLOGY (044)

TIME: 3 Hours   **F.M.: 70+30=100**

PRESCRIBED BOOKS:

1. Text book of Biology for class- XII (NCERT).
2. Exemplar Biology-class-XII (NCERT).
3. Biology supplementary materials (revised), available on CBSE website.
4. Other related books and manuals brought out by NCERT (including multimedia).
5. Comprehensive laboratory manual in biology - XII (Laxmi Publication).

QUESTION PAPER DESIGN

TYPOLOGY	% NO OF QUESTIONS (MARKS)
Demonstrate Knowledge and Understanding	35 (50%)
Application of Knowledge / Concepts	21 (30 %)
Formulate, Analyse, Evaluate and Create	14 (20 %)
Total Marks	70 (100%)

NOTE:

- The above template is only a sample. Suitable internal variations may be made for generating similar templates keeping the overall weightage to different form of questions and typology of questions same.
- Question wise break up shall be followed as per the sample paper to be released by DAV CAE.
- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%
- Select response type questions (MCQ) = 20%
- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

COURSE STRUCTURE (THEORY)

UNIT	Name of the Exam / Name of the Unit	Half Yearly 17 September – 27 September 2024	Pre Board / Board Exam PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
VI	Reproduction	18	16
VII	Genetics and Evolution	24	20
VIII	Biology and Human Welfare	14	12
IX	Biotechnology and its Applications	14	12
X	Ecology and Environment	-	10
	Total	70	70

SYLLABUS DETAILS
Unit – VI REPRODUCTION

Chapter-2: Sexual Reproduction in Flowering Plants
Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; out-breeding devices; Pollen- Pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation.

Chapter-3: Human Reproduction
Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis-spermatogenesis and oogenesis; menstrual cycle; fertilization, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).

Chapter-4: 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 – VII GENETICS AND EVOLUTION

Chapter-5: Principles of Inheritance and Variation 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; chromosome theory of inheritance; chromosomes and genes; Sex determination - in humans, birds and honey bee; linkage and crossing over; sex linked inheritance-haemophilia, colour blindness; Mendelian disorders in humans-thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.

Chapter-6: Molecular Basis of Inheritance

Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central Dogma; transcription, genetic code, translation; gene expression and regulation-lac operon; Genome, Human and rice genome projects; DNA fingerprinting.

Chapter-7: Evolution

Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); 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-VIII BIOLOGY AND HUMAN WELFARE

Chapter-8: Human Health and Diseases

Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ringworm) and their control; Basic concepts of immunology-vaccines; cancer, HIV and AIDS; Adolescence-drug and alcohol abuse.

Chapter-10: Microbes in Human Welfare

Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use.

Unit-IX BIOTECHNOLOGY AND ITS APPLICATIONS

Chapter-11: Biotechnology-Principles and Processes

Genetic Engineering (Recombinant DNA Technology).

Chapter-12: Biotechnology and its Applications

Application of biotechnology in health and agriculture: Human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organisms-Bt-crops; transgenic animals; bio-safety issues, bio-piracy and patents.

Unit-X ECOLOGY AND ENVIRONMENT

Chapter-13: Organisms and Populations
Population interactions - mutualism, competition, predation, parasitism; population attributes growth, birth rate and death rate, age distribution. (Topics excluded: Organism and its Environment, Major Aboitic Factors, Responses to Abioitic Factors, Adaptations)

Chapter-14: Ecosystem

Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy (Topics excluded: Ecological Succession and Nutrient Cycles)

Chapter-15: Biodiversity and its Conservation

Biodiversity Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.

HALF YEARLY PRACTICAL SYLLABUS

A.   List of Experiments

1.   Prepare a temporary mount to observe pollen germination.

2.   Prepare a temporary mount of onion root tip to study mitosis.

3.   Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

B.   Study and observe the following (Spotting):

1.   Flowers adapted to pollination by different agencies (wind, insects, birds).

2.   Pollen germination on stigma through a permanent slide or scanning electron micrograph.

3.   Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from

grasshopper/mice).

4. Meiosis in onion bud cell or grasshopper testis through permanent slides.

5. T.S. of blastula through permanent slides (Mammalian).

6. Mendelian inheritance using seeds of different colour/sizes of any plant.

7. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour-blindness.

8. Controlled pollination-emasculation, tagging and bagging.

9. Common disease causing organisms like *Ascaris, Entamoeba, Plasmodium*, any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of diseases that they cause.

10. Flash cards models showing examples of homologous and analogous organs.

<div align="center">

ANNUAL PRACTICAL SYLLABUS (HALF YEARLY SYLLABUS INCLUDED)

</div>

Evaluation Scheme		Marks
One Major Experiment　　　　5		5
One Minor Experiment 2 &3		4
Slide Preparation　　　　　1&4		5
Spotting		7
Practical Record+ Viva Voce	(Credit to the students' work over the academic session maybe given)	4
Investigatory Project and its Project Record+ Viva Voce		5
Total		30

A. List of Experiments

1. Prepare a temporary mount to observe pollen germination.

2. Study the plant population density by quadrat method.

3. Study the plant population frequency by quadrat method.

4. Prepare a temporary mount of onion root tip to study mitosis.

5. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

B. Study and observe the following (Spotting):

1. Flowers adapted to pollination by different agencies (wind, insects, birds).

2. Pollen germination on stigma through a permanent slide or scanning gel ectron micrograph.

3. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).

4. Meiosis in onion bud cell or grasshopper testis through permanent slides.

5. T.S. of blastula through permanent slides (Mammalian).

6. Mendelian inheritance using seeds of different colour/sizes of any plant.

7. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour-blindness.

8. Controlled pollination-emasculation, tagging and bagging.

9. Common disease causing organisms like *Ascaris, Entamoeba, Plasmodium*, any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of diseases that they cause.

10. Models specimen showing symbolic association in root modules of leguminous plants, *Cuscuta* on host, lichens.

11. Flash cards models showing examples of homologous and analogous organs.

COMPUTER SCIENCE (083)

Time : 3 hours   **F.M. : 70(T)+30(P)**

PRESCRIBED BOOKS :

> Computer Science with Python (Dhanpat Rai Publication by Sumita Arora)

QUESTION PAPER DESIGN

SL.	Typology of Questions	Total Marks	Approximate Percentage
1.	Remembering Understanding	17	25 %
2.	Applying	23	33 %
3.	Analying Evaluating Creating	30	42 %
	Total Marks	**70**	**100**
	Practical	**30**	
	Gross Total	**100**	

NOTE:

- The above template is only a sample. Suitable internal variations may be made for generating similar templates keeping the overall weightage to different form of questions and typology of questions same.
- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%
- Select response type questions (MCQ) = 20%
- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

QUESTION WISE BREAK-UP

Periodic Test-1						
Forms of Questions	VSA	SA – I	SA-II	LA-I	LA-II	TOTAL
No. of Questions	11	03	03	01	01	**19**
Marks	01	02	03	04	05	
Total	11	06	09	04	05	**35**
Half Yearly / Pre Board						
Forms of Questions	VSA	SA – I	SA-II	LA-I	LA-II	TOTAL
No. of Questions	18	07	05	02	03	**35**
Marks	01	02	03	04	05	
Total	18	14	15	08	15	**70**

DIFFICULTY LEVEL:

	1. Difficult questions	-	15 %
	2. Average questions	-	70%
	3. Easy questions	-	15%

COURSE STRUCTURE (THEORY)

Unit	NAME OF THE TEST / NAME OF UNIT	Half Yearly	Pre-Board / Board Exam
		17 September – 27 September 2024	**PRE BOARD: 3rd January – 15th January 2025** **BOARD EXAM: As per CBSE Guidelines**
1	**Computational Thinking and Programming – 2**		
	Revision of Python topics covered in class-XI	20	40
	Functions	15	

	File handling	25	
	Data-structures	10	
2	**Computer Networks**	--	10
	Evolution of Networking & Data Communication terminologies		
	Transmission media & Network devices		
	Network Topologies and types		
	Network Protocol		
	Mobile Telecommunication Technologies		
	Network Security Concepts		
	Introduction To Web services		
	E-commerce payment		
3	**Database Management**	--	20
	Database Concepts & Relational data model		
	Structured Query Language, General Concepts		
	Data Types and SQL commands:		
	SQL functions and Join		
	Interface of Python with an SQL database		
	TOTAL	**70**	**70**

SYLLABUS DETAILS

UNIT 1 :Computational Thinking and Programming - 2   (70 Theory + 50 Practical)

Prerequisites Computer Science- Class XI

- Revision of Python topics covered in Class XI.
- Functions: types of function (built-in functions, functions defined in module, user defined functions), creating user defined function, arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope).
- Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths.
- Exception Handling: Introduction, handling exceptions using try-except-finally blocks
- Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause, writing/appending data to a text file using write() and writelines (), reading from a text file using read(), readline() and readlines(), seek and tell methods, manipulation of data in a text file.
- Binary file: basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method, read, write/create, search, append and update operations in a binary file.
- CSV file: import csv module, open / close csv file, write into a csv file using csv.writer() and read from a csv file using csv.reader( ).
- Data Structure: Stack, operations on stack (push & pop), implementation of stack using list.

UNIT 2 :Computer Networks

- Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET).
- Data communication terminologies: concept of communication, components of data communication (sender, receiver, message, communication media, protocols), measuring capacity of communication media (bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching).
- Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves).
- Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card).
- Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree).
- Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP .
- Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting.

UNIT 3 :Database Management

- Database concepts: introduction to database concepts and its need ·
- Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key) ·

- Structured Query Language: introduction, Data Definition Language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints (not null, unique, primary key), create database, use database, show databases, drop database, show tables, create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table, insert, delete, select, operators (mathematical, relational and logical), aliasing, distinct clause, where clause, in, between, order by, meaning of null, is null, is not null, like, update command, delete command, aggregate functions (max, min, avg, sum, count), group by, having clause, joins: cartesian product on two tables, equi-join and natural join ·
- Interface of python with an SQL database: connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using fetchone(), fetchall(), rowcount, creating database connectivity applications

PRACTICAL (HALF YEARLY)

Duration : 3 hours   **Total Marks : 30**

1. Programming in Python   **12 marks**

Two programming problems in python to be developed and tested in Computer during the examination. Marks are allotted on the basis of following:

Logic	: 8 Marks
Documentation / Indentation	: 2 Marks
Output presentation	: 2 Marks

2. Project Work   **08 marks**
   (that uses the concepts that have been learnt in Class 11 and 12)

3. Practical Record (Minimum 15 Python programs)   **07 marks**

Suggested Practical List

Python Programming
- One programs from conditional statement
- One program each from string, list, tuple and dictionary.
- Read a text file line by line and display each word separated by a #.
- Read a text file and display the number of vowels/ consonants/ uppercase/ lowercase characters in the file.
- Remove all the lines that contain the character `a' in a file and write it to another file.
- Create a binary file with name and roll number. Search for a given roll number and display the name, if not found display appropriate message.
- Create a binary file with roll number, name and marks. Input a roll number and update the marks.
- Write a random number generator that generates random numbers between 1 and 6 (simulates a dice).
- Write a Python program to implement a stack using a list data-structure.
- Create a CSV file by entering user-id and password, read and search the password for given user-id.

4. Viva Voce   **03 Marks**

PRACTICAL (ANNUAL)

Duration : 3 hours   **Total Marks : 30**

Practical

- **Programming in PYTHON**   **(8+4)**

1. Python program (60% logic + 20% documentation + 20% code quality)
2. A stub program with Python SQL connectivity must be provided with blanks (4 blanks) to be filled by the student with the desired SQL query.

- **Report file**
    1. Minimum 15 Python programs.
    2. SQL Queries – Minimum 5 sets using one table / two tables.
    3. **Minimum 4 programs based on Python - SQL connectivity**   **(7)**

- **Project**
   That uses the concepts that have been learnt in Class 11 and 12.   **(8)**

- **Viva voce**   **(3)**

Suggested Practical List: Python Programming

   Database Management

- Create a student table and insert data. Implement the following SQL commands on the student table:
    - ALTER table to add new attributes / modify data type / drop attribute
    - UPDATE table to modify data
    - ORDER By to display data in ascending / descending order
    - DELETE to remove tuple(s)
    - GROUP BY and find the min, max, sum, count and average

● Similar exercise may be framed for other cases.

● Integrate SQL with Python by importing suitable module.

PROJECT GUIDELINES :

The aim of the class project is to create something that is tangible and useful using Python file handling/ Python-SQL connectivity. This should be done in groups of two to three students and should be started by students at least 6 months before the submission deadline. The aim here is to find a real world problem that is worthwhile to solve. Students are encouraged to visit local businesses and ask them about the problems that they are facing. For example, if a business is finding it hard to create invoices for filing GST claims, then students can do a project that takes the raw data (list of transactions), groups the transactions by category, accounts for the GST tax rates, and creates invoices in the appropriate format. Students can be extremely creative here. They can use a wide variety of Python libraries to create user friendly applications such as games, software for their school, software for their disabled fellow students, and mobile applications, of course to do some of these projects, some additional learning is required; this should be encouraged. Students should know how to teach themselves. The students should be sensitized to avoid plagiarism and violations of copyright issues while working on projects. Teachers should take necessary measures for this.

PHYSICAL EDUCATION (048)

PRESCRIBED BOOK :

> GET ACTIVE – A Book of Health & Physical Education (Rohan Publication)
> Physical Education Practical Manual (Ever Green Publication)

REFERENCE BOOK :

> Health & Physical Education by Dr.V.K.Sharma by Saraswati Publication

COURSE STRUCTURE (THEORY)

Unit	TYPE OF TEST / NAME OF UNIT	HALF-YEARLY (70 marks)	PRE BOARD / BOARD EXAM
		17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
1	Management of Sporting Events	10	05 + 04**b***
2	Children and Women In Sports	10	07
3	Yoga as preventive measures for life style disease.	10	06 + 01**b***
4	Physical Education & Sports for CWSN (Children with Special Needs-Divyang)	10	04 + 04**b***
5	Sports and Nutrition	10	07
6	Test and Measurement in Sports	10	08
7	Physiology and Injuries in Sports	10	04 + 04**b***
8	Biomechanics & Sports	-	10
9	Psychology and Sports	-	07
10	Training in Sports	-	09
	Total	**70**	**70**

Note: b*are the Concept based questions like Tactile diagram/data interpretation/case base study for visually Impaired Child

➢ **The question paper consists of 5 sections and 34 Questions.**
➢ Scheme of Sections – A, B, C, D & E
  Section-A – MCQ (1Mark)   Section-B (2 Marks),   Section-C (3Marks)
  Section-D-CBQ (4 Marks)   Section-E (5 Marks)
• Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%
• Select response type questions (MCQ) = 20%
• Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

SYLLABUS DETAILS

Unit-I : Management of Sporting Events

• Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling)
• Various Committees & its Responsibilities (pre, during & post)
• Fixtures and their Procedures – Knock-Out (Bye & Seeding) & League (Staircase, Cyclic, Tabular method) and Combination tournaments
• Intramural & Extramural tournaments – Meaning, Objectives & Its Significance
• Community sports program (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity)

Unit-II : Children & Women in Sports

• Exercise guidelines of WHO for different age groups.
• Common Postural Deformities - Knock Knees, Flat Foot; Round Shoulders; Lordosis, Kyphosis and Scoliosis and Bow Legs and their respective Corrective Measures.
• Women's participation in Sports – Physical, Psychological, and social benefits.
• Special consideration (Menarch & Menstural Dysfunction)

- Female Athletes Triad (Osteoporosis, Amenorrhea, Eating Disorders)

Unit-III : Yoga as Preventive measures for Lifestyle Disease

- Obesity: Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama.
- Diabetes: Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana,Bhujangasana, Shalabhasana, Dhanurasana, Suptavajarasana, Paschimottanasana, Ardha -Mastendrasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalabhati.
- Asthma: Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, UttanMandukasana, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalbhati, GomukhasanaMatsyaasana, Anuloma - Viloma.
- Hypertension: Procedure, Benefits & Contraindications for Tadasana, Katichakransan, Uttanpadasana, ArdhaHalasana, Sarala Matyasana, Gomukhasana, UttanMandukasana, Vakrasana, Bhujangasana, Makarasana, Shavasana, Nadishodhanapranayam, Sitlipranayam.
- Back Pain and Arthritis: Procedure, Benefits & Contraindications of Tadasan, Urdhawahastootansana, Ardh-Chakrasana, Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujandgasana, Gomukhasana, Bhadrasana, Makarasana, NadiShodhana pranayama.

Unit-IV : PHYSICAL EDUCATION & SPORTS FOR CWSN (Children with Special Needs – Divyang)

- Organizations promoting Disability Sports (Special Olympics; Paralympics; Deaflympics)
- Concept of Classification and Divisioning in Sports.
- Concept of Inclusion in sports, its need, and Implementation;
- Advantages of Physical Activities for children with special needs.
- Strategies to make Physical Activities assessable for children with special needs.

Unit-V : Sports & Nutrition

- Concept of balanced diet and nutrition
- Macro and Micro Nutrients: Food sources & functions
- Nutritive & Non-Nutritive Components of Diet
- Eating for Weight control– A Healthy Weight, The Pitfalls of Dieting, Food Intolerance, and Food Myths
- Importance of Diet in Sports-Pre, During and Post competition Requirements

Unit-VI : Test & Measurement in Sports

- Fitness Test – SAI Khelo India Fitness Test in school:
  Age group 5-8 years/ class 1-3: BMI, Flamingo Balance Test, Plate Tapping Test
  Age group 9-18yrs/ class 4-12: BMI, 50mt Speed test, 600mt Run/Walk, Sit & Reach flexibility test, Strength Test (Partial Abdominal Curl Up, PushUps for boys, Modified Push-Ups for girls).
- Measurement of CardioVascular Fitness – Harvard Step Test – Duration of the Exercise in Seconds x100/5.5 X Pulse count of 1-1.5 Min after Exercise.
- Computing Basal Metabolic Rate (BMR)
- Rikli & Jones - Senior Citizen Fitness Test
  - ✓ Chair Stand Test for lower body strength
  - ✓ Arm Curl Test for upper body strength
  - ✓ Chair Sit & Reach Test for lower body flexibility
  - ✓ Back Scratch Test for upper body flexibility
  - ✓ Eight Foot Up & Go Test for agility
  - ✓ Six-Minute Walk Test for Aerobic Endurance
  5. Johnsen – Methney Test of Motor Educability (Front Roll, Roll, Jumping. Half-Turn, Jumping full turn

Unit-VII : Physiology & Injuries in sports

- Physiological factors determining components of physical fitness
- Effect of exercise on the Muscular System
- Effect of exercise on the Cardio-Respiratory System
- Physiological changes due to ageing

- Sports injuries: Classification (Soft Tissue Injuries -Abrasion, Contusion, Laceration, Incision, Sprain & Strain; Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted)

Unit-VIII : Biomechanics & Sports

- Newton's Law of Motion & its application in sports
- Types of Levers and their application in Sports.
- Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports
- Friction & Sports
- Projectile in Sports

Unit-IX : Psychology & Sports

- Personality; its definition & types (Jung Classification & Big Five Theory)
- Motivation, its type & techniques.
- Exercise Adherence: Reasons, Benefits & Strategies for Enhancing it
- Meaning, Concept & Types of Aggressions in Sports
- Psychological Attributes in Sports – Self-Esteem, Mental Imagery, SelfTalk, Goal Setting.

Unit-X: Training in Sports

- Concept of Talent Identification and Talent Development in Sports
- Introduction to Sports Training Cylce – Micro, Meso, Macro Cycle.
- Types & Method to Develop – Strength, Endurance and Speed
- Types & Method to Develop – Flexibility and Coordinative Ability
- Circuit Training - Introduction & its importance

PRACTICAL

01.	Physical Fitness Test : SAI Khelo India test/Brockport Physical Fitness Test (BPFT)*	06 Marks
02.	Proficiency in Games and Sports (Skill of any one IOA recognized sport/ games of choice)**	07 Marks
03.	Yogic Practices	07 Marks
04.	Record File***	05 Marks
05.	Viva Voice (Health / Games & sports / Yoga)	05 Marks
		--------------
		30 Marks

* Test for CWSN (any 4 items out of 27 items. One item from each component: Aerobic Function, Body Composition, Muscular strength & Endurance, Range of Motion or Flexibility)

**CWSN (Children With Special Needs – Divyang): Bocce/Boccia , Sitting Volleyball, Wheel Chair Basketball, Unified Badminton, Unified Basketball, Unified Football, Blind Cricket, Goalball, Floorball, Wheel Chair Races and Throws, or any other Sport/Game of choice.

**Children With Special Needs can also opt any one Sport/Game from the list as alternative to Yogic Practices. However, the Sport/Game must be different from Test - 'Proficiency in Games and Sports'

***Record File shall include:

❖ Practical-1: Fitness tests administration.

❖ Practical-2: Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.

❖ Practical-3: Anyone one IOA recognized Sport/Game of choice. Labeled diagram of Field & Equipment. Also mention its Rules, Terminologies & Skills.

(Practical-1 & Practical-2 has to be completed for Half Yearly/PA-II. However all three practical activities have to be completed for AISSC Practical Examination)

PAINTING (049)

Time : Theory – 2 hrs   **F.M.-100**
Theory – 30 mark, Practical – 3+3=6hrs, Practical – 70mark

PRESCRIBED BOOK :

An introduction to Indian Art Part – II (NCERT)

REFERENCE BOOK :

Panoramic Indian Painting (Class XII) (Vishal Publishing Co.) OR History of Indian Art (Class XII) (Full circle)

QUESTIONWISE BREAKS –UP

Half Yearly / Sahodaya Pre-Board and Annual/Board Exam.

Forms of questions – MCQ, SA, LA

No of questions – 15

Marks – MCQ (8 x 1) =8, SA (5 x 2) =10, LA (2 x 6) = 12
Total - 30

TYPOLOGY OF QEUSTINS

1. Remembering   20%
2. Understanding   20%
3. Application   20%
4. Evaluation based   20%
5. High Order Thinking based   20%

- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%
- Select response type questions (MCQ) = 20%
- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

UNIT	TYPE OF TEST / CHAPTERS	HALF YEARLY (30 MARKS)	PRE-BOARD / BOARD EXAM (30 MARKS)
COURSE STRUCTURE (THEORY) MARKS -30			
		17 September – 27 September 2024	**PRE BOARD: 3rd January – 15th January 2025** **BOARD EXAM: As per CBSE Guidelines**
Unit - 1	The Rajasthani and Pahari Schools of Miniature Painting, Pala, Jain, Central Indian School	15	10
Unit - 2	The Mughal and Deccan School of Miniature painting	15	10
Unit -3	The Bengal School of Painting and The Modern Trends in Indian Art	-	10

SYLLABUS DETAILS

Unit – 1.
(A) The Rajasthani and Pahari Schools of Miniature Painting (16th Century A.D. TO 19th Century A.D.)
 'A brief introduction to Indian miniature schools: Western- Indian, Pala, Rajasthani, Mughal, Central India, Deccan and Pahari'

A. The Rajasthani School

1. Origin and Development
2. Sub-schools – Mewar, Bundi, Jodhpur, Bikaner, Kishangarh and Jaipur
3. Main features of the Rajasthani schools
4. Appreciation of the following Rajasthani paintings.

Sl No.	Title	Painter	Sub- School
i.	Maru-Ragini	Sahibdin	Mewar

ii.	Chaugan players	Dana	Jodhpur
iii.	Krishna on Swing	Nuruddin	Bikaner
iv.	Radha(Bani- Thani)	Nihal Chand	Kishangarh
v.	Bharat meets Rama at Chitrakuta	Guman	Jaipur

B. The Pahari School

    1. Origin and development
    2. Sub-Schools – Basohli, Guler, Kangra, Chamba and Garhwal
    3. Main features of the Pahari School
    4. Appreciation of the following pahari paintings :

Sl. No.	Title	Painter	Sub- School
i.	Krishna with Gopis	Manaku	Basohli
ii.	Nand, Yashoda and Krishna with Kinsmen going to Vrindavana	Nainsukh	Kangra

UNIT – 2: The Mughal and Deccan School of Miniature Painting
(16th Century A.D. to 19th Century A.D.)

  (A) The Mughal School
    1) Origin and development
    2) Main features of the Mughal School.
    3) Appreciation of the following Mughal paintings :

Sl No.	Title	Painter	School
i.	Krishna lifting Mount Govardhana	Miskin	Akbar
ii.	Falcon on a Bird rest	Ustad Mansoor	Jahangir
iii.	Kabir and Raidas	UstadFaquirullah Khan	Shahjahan
iv.	Marriage procession of Dara Shikoh	Haji Madni	Provincial Mughal, Avadh

(B) The Deccan School

    1. Origin and development
    2. Main features of the Deccan School
    3. Study of method and materials and appreciation of the following Deccan Paintings

Sl No.	Title	Painter	School
i.	Hazrat Nizamuddin Auliya and Amir Khusro	Unknown	Hyderabad
ii.	Chand Bibi playing polo (Chaugan)	Unknown	Golkonda

UNIT -3 :

(A)   **The Bengal School of Painting and Modern Trends in Indian Art**
    (About the beginning to mid of the 20th Century)
    (1) National Flag of India and the symbolic significance of its forms and the colours.
    (2) Introduction to the Bengal School of Painting
       (i)Origin and development of the Bengal School of Painting
       (ii) Main features of the Bengal School of Painting
    (3) Appreciation of the following paintings of the Bengal School.

Sl No.	Title	Painter	School
i.	Journey's End	Abanindranath Tagore	Bengal

ii.	Shiv and Sati	Nandalal Bose	Do
iii.	Radhika	M.A.R.Chughtai	Do
iv.	Meghdoot	Ram Gopal Vijaivargia	Do

(Contribution of Indian Artists in the struggle for National Freedom Movement.)

(C) The modern Trends in Indian Art

> **1. Introduction**
>
> **2. Appreciation of the following works of contemporary (Modern) Indian Art.**

PAINTING

Sl No.	Title of the painting	Painter	Medium
i.	Rama Vanquishing the pride of the Ocean	Raja Ravi Varma	Oil
ii.	Mother and Child	Jamini Roy	Tempera(Water colour)
iii.	Haldi Grinders	Amrita Sher- Gil	Oil
iv.	Mother Teresa	M.F Hussain	Acrylic

GRAPHIC- PRINT

Sl No.	Title of the Graphic- print	Printmaker	Medium
i.	Children	Somnath Hore	Etching with Aquatint
ii.	Devi	Jyoti Bhatt	Etching
iii.	Of Walls	Anupam Sud	Etching
iv.	Man, Woman and Tree	K. Laxma Goud	Etching

SCULPTURE

Sl No.	Title of the Sculpture	Sculptor	Medium
i.	Triumph of Labour	D.P. Roychowdhury	Bronze and cement
ii.	Santhal family	RamkinkerVaij	Concrete and cement
iii.	Cries Un-heard	Amarnath Sehgal	Bronze
iv.	Ganesha	P.V. Janakiram	Scrap (Oxidized copper, wire and tin)

PAINTING PRACTICAL

UNIT -1 : Nature and Object Study(25 marks)
> Studies on the basis of exercises done in class XI with two or three objects and two draperies (in different colours) for background and foreground. Exercises in pencil with light and shade and in full colour from a fixed point of view.

UNIT -2 : Painting Composition (Nature and life) (25 marks)
> Imaginative painting based on subjects from life and nature in water or poster colours with colour values.

UNIT -3 : Portfolio assessment (20marks)
> a)   Record of entire year's performance from sketch to finished product
> b)   Four selected Nature and Object study exercises in any media.
> c)   Two selected work of paintings composition done during the year.
> d)   One selected work based on any Indian folk Art (Painting)
> (These selected works prepared during the course by the candidates and certified by the school authorities as the work done in the school will be placed before the examiners for assessment.)

Marking Scheme

Part-1	Nature and Object Study	25 Marks
	i. Drawing (composition)	10
	ii. Treatment of media/Shading techniques	05
	iii. Overall impression	10
Part-II	Painting Composition	25 Marks
	i.Compositional arrangement including emphasis on the subject.	10
	ii.Treatment of Media (Colour) and appropriate colour scheme	05
	iii.Originality, Creativity and Overall impression.	10
Part-III	Portfolio assessment	20 Marks
	Record of entire year's performance from sketch to finished product	10
	Four selected Nature and Object study exercises in any media	05
	Two selected work of painting compositions done during the year.	03
	One selected work based on any Indian folk Art(Painting)	02

FORMAT OF THE QUESTIONS

Part – I : Nature and Object Study

- Draw and paint the still life from a fixed point of view
- All the art work should be done on the half imperial size paper
- The objects should be painted in realistic manner with proper light and shade and perspective etc.
- The objects for nature study and object study are to be arranged before the candidates.

Part – II : Painting Composition (Nature and Life)

- Painting Composition on any of the following five subjects
    1. Affairs of family friends and daily life.
    2. Affairs of family professional
    3. Games and sports activities
    4. Nature and fantasy
    5. National, religious, cultural, historical and social events and celebrations
    6. Folk Art /Traditional art.
- Medium (any one) (Water Color, Pastel, Tempera, Acrylic)
- Paper size : Half-imperial size either vertically or horizontally.
- Weightage will be given on well composed drawing, effective use of media and effective composition.

ACCOUNTANCY (055)

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

THEORY: 80 MARKS   **PRACTICAL (PROJECT): 20 MARKS**

PRESCRIBED BOOK: I & II ACCOUNTANCY BOOK (NCERT)

REFERENCE BOOK: T.S.GREWAL

WEIGHTAGE TO FORM OF QUESTIONS

TYPE	MARKS OF EACH QUESTION	NO. OF QUESTION	TOTAL MARKS
Objective type/ MCQ	1	20	20
Short answer type – I	3	6	18
Short answer type – II	4	3	12
Long answer type – I	6	5	30
Total		**34**	**80**

SCHEME OF OPTION:

There is no overall choice in the question paper. However, an internal choice has been provided in 7 questions of one mark, 2 questions of three marks,1 question of four marks and 2 questions of six marks.

TYPOLOGY OF QUESTIONS:

1. Remembering& Understanding   :   55% (44 marks)
2. Applying   :   23.75% (19 marks)
3. Analysing, Evaluating & Creating   :   21.25% (17 marks)

**Note –No. of questions and total marks under each section are subject to change with respect to CBSE sample paper 2024-25.

- **Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%**
- **Select response type questions (MCQ) = 20%**
- **Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%**

COURSE STRUCTURE (THEORY)

UNIT	CHAPTERS	HALF YEARLY	PRE BOARD EXAM	BOARD EXAM
		17 September – 27 September 2024	3rd January – 15th January 2025	As per CBSE Guidelines
1	Accounting for Partnership Firms	50	36	36
2	Accounting for Companies	30	24	24
3	Analysis of financial Statement	-	12	12
4	CashFlow Statement	-	8	8
5	Project Work Project File 12 Marks Viva Voce 08 Marks	20	20	20
	Total	100	100	100

SYLLABUS DETAILS

Part A: Accounting for Partnership Firms and Companies

Unit-1: Accounting for Partnership Firms

- Partnership: features, Partnership deed
- Provisions of the Indian Partnership Act 1932 in the absence of partnership deed
- Fixed v/s fluctuating capital accounts. Preparation of Profit & Loss Appropriation account- division of profit among partners, guarantee of profits.
- Past adjustments (relating to interest on capital, interest on drawing, salary and profit-sharing ratio)
- Goodwill: Meaning, nature, factors affecting and methods of valuation – average profit, super profit and capitalization.

Note: Interest on partner's loan is to be treated as a charge against profits.

Goodwill: meaning, factors affecting, need for valuation, methods for calculation (average profits, super profits and capitalization), adjusted through partners capital/ current account.

Accounting for Partnership firms – Reconstitution and Dissolution

- **Change in the Profit Sharing Ratio** among the existing partners – sacrificing ratio, gaining ratio. Accounting for revaluation of assets and reassessment of liabilities and treatment of reserves and accumulated profits and losses, preparation of revaluation account and balance sheet.

- **Admission of a partner –** effect of admission of a partner on change in the profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities, treatment of reserves and accumulated profits and losses, adjustment of capital accounts and preparation of capital account, current account and balance sheet.

- **Retirement and death of a partner:** effect of retirement/death of a partner on change in profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities, adjustment of accumulated profits, losses and reserves, adjustment of capital accounts and preparation of capital account, current account and balance sheet. Preparation of loan account of the retiring partner.

- Calculation of deceased partner's share of profit till the date of death. Preparation of deceased partner's capital account and his executor's account.

- **Dissolution of a partnership firm:** meaning of dissolution of partnership and partnership firm, types of dissolution of a firm. Settlement of accounts-preparation of realization account, and other related accounts: capital accounts of partners and cash/bank account. (*Excluding piece meal distribution, sale to a company and insolvency of partner(s)).*

> *Note.*   (i)If realized value of tangible assets is not given, it should be considered as realized at book value itself.
> (ii)If the realized value of intangible assets is not given, it should be considered as nil (zero value)
> (iii) In case, the realisation expenses are borne by a partner, clear indication should be given regarding the payment thereof.

Unit-2: Accounting for Companies Accounting for Share Capital

- Features and types of companies
- Share and share capital: nature and types.
- Accounting for share capital**:** issue and allotment of equity and preference shares, Public subscription of shares – over subscription and under subscription of shares; Issue at par and at premium, calls in advance and arrears (excluding interest), issue of shares for consideration other than cash.
- Concept of private placement and Employees stock option plan (ESOP), Sweat Equity.
- Accounting treatment of forfeiture and re-issue of shares.
- Disclosure of share capital in the Balance Sheet of a company.

Accounting for Debentures

- Debentures : Meaning, types, Issue of debentures at par, at a premium and at a discount. Issue of debentures for consideration other than cash; Issue of debentures with terms of redemption; debentures as collateral security-concept, interest on debentures. Writing off discount /loss on issue of debentures.

  Note: Discount or loss on issue of debentures to be written off in the year debentures are allotted from Security Premium Reserve (if it exists) and then from Statement of Profit and Loss as Financial Cost (AS 16)

<div align="center">

Part B: Financial Statement Analysis

</div>

Unit-3: Analysis of Financial Statements

Financial statements of a Company:

Meaning, Nature, Uses and importance of Financial Statement.

Statement of Profit and Loss and Balance Sheet in the prescribed form with major headings and sub headings (as per Schedule III to the Companies Act, 2013).

Note: Exceptional Items, Extraordinary Items and Profit (Loss) from Discontinued Operations are excluded.

- **Financial Statement Analysis:** Meaning, Significance, Objectives, importance and limitations.
- **Tools for Financial Statement Analysis :** Comparative statements, common size statements, Ratio analysis, Cash flow analysis
- **Accounting Ratios:** Meaning, Objectives, Advantages, classification and computation.
- **Liquidity Ratios:** Current ratio and Quick ratio
- **Solvency Ratios:** Debt to Equity Ratio, Total Asset to Debt Ratio, Proprietary Ratio and Interest Coverage Ratio, Debt to Capital Employed Ratio.
- **Activity Ratios:** Inventory Turnover Ratio, Trade Receivables Turnover Ratio, Trade Payables Turnover Ratio, Fixed Asset Turnover Ratio, Net Asset Turnover Ratio and Working Capital Turnover Ratio.
- **Profitability Ratios:** Gross Profit Ratio, Operating Ratio, Operating Profit Ratio, Net Profit Ratio and Return on Investment.

Note : Net profit ratio is to be calculated on the basis of profit before and after tax.

Unit-4: Cash Flow Statement

- Meaning, Objectives, Benefits, Cash and Cash Equivalents, Classification of activities and preparation (as per AS-3 (Revised) (Indirect Method only)

Note:

(i) *Adjustments relating to depreciation and amortization, profit or loss on sale of assets including investments, dividend (both final and interim) and tax.*

(ii) *Bank overdraft and cash credit to be treated as short term borrowings.*

(iii) *Current Investments to be taken as marketable securities unless otherwise specified.*

Note: Previous years' Proposed Dividend to be given effect as prescribed in AS-4, Events occurring after the Balance Sheet date. Current years' proposed dividend will be accounted for in the next year after it is declared by the shareholders.

Project Work: One specific project as per Guidelines published by the CBSE.

One specific project based on financial statement analysis of a company covering any two aspects from the following:

1. Comparative and common size financial statements

2. Accounting Ratios

3. Segment Reports

4. Cash Flow Statements

Part C : PRACTICAL WORK

One specific Project to be assigned. Project / Practical Work : This will include Project/ Practical File – 12 marks Viva Voce – 08 marks.

BUSINESS STUDIES (054)

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

THEORY: 80 MARKS   **PRACTICAL (PROJECT): 20 MARKS**

PRESCRIBED BOOKS:
1.   Business Studies – I (NCERT)
2.   Business Studies – II (NCERT)

REFERENCE BOOK: Poonam Gandhi

WEIGHTAGE OF FORM OF QUESTIONS

TYPE	MARKS OF EACH QUESTION	NO. OF QUESTION	TOTAL MARKS
Objective type/ MCQ	1	20	20
Short Answer I	3	4	12
Short Answer II	4	6	24
Long Answer	6	4	24
Total		34	80

(NB : Subject to change according to Sample Paper issued by CBSE)

SCHEME OF OPTION

There is no overall choice. However, there will be internal choice in 3 marks (2 choices), 4 marks (2 choices) and 6 marks (2 choices). In all, total 6 internal choices.

TYPOLOGY OF QUESTIONS

Remembering and Understanding   -   55% (44 Marks)

Applying   -   23.75% (19 Marks)

Analyzing, Evaluating, Creating   -   21.25% (17Marks)

- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%

- Select response type questions (MCQ) = 20%

- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

COURSE STRUCTURE

UNIT	CHAPTERS	HALF YEARLY EXAM	PRE BOARD / BOARD EXAM
		17 September – 27 September 2024	**PRE BOARD: 3rd January – 15th January 2025** **BOARD EXAM: As per CBSE Guidelines**
1	Nature and Significance of Management		
2	Principles of Management	32	16
3	Business Environment		
4	Planning	24	14
5	Organizing		
6	Staffing		
7	Directing	24	20
8	Controlling		
9	Financial Management	--	15
10	Financial Market		

11	Marketing Management	--	15
12	Consumer Protection		
13	Project Work	20	20
	Total	**100**	**100**

Concept includes meaning and features

SYLLABUS DETAILS
PART A: PRINCIPLES AND FUNCTIONS OF MANAGEMENT

Concept includes meaning and features

Unit 1: Nature and Significance of Management

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

Unit 2: Principles of Management

- Principles of Management- concept and significance
- Fayol's principles of management
- Taylor's Scientific management- principles and techniques
- Compare the contributions of Fayol and Taylor

Unit 3: Business Environment
- Business Environment - concept and importance
- Dimensions of Business Environment- Economic, Social, Technological, Political and Legal.
- Demonetization: concept and features

Unit 4: Planning
- Concept, importance and limitations
- Planning process
- Single use and standing plans. Objectives, Strategy, Policy, Procedure, Method, Rule, Budget and Programme

Unit 5: Organizing
- Concept and importance.
- Organizing Process
- Structure of organization- functional and divisional- concept, Advantages, disadvantages and suitability. Formal and informal organization–concept, advantages and disadvantages
- Delegation: concept, elements and importance
- Decentralization: concept and importance
- Difference between delegation and decentralization

Unit 6: Staffing
- Concept and importance of staffing
- Staffing as a part of Human Resource Management-concept and specialized duties and activities performed by HRM.
- Staffing process
- Recruitment-process, sources – meaning, types, merits and demerits
- Selection- process
- Training and Development- Concept and importance. Methods of training- on the job and off thejob-vestibule training,

apprenticeship training, induction and internship training.

Unit 7: Directing

- Concept and importance
- Elements of Directing
- Motivation-concept, Maslow's hierarchy of needs, Financial and non-financial incentives
- Leadership- concept, styles- authoritative, democratic and laissez faire
- Communication- concept, formal and informal communication; barriers to effective communication, how to overcome the barriers.

Unit 8: Controlling

- Concept and importance
- Relationship between planning and controlling
- Steps in the process of controlling

Part B: BUSINESS FINANCE ANDMARKETING

Unit 9: Financial Management

- Concept, role, and objectives of Financial Management
- Financial Decisions: investment, financing and dividend- Meaning and factors affecting them
- Financial Planning- Concept, objectives and importance
- Capital Structure- Concept and factors affecting capital structure.
- Fixed and Working Capital - Concept and factors affecting their requirements.

Unit 10: Financial Markets

- Financial Markets: Concept, types
- Money market – concept
- Capital market and its types (primary and secondary),
- Difference between – Capital Market v/s Money Market, Primary Market v/s Secondary Market
- Stock Exchange- Meaning, Functions and trading procedure. Meaning of Depository services and Demat account as used in the trading procedure of securities.
- Securities and Exchange Board of India (SEBI)- objectives and functions

Unit 11: Marketing Management

- Marketing- Concept, functions and philosophies
- Marketing Mix - Concept &elements
- Product- branding, labelling and packaging –Concept
- Price- Concept, Factors determining price
- Physical Distribution- concept and components, channels of distribution.
- Promotion- Concept and elements; Advertising, Personal Selling, Sales Promotion and Public Relations

Unit 12: Consumer Protection

- Concept and importance of consumer protection
- Consumer Protection Act, 2019: *Source:*http://egazette.nic.in/WriteReadData/2019/210422.pdf
- Meaning of consumer
- Rights and responsibilities of consumers
- Who can file a complaint?
- Redressal machinery
- Remedies available
- Consumer awareness-Role of consumer organizations and Non- Governmental Organizations (NGOs)

Unit 13: Project Work (As Per CBSE Guidelines)

ECONOMICS (030)

Time : 3 hours   **F.M. : 80(Theory)**
+20(Project)

Prescribed Books :

- **Macro economics – NCERT**
- **Indian economic development – NCERT**

WEIGHTAGE OF CONTENT

Sl. No	TYPE OF THE TEST / CHAPTER'S NAME	HALF YEARLY (80+20) Marks	PRE BOARD / BOARD EXAM
		17 September – 27 September 2024	**PRE BOARD: 3rd January – 15th January 2025** **BOARD EXAM: As per CBSE Guidelines**
1	National Income & related Aggregates	20	10
2	Determination of Income, Employment and Multiplier	12	12
3	Money Banking	8	6
4	Govt. Budget & the economy	-	6
5	Balance of Payment, Foreign Exchange Rate	-	6
6	Indian Economy on the eve of Independence	4	12
7	Economic Planning 1950 -1990	8	
8	Economic Reforms since 1991	10	
9	Human Capital Formation	5	20
10	Sustainable Economic Development	4	
11	Employment	4	
12	Rural Development	5	
13	Development Experience of India – A comparison with Neighbours	-	8
	Total	**80+20**	**80+20**

QUESTION PAPER DESIGN

Marks: 80   **Duration: 3 hrs.**

SN	Typology of Questions	Marks	Percentage
1	**Remembering and Understanding**: Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	**44**	**55%**
2	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	**18**	**22.5%**
3	**Analysing, Evaluating and Creating:** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations. Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	**18**	**22.5%**
	TOTAL	**80**	**100%**

- **Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%**
- **Select response type questions (MCQ) = 20%**
- **Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%**

SYLLABUS DETAILS

PART A: INTRODUCTORY MACROECONOMICS

Unit 1: National Income and Related Aggregates

What is Macroeconomics?

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 or Product method, Expenditure method, Income method. 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 2: it 2: 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 the Reserve Bank of India): Bank of issue, Govt. Bank, Banker's Bank, Control of Credit through Bank Rate, CRR, SLR, Repo Rate and Reverse Repo Rate, Open Market Operations, Margin requirement.

Unit 3: Determination of Income and Employment

- Aggregate demand and its components.
- 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 4: 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, balanced, surplus & deficit budget.
- Measures of government deficit - revenue deficit, fiscal deficit, primary deficit.

Unit 5: 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 fixed and flexible exchange rate.
- Managed Floating exchange rate system.

PART B: INDIAN ECONOMIC DEVELOPMENT

Unit 6: Development Experience (1947-90) and Economic Reforms since 1991: 28 Periods

- A brief introduction of the state of Indian economy on the eve of independence.
- Indian economic system and common goals of Five Year Plans.
- Main features, problems and policies of agriculture (institutional aspects and new agricultural strategy), industry (IPR 1956; SSI – role & importance) and foreign trade.

Economic Reforms since 1991:

- Features and appraisals of liberalisation, globalisation and privatisation (LPG policy);

- Concepts of demonetization and GST.

Unit 7: Current challenges facing Indian Economy :

Human Capital Formation:

- How people become resource; Role of human capital in economic development; Growth of Education Sector in India .

Rural development:

- Key issues - credit and marketing - role of cooperatives; agricultural diversification; alternative farming - organic farming.

Employment:

- Growth and changes in work force participation rate in formal and informal sectors; problems and policies .

Sustainable Economic Development:

- Meaning, Effects of Economic Development on Resources and Environment, including global warming .

Unit 8: Development Experience of India:

- A comparison with neighbours

- India and Pakistan

- India and China

- Issues: economic growth, population, sectoral development and other Human Development Indicators.

PART C: PROJECT IN ECONOMICS:

Guidelines for Project Work in Economics (Class XII)

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 **expectations** of the project work are that:
- Learners will complete only **ONE** project in each academic session
- Project should be of 3,500-4,000 words (excluding diagrams & graphs), preferably hand-written.
- It will be an independent, self-directed piece of study

Scope of the project:
Learners may work upon the following lines as a suggested flow chart:

Choose a title/topic

⬇

Collection of the research material/data

⬇

Organization of material/data

⬇

Present material/data

⬇

Analysing the material/data for conclusion

⬇

Draw the relevant conclusion

⬇

Presentation of the Project Work
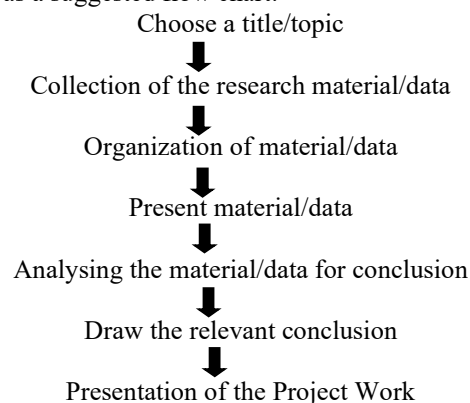
Expected Checklist:
- Introduction of topic/title
- Identifying the causes, consequences and/or remedies
- Various stakeholders and effect on each of them

- 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 end of the stipulated term, each learner will present the research work in the Project File to the external and Internal examiner. **The questions should be asked from the Research Work/ Project File of the learner. 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.

Marking Scheme :

Marks are suggested to be given as –

S. No.	Heading	Marks Allotted
1	Relevance of the topic	3
2	Knowledge Content/Research Work	6
3	Presentation Technique	3
4	Viva-voce	8
	Total	20 Marks

Suggestive List of Projects:

- Micro and Small Scale Industries
- Contemporary Employment situation in India
- Goods and Services Tax Act and its Impact on GDP
- Human Development Index
- Self-help group
- Monetary policy committee and its functions
- Government Budget & its Components
- Exchange Rate determination – Methods and Techniques
- Livestock – Backbone of Rural India
- Sarba Siksha Abhiyan – Cost Ratio Benefits
- Minimum Support Prices
- Waste Management in India – Need of the hour
- Digital India- Step towards the future
- Vertical Farming – an alternate way
- Make in India – The way ahead
- Rise of concrete jungle
- Any other news paper articles and its evaluation on basis of economic principles.
- Food supply channel in India
- Disinvestment policy of the Govt.
- Health expenditure (of any state)
- Inclusive growth strategy
- Trends in Credit availability in India
- Role of RBI in Control of Credit
- Currency War – reasons and repercussions
- Alternate fuel types and importance
- Golden Quadrilateral –cost ratio benefits
- Relation between stock price index and economic health of nation.
- Minimum wage rate – Approach and application
- Rain Water Harvesting – a solution to water crises
- Bumper Production- Boon or Bane for the farmer
- Organic Farming – Back to the Nature
- **Any other topic**

ENTREPRENEURSHIP (066)

Time : 3 Hours **F. M. = 100**
Theory = 70 Marks
Practical (Project) = 30 Marks

Prescribed Book :

Entrepreneurship – NCERT

Reference Book :

Entrepreneurship by "Poonam Gandhi"

Weightage of form of questions :

Type	Marks of Each Question	No. of Questions	Total Marks
Very Short Answer-Objective	1	18	18
Short Answer (SA-I)	2	6	12
Short Answer (SA-II)	3	5	15
Long Answer (LA)	5	5	25
Total		**34**	**70**

TYPOLOGY OF QUESTIONS:

Remembering & Understanding - 28.5% (20 Marks)
Applying - 43% (30 Marks)
Analysing, Evaluating & Creating - 28.5% (20 Marks)

- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%
- Select response type questions (MCQ) = 20%
- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

Unit	Chapters	HALF-YEARLY	PRE-BOARD EXAM	BOARD EXAM
		17 September – 27 September 2024	3rd January – 15th January 2025	As per CBSE Guidelines
1	Entrepreneurial opportunities	20	15	30
2	Entrepreneurial planning	20	15	
3	Enterprise marketing	15	15	20
4	Enterprise growth strategies	15	15	
5	Business arithmetic	-	10	20
6	Resource mobilization	-	-	
7	Project work	30	30	30
		100	**100**	**100**

Syllabus in Detail
Course Content

Unit-1 : Entrepreneurial Opportunity
- Sensing Entrepreneurial Opportunities
- Environment Scanning
- Problem Identification
- Idea fields
- Spotting Trends
- Creativity and Innovation
- Selecting the Right Opportunity

Unit-2 : Entrepreneurial Planning
- Forms of Business Organisation- Sole Proprietorship, Partnership, Company
- Business Plan – Concept, Format
- Components:
  - Organisational Plan;
  - Operational Plan;
  - Production Plan;
  - Financial Plan;
  - Marketing Plan;
  - Human Resource Plan

Unit-3 : Enterprise Marketing
- Marketing and Sales Strategy
- Branding, Logo, Tagline
- Promotion Strategy

Unit-4 : Enterprise Growth Strategies
- Franchising – Concepts, Types
- Franchising: Advantages and Limitations to franchiser and franchisee
- Mergers and Acquisition – Concepts, Reasons, Types
- Reasons for Mergers and Acquisitions

Unit-5 : Business Arithmetic
- Unit of Sale, Unit Cost for multiple products or services
- Break even analysis for multiple products or services
- Computation of working capital
- Inventory control and Economic Order Quantity (EOQ)
- Return on Investment (ROI) and Return on Equity (ROE)

Unit-6 : Resource Mobilisation
- Capital Market –Concept
- Primary Market – Concept, Methods of issue
- Angel Investor - Features
- Venture Capital – Features, Funding

Project Work

1) Business Plan
2) Market Survey
    - 10 Marks each for two projects.
    - 5 Marks for Numerical Assessment
    - 5 Marks for Viva

Note:Students need to complete both the projects. Guidelines for both projects are given in the CBSE Textbook

Prescribed Books :

1. Entrepreneurship – Class XII – C.B.S.E, Delhi
2. Everyday Entrepreneurs – The harbingers of Prosperity and creators of Jobs – Dr. Aruna Bhargava

HISTORY (027)

PRESCRIBED BOOKS-

THEMES IN INDIAN HISTORY PART-I, IIAND III (NCERT)

QUESTIONWISE BREAK UP

Book	MCQ		SA		LA		Source Based		Map	Total	
	No of question	MM	No of question	MM	No of question	MM	No of question	MM		Theory	Internal
Part I	7	1	2	3	1	8	1	4		**25**	
Part II	7	1	2	3	1	8	1	4		**25**	
Part III	7	1	2	3	1	8	1	4		**25**	
Map									05	**05**	
Project											**20**
Total	**21X1=21**		**6X 3 = 18**		**3X 8=24**		**3X4=12**		**1X5=5**	**100 marks**	

N.B-The above question paper pattern has been designed as per the CBSE sample paper 2024-25.

- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%
- Select response type questions (MCQ) = 20%
- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

WEIGHTAGE BASED ON COMPETENCIES

	Competencies	Total Marks	% Weightage
1	Remembering: Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	**21**	**26.25%**
	Understanding: Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas	**18**	**22.50%**
2	Applying and Analysing : applying acquired knowledge, facts, techniques and rules and solving the problem.	**24**	**30%**
3	Formulating, Evaluating and Creating skills: Examining, making inferences and finding evidence to support generalizations; Presenting and defending opinions by making judgments about information and piling information	**12**	**15%**
4	Map skills-	**5**	**6.25%**
		80	**100%**

COURSE STRUCTURE THEORY (80 MARKS)

Sl. No.	TYPE OF TEST	Half Yearly (80 Marks)	Pre Board / Board Exam (80 Marks)
		17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
Book-I			
Ch-1	**BRICK, BEADS AND BONES-** The Harappan Civilization	15	
Ch-2	**KINGS, FARMERS AND TOWNS-** Early States and Economies (c. 600 BCE-600 CE)	15	25
Ch-3	**KINSHIP, CASTE AND CLASS-** Early Society Societies (C. 600 BCE-600 CE)	10	

Sl. No.	TYPE OF TEST	Half Yearly (80 Marks)	Pre Board / Board Exam (80 Marks)
		17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
Ch-4	**THINKERS, BELIEFS AND BUILDINGS-** Cultural Developments (c. 600 BCE - 600 CE)	15	
Ch-5	**THROUGH THE EYES OF TRAVELLERS-** Perceptions of Society (c. tenth to seventeenth century)	10	
Ch-6	**BHAKTI –SUFI TRADITIONS**: Changes in Religious Beliefs and Devotional Texts (c. eighth to eighteenth centuries)	10	
Ch-7	**AN IMPERIAL CAPITAL: VIJAYANAGARA-** fourteenth to sixteenth centuries)		25
Ch-8	**PEASANTS, ZAMINDARS AND THE STATE**:		
Ch-09	**COLONIALISM AND THE COUNTRYSIDE:**		
Ch-10	**REBELS AND THE RAJ:** 1857 Revolt and its Representations		
Ch-11	**MAHATMA GANDHI AND THE NATIONALIST MOVEMENT**		25
Ch-12	**FRAMING THE CONSTITUTION**: The Beginning of a New Era		
	Map Work	5	5
	Total	80	80
	PROJECT WORK		20
			100

THEMES IN INDIAN HISTORY

THEMES	Learning objectives	Suggestive teaching learning process	Learning outcome with specific competencies
		PART-I	
1.**BRICKS, BEADS AND BONES** The Harappan Civilization: Broad overview: Early urb an centers Story of discovery: Harappan civilization Excerpt: Archaeological report on a major site Discussion: How it has been utilized by archaeologists/ historians	• Familiarize the learner with early urban centers as economic and social institution. • Introduce the ways in which new data can lead to a revision of existing notions of history	• Inquiry based use of questions to explore. Illustrate how archaeological excavations are undertaken, and their findings are interpreted. • Use of Picture charts and Map reading to trace the growth of urban centres.	At the completion of this unit students will be able to: ● State and deduce the multi-lateral aspects of Harappan civilization in order to understand the first civilization of the world. ● develop an ability to use and analyze socio- economic, political aspects of Harappa. ● investigate and interpret historical and contemporary sources and viewpoints of ASI and historians on Harappa.
2.**KINGS, FARMERS AND TOWNS**:Early States and Economies (c. 600 BCE-600 CE) 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: Ashokan inscription and Gupta period land grant Discussion: Interpretation of inscriptions by	• Familiarize the learner with major trends in the political and economic history of the subcontinent. • Introduce inscriptional analysis and the ways in which	• Use of Archaeological Evidence Videos and Narration method to bring an understanding of the trends. • Virtual tour to analyse and understand the inscriptions	● explain major trends in the 6th century BCE in order to understand the political and economic history of the subcontinent. • analyze inscriptional evidences and the ways in which these have shaped the understanding of political and economic processes.

historians	these have shaped the understanding of political and economic processes.		
3.KINSHIP, CASTE AND CLASS Early Society Societies (C. 600 BCE-600 CE) Broad overview: Social Histories: Using the Mahabharata Issues in social history, inclu ding caste, class, kinship an d gender Story of discovery: Transmission and publications of the Mahabha rat Excerpt: from the Mahabharata, illustrating how it has been used by historians. Discussion: Other sources for reconstructing social history	• Familiarize the learners with issues in social history. • Introduce the strategies of textual analysis and their use in reconstructing social history .	• Narration of the issues in social history. • Story boards can be used to discuss the scriptures of ancient India. • Debate & Group discussion condition of women during Mahabharata age.	• analyze social norms in order to understand the perspectives of society given in the scriptures of ancient India. • examine the varied dimensions explored by historians in order to understand dynamic approach of Mahabharata
4.THINKERS, BELIEFS AND BUILDINGS Cultural Developments (c. 600 BCE - 600 CE) Broad overview: A History of Buddhism: Sanchi Stupa a) A brief review of religious histories of Vedic religion, Jainism, Vaishnavism, Shaivism (Puranic Hinduism) 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.	• Discuss the major religious developments in early India • Introduce strategies of visual analysis and their use in reconstructing the theories of religion.	• Use of flow chart and Tabular columns to compare the major religions in ancient India. • Picture chart to discuss the stories in the sculptures. • Use of map to locate the places of religious development.	• compare the distinct religious facets in order to understand the religious developments in ancient India . • elucidate the rich religious sculpture and infer the stories hidden in it.
PART-II			
5.THROUGH THE EYES OF TRAVELLERS Perceptions of Society (c. tenth to seventeenth century) Broad Overview: outlines of social and cultural life as they appear in traveller's account. Story of their writings: A discussion of where they travelled, what they wrote and for whom they wrote. Excerpts: from Al Biruni, Ibn Battuta, Francois Bernier. Discussion: What these travel accounts can tell us and how they have been interpreted by historians	• Familiarize the learner with the salient features of social histories described by the travellers. • Discuss how traveller's accounts can be used as sources of social history	• Think Pair and share the features of social history as narrated by travellers. • Reading the text for knowing the traveller's accounts which is the source of social history. • Narration of the writings of all the travellers.	• identify the accounts of foreign travellers in order to • understand the social political and economic life during the tenure of different rulers in the medieval period. • Compare and contrast the perspectives of Al Biruni, Ibn Battuta and Bernier towards Indian society.
6.BHAKTI –SUFI TRADITIONS: Changes in Religious Beliefs and Devotional Texts (c. eighth to eighteenth centuries) Broad overview: a. Outline of religious developments during this period saints. b. Ideas and practices of the Bhakti-Sufi Story of Transmission: How Bhakti-Sufi compositions have been preserved. Excerpt: Extracts from selected Bhakti-Sufi works. Discussion: Ways in which these have been interpreted by historians.	• Familiarize the learner with the religious developments. • Discuss ways of analyzing devotional literature as sources of history.	• Use chronological order to track the developments. • Venn diagram to make comparison of different religious movements • Group discussion on the value impact.	• summarize the philosophies of different Bhakti and Sufi saints to understand the religious developments during medieval period. • comprehend the religious movement in order to establish unity, peace, harmony and brotherhood in society.

7.AN IMPERIAL CAPITAL: VIJAYANAGARA (c. fourteenth to sixteenth centuries) Broad Over View: New Architecture: Hampi a. Outline of new buildings during Vijayanagar period-temples, forts, irrigation facilities. b. Relationship between architecture and the political system Story of Discovery: Account of how Hampi was found. Excerpt: Visuals of buildings at Hampi Discussion: Ways in which historians have analyzed and interpreted these structures	• Familiarize the learner with the new buildings that were built during the time. • Discuss the ways in which architecture can be analyzed to reconstruct history	• Visit museums attached to archaeological sites. To learn about the nature, characteristics and significance of archaeological artefacts, historical monuments which could be of political, social, or religious significance. • View documentary Videos and observe Pictures on architecture. • Graphic organisers to make comparison of the study reports	• classify the distinctive architectural contributions of the Vijayanagar empire to comprehend the richness of mingled cultures of deccan India. • analyze accounts of foreign traveller's on Vijayanagar in order to interpret political, social and cultural life of the city.
8.PEASANTS, ZAMINDARS AND THE STATE: Agrarian Society and the Mughal Empire (c. sixteenth-seventeenth centuries) Broad overview: The Aini-Akbari a. Structure of agrarian relations 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-iAkbari. Discussion: Ways in which historians have used texts to reconstruct history.	• Discuss the developments in agrarian relations. • Discuss how to supplement official documents with other sources.	• Group discussion on the agrarian development and impact. • Create a Venn diagram or a table and compare the changes during the 16th and 17th century, • Debate on the differences in the sector and arrive on the impact.	• comprehend the facets of agrarian developments in order to understand the relationship between the state and the agriculture during Mughal period. • compare and contrast the agrarian changes occurred during sixteenth and seventeenth centuries.
PART-III			
9.COLONIALISM AND THE COUNTRYSIDE: Exploring Official Archives Broad overview: Colonialism and Rural Society: Evidence from Official Reports a) Life of zamindars, peasants and artisans in the late18thcentury b). Permanent Settlement, Santhals and Paharias Story of official records: An account of why official Investigations in to rural societies were undertaken and the types of records and reports produced. Excerpts: From Fifth Report Discussion: What the offici al records tell and do not tell, and how they have bee n used by historians	• Discuss how colonialism affected zamindars, peasants and artisans. • Comprehend the problems and limits of using official sources for understanding the lives of the people.	• Discussion and deliberation on the colonialism and revenue system. • list the problems for understanding the lives of the people. • Classify the records and reports.	• compare and contrast the revenue systems introduced by the British in order to understand the economic aspects of colonization in India. • analyze the colonial official records& reports in order to understand the divergent interest of British and Indians.
10.REBELS AND THE RAJ: 1857 Revolt and its RepresentationsBroad overview: a. The eventsof1857-58. b. Vision of Unity c. 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.	• Discuss how the events of 1857 are being interpreted. • Discuss how visual material can be used by historians.	• Movie or video watching on events of 1857 followed by discussion. • Problem solving method to question the events and suggest actions.	• correlate the Planning and coordination of the rebels of 1857 to infer its domains and nature. • examine the momentum of the revolt to understand its spread. • analyze how revolt created vision of unity amongst Indians. • identify and interpret visual

			images to understand the emotions portrayed by the nationalist and British.
11.MAHATMA GANDHI AND THE NATIONALIST MOVEMENT: Civil Disobedience and Beyond Broad overview: a. The Nationalist Movement 1918 -48. b. The nature of Gandhian politics and leadership. Focus: Mahatma Gandhi and the three movements and his last days as "finest hours" Excerpts: Reports from English and Indian language newspapers and other contemporary writings. Discussion: How newspapers can be a source of history.	• Familiarize the learner with significant elements of the Nationalist movement and the nature of Gandhian leadership. • Discuss how Gandhi was perceived by different groups. • Discuss how historians need to read and interpret newspapers diaries and letters as a historical source.	• Collaborate and create. a timeline of the movement. • Making a collage of events. individuals, and institutions under the Gandhian leadership. • Doing a Project on historical source such as newspapers, biographies and autobiographies diaries and letters.	• correlate the significant elements of the nationalist movement and the nature of ideas, individuals, and institutions under the Gandhian leadership. • analyze the significant contributions of Gandhiji to understand his mass appeal for nationalism. Analyze the perceptions and contributions of different communities towards the Gandhian movement. • analyze the ways of interpreting historical source such as newspapers, biographies and auto-biographies diaries and letters.
12.FRAMING THE CONSTITUTION: The Beginning of a New Era Broad overview: The Making of the Constitution an overview: a. Independence and then new nation state. b. The making of the Constitution Focus: The Constituent Assembly Debates Excerpts: from the debates Discussion: What such debates reveal and how they can be analyzed	• Discuss how the founding ideals of the new nation state were debated and formulated. • Understand how such debates and discussions can be read by historians • Discuss the other countries constitution and compare.	• Mock session of the assembly to debate and discuss the ideals. • Use sources & case studies for a Group discussion	• highlight the role of Constituent Assembly to understand functionaries in framing the constitution of India. • analyze how debates and discussions around important issues in the Constituent Assembly shaped our Constitution

		LIST OF MAPS	
		BOOK-I	
1.	Page 2	Mature Harappan sites: ● Harappa, Banawali, Kalibangan, Balakot, Rakhigarhi, Dholavira, Nageshwar, Lothal, Mohenjodaro, Chanhudaro, KotDiji.	
2	Page 30	Mahajanapada and cities: ● Vajji, Magadha, Kosala, Kuru, Panchala, Gandhara, Avanti, Rajgir, Ujjain, Taxila, Varanasi	
3	Page 33	**Distribution of Ashokan inscriptions:** ● Pillar inscriptions – Sanchi, Topra, Meerut Pillar and Kaushambi. ● Kingdom of Cholas, Cheras and Pandyas	
4	Page 43	**Important kingdoms and towns**: ● Kushanas, Shakas, Satavahanas, Vakatakas,Guptas ● Cities/towns: Mathura, Kanauj, Puhar, Braghukachchha, Shravasti, Rajgir, Vaishali, Varanasi,Vidisha	
5	Page 95	Major Buddhist Sites: ● Nagarjunakonda, Sanchi, Amaravati, Lumbini, Nasik, Bharhut, Bodh Gaya, Ajanta	
		BOOK-II	
6	Page 174	Bidar, Golconda, Bijapur, Vijayanagar, Chandragiri, Kanchipuram, Mysore, Thanjavur, Kolar, Tirunelveli	
7	Page 214	Territories under Babur, Akbar and Aurangzeb: ● Delhi, Agra, Panipat, Amber, Ajmer, Lahore, Goa	
		BOOK-III	

8	Page 267	Territories/cities under British Control in1857: Punjab, Sindh, Bombay, Madras, Berar, Bengal, Bihar, Orissa, Surat, Calcutta, Patna, Allahabad.
9	Page 275	Main centres of the Revolt of 1857: Delhi, Meerut, Jhansi, Lucknow, Kanpur, Azamgarh, Calcutta, Benaras, Gwalior, Jabalpur, Agra, Awadh.
10		Important centres of the National Movement: Champaran, Kheda, Ahmedabad, Benaras, Amritsar, Chauri Chaura, Lahore, Bardoli, Dandi, Bombay (Quit India Resolution), Karachi

PROJECT WORK

INTRODUCTION:

History is one of the most important disciplines in school education. It is the study of the past, which helps us to understand our present and shape our future. It promotes the acquisition and understanding of historical knowledge in breath and in depth across cultures.

The course of history in senior secondary classes is to enable students to know that history is a critical discipline, a process of enquiry, a way of knowing about the past rather than just a collection of facts. The syllabus helps them to understand the process, through which a historian collects, chooses, scrutinizes and assembles different types of evidences to write history.

The syllabus in class-XI is organized around some major themes in world history. In class XII the focus shifts to a detailed study of some themes in ancient, medieval and modern Indian history.
CBSE has decided to introduce project work in history for classes XI and XII in 2013-14 as a part of regular studies in classroom, as project work gives students an opportunity to develop higher cognitive skills. It takes students to a life beyond text books and provides the map platform to refer materials, gather information, analyse it further to obtain relevant information and decide what matter to keep and hence understand how history is constructed

OBJECTIVES

Project work will help students:

- To develop skill to gather data from a variety of sources, investigate diverse viewpoints and arrive at logical deductions.

- To develop skill to comprehend, analyse, interpret, evaluate historical evidence and understand the limitation of historical evidence.

- To develop 21st century managerial skills of co-ordination, self-direction and time management.

- To learn to work on diverse cultures, races, religions and lifestyles.

- To learn through constructivism-a theory based on observation and scientific study.

- To inculcate a spirit of inquiry and research.

- To communicate data in the most appropriate form using a variety of techniques.

- To provide greater opportunity for interaction and exploration.

- To understand contemporary issues in context to our past.

- To develop a global perspective and an international outlook.

- To grow into caring, sensitive individuals capable of making informed, intelligent and independent choices.

- To develop lasting interest in history discipline.

GUIDELINES TO TEACHERS

This section provides some basic guidelines for the teachers to take up projects in History. It is very necessary to interact, support, guide, facilitate and encourage students while assigning projects to them.

- The teachers must ensure that the project work assigned to the students individually/ In-groups and discussed at different stages right from assigning topic, draft review to finalization.

- Students should be facilitated in terms of providing relevant materials, suggesting websites, obtaining of required permission for archives, historical sites, etc.
- The Project Work should be suitably spaced from April to November in classes XI and XII so that students can prepare for Final Examination.
- The teachers must ensure that the students submit original work.
- Project report should be Handwritten only. (Eco-friendly materials can be used by students)

The following steps are suggested:

1. Teacher should design and prepare a list of 15-20 projects and should give an option to a student to choose a project as per his/her interest.

2. The project must be done individually /In-groups.

3. The topic should be assigned after discussion with the students in the class to avoid repetition and should then be discussed at every stage of submission of the draft/final project work.

4. The teacher should play the role of a facilitator and should closely supervise the process of project completion, and should guide the children by providing necessary inputs, resources etc. so as to enrich the subject content.

5. The Project Work needs to enhance cognitive, affective, and psychomotor domains in the learners. It will include self-assessment and peer assessment, and progress of the child in project based and inquiry-based learning. Art integrated Activities, experiments, models, quizzes, role plays, group work, portfolios, etc., along with teacher assessment. (NEP-2020) The Project work can culminate in the form of Power Point Presentation/Exhibition/Skit/albums/files/song and dance or culture show /story telling/debate/panel discussion, paper presentation and whichever is suitable to visually impaired candidates.

6. Students can use primary sources available in city archives, Primary sources can also include newspaper cuttings, photographs, film footage and recorded written/speeches. Secondary sources may also be used after proper authentication.

7. Evaluation will be done by external examiner appointed by the Board in class XII.

Note: The project reports are to be preserved by the school till the final results are declared, for scrutiny by CBSE.

FEW SUGGESTIVE TOPICS FOR CLASS XII PROJECTS.

1. The Indus Valley Civilization-Archeological Excavations and New Perspectives
2. The History and Legacy of Mauryan Empire
3. "Mahabharat"- The Great Epic of India
4. The History and Culture of the Vedic period
5. Buddha Charita
6. A Comprehensive History of Jainism
7. Bhakti Movement- Multiple interpretations and commentaries.
8. "The Mystical Dimensions of Sufism
9. Global legacy of Gandhian ideas
10. The Architectural Culture of the Vijayanagar Empire
11. Life of women in the Mughal rural society
12. Comparative Analysis of the Land Revenue Systems introduced by the Britishers in India
13. The Revolt of 1857- Causes; Planning & Coordination; Leadership, Vision of Unity
14. The Philosophy of Guru Nanak Dev
15. The Vision of Kabir
16. An insight into the Indian Constitution

17. Comparative study of Stupas and Pillar edicts
18. Comparative study of Mughal and Vijayanagar architecture

Projects are an imperative component in enhancing students learning with the related themes. In the research project, students can go beyond the textbook and explore the world of knowledge. They can conceptualize under the embedded themes. Forms of rubrics are a significant aspect and to be discussed in the classroom itself for clear understanding of concept and for assessment.)

Guidelines for History Project Work: 20 Marks

One Project to be done throughout the session, as per the existing scheme.

1.Steps involved in the conduct of the project:

Students may work upon the following lines as a suggested flow chart:
1. Choose a Title/Topic
2. Need of the Study, Objective of the Study
3. Hypothesis
4. Content -Timeline, Maps, Mind maps, Pictures, etc.
5. (Organization of Material/Data
6. Present Material/Data)
7. Analyzing the Material/Data for Conclusion
8. Draw the Relevant Conclusion
9. Bibliography

2. Expected Checklist for the Project Work:

• Introduction of topic/title

• Identifying the causes, events, 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 strategies suggested during 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.

3. Assessment of Project Work:

• Project Work has broadly the following phases: Synopsis/ Initiation, Data Collection, Data Analysis and Interpretation, Conclusion.

• The aspects of the project work to be covered by students can be assessed during the academic year.

• 20 marks assigned for Project Work can be divided in the following manner:

ASSESSMENT

Allocation of Marks (20)

The marks will be allocated under the following heads:

	Assessment Rubrics	Marks
1	Introduction, Statement of Purpose/Need and objectives of the study, Hypothesis/Research Question, Review of Literature, Presentation of Evidence, Methodology, Questionnaire, Data Collection.	6
2	Significance and relevance of the topic; challenges encountered while conducting the research.	5
3	Content analysis and its relevance in the current scenario. Conclusion, Limitations, Bibliography, Annexures and Overall Presentation	5
4	External/ Internal Viva based on the project	4
	TOTAL	**20**

GEOGRAPHY(029)

Time Allowed:3 Hours **Maximum Marks:70**

Prescribed books:
1. Fundamentals of Human Geography, Class -XII(NCERT)
2. India-People and Economy, Class- XII(NCERT)
3. Practical Work in Geography, Part-II, Class XII (NCERT)

COURSE STRUCTURE

	TYPES OF TEST / CHAPTER	HALF YEARLY	PRE BOARD / BOARD EXAM
		17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
Fundamentals of Human Geography			
1	Ch-1:Human Geography- Nature & Scope	5	3
2	Ch-2:The World Population Distribution, Density and Growth.	10	8
	Ch-3:Human Development		
3	Ch-4:Primary Activities	15	19
	Ch-5:Secondary Activities		
	Ch-6:Tertiary & Quaternary Activities		
4	Ch-7:Transport,Communication& Trade	----	
	Ch-8:International Trade		
	Map Work on identification	5	5
India-People and Economy			
1	Ch-1:Population: Distribution, Density, Growth and Composition	7	5
2	Ch-2: Human Settlements	5	3
3	Ch-3:Land Resource and Agriculture	8	10
	Ch-4:Water Resources	5	
	Ch-5:Mineral and Energy Resources	5	
	Ch-6:Planning and Sustainable Development in Indian Context	---	
4	Ch-7:Transport and Communication	---	7
	Ch-8:International Trade	---	
5	Ch-9:Geographical Perspective on Selected Issues and Problems.	---	5
	Map work on location	5	5
	Total Marks	70	70

PRACTICAL WORK IN GEOGRAPHY-II

UNIT	NAME	HALF-YEARLY	BOARD
ONE	Ch-1: Data-its Source & Compilation	13	
	Ch-2: Data Processing	12	
TWO	Ch-3: Graphical Representation of Data		18
	Ch-4: Spatial Information Technology	-	7

Practical file(03 marks)& Viva (02 marks)	5	5
Total Marks	**30**	**30**

- **Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%**
- **Select response type questions (MCQ) = 20%**
- **Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%**

COURSE CONTENT
Fundamentals of Human Geography

Chapter No. and Name	Specific Learning Objectives	Suggested Teaching Learning Process	Learning Outcomes
Ch-1 Human Geography	• To define Human Geography and describe the nature and scope of Human Geography as a discipline	• Case Study on determinism and possibilism given in NCERT to be used to explain the concept. • Prepare a concept map of the chapter explaining the following: Definition of Human Geography, nature, scope, schools of thought, branches of Human Geography	**At the completion of this unit students will be able to:** • define the term Human Geography • elucidate the Inter dependence between Nature and Human beings. • State the fields and sub fields of Human Geography and its relation with other branches of Social Sciences. • differentiate between Environmental determinism and Possibilism. • explain Neo-determinism with examples from real life.
Ch-2 The World Population - distribution, density and growth	• To familiarize learners with some basic concepts of Population Geography. • To understand the patterns of population distribution in the world and correlate the factors influencing population distribution.	• On a world map mark and label ten most populous countries of the world. • Class discussion on how science and technology helped in population growth. • List the reasons for human migration. • On the world map identify the countries of Europe and Asia with negative growth rate of population and African countries with growth rate of population more than three percent. • Students can be asked to find out the density of population of their respective state/district/city. • Case Study on Thomas Malthus(optional)Prepare a glossary	• calculate density of population, birth rate and death rate. Name and define the components responsible for population change. • understand the stages of population growth in the world using Demographic Transition Theory. • suggest measures to control population growth. • define the following terms: Growth of population, Natural growth of population, Positive growth of population, Negative growth of population
Ch-3 Human Development	• To understand the concept human development introduced by Dr. Mehbub Ul Haq	• The lesson can be introduced by asking students to discuss with their peer group • What is a meaningful life? • Discuss with your peer how Beti Bachao and Beti padhao	• differentiate between growth and development • explain the three basic indicators of human development and measure the level of Human Development. • describe Human Development

Chapter No. and Name	Specific Learning Objectives	Suggested Teaching Learning Process	Learning Outcomes
	and Prof. Amartya Sen.	programme introduced by the Government of India can address the issue of declining sex ratio and make life more meaningful for girls. • Enact a play to show how choices get limited due to lack of capability in areas of income, health care and education. • Interview a lady vegetable vendor, cobbler and a sweeper in the community and note how their opportunities were limited because of gender, caste and income.	• index published by UNDP • compare HDI with Human Poverty Index. • explain the key pillars of human development with examples. • compare Income approach, Welfare approach, Basic Needs approach and capability approach to understand the concept Human Development. • to categories countries on the basis of their HDI and explain their characteristics.

Ch-4
 	
Primary Activities
	• To understand various categories of economic activities.
	• To describe Primary activities and relate the physical and social factors that affect the type of primary activities practised in different regions of the world.
	• To explain main features of different types of agricultural system practiced in the world.
		• Class discussion: Why are people in coastal areas and plains engaged in fishing and agriculture?
		• Describe the life of a nomadicherder.
		• Mark and label the following on an outline world map:
		   • Major areas of subsistence gathering
		   • Major are as of nomadicherding of the world.
		• Major are as of commercial e stock rearing
		• Major are as of extensive commercial grain faming
		• Major are as of mixed farming of the World
			• define the following terms: Economic activities, Primary activities, Red Collar Worker, Pastoral Nomadism
			• explain food gathering as an economic activity.
			• distinguish between pastoral nomadism and commercial estockrearing.
			• differentiate between primitive subsistence and intensive e subsistence farming.
			• describe the characteristic features of plantation agriculture as a type of commercial farming.
			• analyse why is there low yield per acre but high yield per person in areas of extensive grain cultivation.
			• compare and contrast the farming practices in the developed urban areas of the world.
			• analyse how the model of Kolkhoz introduced in the erstwhile USSR boost agricultural production.
			• examine the reasons for success of cooperative farming in the European countries.
			• differentiate between open cast mining and shaft mining.
			• discuss how mining can have impact on humans and environment

Ch-5 **Secondary Activities**	• To develop understanding of secondary activities	• The students can be asked to prepare a list of factory made goods they use in their daily life and	• explain key concepts such as, large-scale manufacturing, high technology

Chapter No. and Name	Specific Learning Objectives	Suggested Teaching Learning Process	Learning Outcomes
	with emphasis on manufacturing industries. • To give an overview of manufacturing processes, types, its significance and recent changes.	categorize them as biodegradable and non-biodegradable. • List out ten global brands, their logo sand products. • The students can be taken out for a visit to local industry and asked to prepare a report on their observations regarding raw material used, finished product, production process, labour inputs, environmental impact and social responsibility • The students can be asked to prepare a sketch, poster, poem or write-up about the environmental conditions surrounding an industry.	industry, organizational setup, foot-loose industries Agri business etc. • identify and explain the factors affecting the location an industry. • differentiate between different types of industries on the basis of size, raw material, ownership and output. • differentiate between cottage industry and small scale industry. • explain the importance of high-tech industries and reason for them being attracted to the peripheral areas of major metro politancities. • compare large scale industry and modern high tech industry with examples • understand and analyses the interrelationship between industrial development and standard of living.
Ch-6 Tertiary and Quaternary Activities	• To understand different types of tertiary activity and its importance in the economy.	• Make a list of economic activities under different categories. • Make a list of departmental stores and chain stores that you visit regularly. • Class discussion on: How convenient and beneficial the fast-growing service sector in the world.	• compare and contrast traditional and modern economic activities. • students correlate tertiary activities and their role in the economic development of a country. • describe different types of tertiary activities. • discuss different types of trading centres found in rural and urban areas and role played by them in local economy. • describe quinary activities and its role in advanced economies. • discuss how tertiary, quaternary and quinary activities have replaced jobs in primary and secondary sectors. • define the following terms: BPO, Outsourcing, KPO, Departmental Store, Chain Store, Whole sale trading
Ch-7 Transport and Communication	• To acquire knowledge about various modes of transport in different continents. • To compare and synthesize the information about major transport routes around the	• Students can be asked to do a survey of their class about the means of transport being used by students to reach school. Prepare a Bar diagram with the help of the data collected. • Analyze the connection between physical landscape and	• compare and contrast various modes of transport. • explain the relationship of transport and communication networks to economic development of a region. • describe the major high ways and major rail networks of different continents.

Chapter No. and Name	Specific Learning Objectives	Suggested Teaching Learning Process	Learning Outcomes
	globe. • To understand the development of communication networks and their impact on the modern world.	development of various modes of transport • Mark and label the terminal stations of Trans-Siberian Railway, Trans Canadian Railway and Trans Australia Railway on an outline world map. • Draw a sketch map of Suez Canal, Panama Canal, St Lawrence Seaways and Rhine waterways, and mark them on an outline map of the world. • On an outline map of the world mark and label the following major airports of each continent: a. **Asia:** Tokyo, Beijing, Mumbai, Jeddah, Aden Africa: Johannesburg & b. Nairobi **Europe:** Moscow, London, Paris, Berlin and Rome c. **North America :** Chicago, New Or leans, Mexico City • **South America**: Bue nos Aires, Santiago Australia: Darwin and Wellington	• discuss the location and economic significance of Trans-Siberian Railway, Trans Canadian Railway, The Union and Pacific Railway and Trans Australian Railway. • describe the location and the economic importance of the major sear outes of the world. • discuss how Suez Canal and Panama Canal serve as major gateways of commerce for both the eastern and the western world. • discuss how the modern communication systems have made the concept of global village a reality.
Ch-8 International Trade	• Familiarize the students with the basic concepts and principles of International trade. • To understand the basis of International trade, Balance of trade and types of International trade. • Gain knowledge about the concept of Dumping. • To outline the historical perspective of globalization and Role of WTO, its functions and its implications on the	• Discuss: How International trade was carried out in the past vis-à-vis present times. • Study the data given on table 9.1 and compare world import and export to calculate balance of trade and analyse its implication. • Read the case Study on dumping and discuss how dumping is becoming a serious concern among trading nations. • Prepare a concept map of the chapter. • Mark and label the head quarter of WTO on an outline world map. Mark and label the following	• define international trade and describe how it impacts various countries. • describe the basis of International Trade. • discuss types of and aspects International trade. • explain the term Dumping, Trade liberalisation and Globalisation. • discuss the impact of WTO on current global trade. • evaluate how international trade can be detrimental to some nations. • analyse how sea ports act as chief gateways of International trade.

Chapter No. and Name	Specific Learning Objectives	Suggested Teaching Learning Process	Learning Outcomes
		a. Major seaports of the world **Europe:** North Cape, London, Hamburg **North America:** Vancouver, San Francisco, New Orleans b. **South America**: Rio De Janeiro, Colon, Valparaiso Africa: Suez and Cape Town c. **Asia:** Yokohama, Shanghai, Hong Kong, Aden, Karachi, Kolkata • **Australia** : Perth, Sydney, Melbourne	

INDIA PEOPLE AND ECONOMY

Chapter No. and Name	Specific Learning Objectives	Suggested Teaching Learning Processes	Learning Outcomes
Ch-1 **Population: Distribution Density, Growth and Composition**	• To correlate population distribution and density with the physiography of India. • To familiarize students with the demographic attributes of India	• Learner may be asked to refer to an Atlas to correlate elief map of India and map of population distribution and density and write their observation and share with their classmates. • Prepare a choropleth map showing the state wise density of population of India.	**At the completion of this unit students will be able to understand:** • differentiate between distribution of population and density of population. Define: Physiological Density, Agricultural Density, Population doubling time, Working Population, Participation • Rate, Main Worker, Marginal Worker, Rural Population, Urban Population, Adolescent Population. • discuss the factors responsible for uneven distribution of population in India. • explain trends of populationgrowthinIndiasince1901. • describe rural-urban population composition, religious composition linguistic composition and sectoral composition of work force in India. • discuss the occupational structure of India's population.
Ch-2 **Human Settlements**	• To understand how the form and size of settlement of any particular region reflects human relationship with the environment.	• The students will prepare a line graph to show the growth of urban population in India since1901. • The students will mark and label the million plus cities of all the states on apolitical map of India Case Study : Amravati https://smartcities.gov.in/sites/defa ult/files/SmartCityGuidelines.pdf https://assccl.ap.gov.in/ASSCCL/vi	• differentiate between rural and urban settlement. • describe the factors that govern the types of rural settlement in India. • compare and contrast clustered, semi clustered, Hamleted and dispersed settlement with examples. • describe the evolution of towns in India since pre historic times.

		ews/V1/Home.aspx	• classify towns on the basis of their functions.
Ch-3 **Land Resources and Agriculture**	• To familiarize students with the land-use categories as maintained in the land revenue records. • To analyse the changes in land-use pattern registered in India due to change in shares of primary, secondary and tertiary sectors in GDP.	• The students will study and document the land use around their school and speak to their elders to find out changes registered in land use. • The students will read and interpret the bar graph (fig 5.1)comparing the changes in land use in India between 1950-51 and 1914-15. • Using the data given in the appendix (vi) the students will Work out the actual increase and rate of increases for all the land use categories between 1950–51and2014–15. • The students will prepare pie graphs to show the land use categories in 1950-51 and 1914-15. • Prepare a pie chart showing the composition of total cultivable land in the country. • The students will calculate cropping intensity using data from table5.1 • The students will represent the geographical conditions required for the growth of different crops in a tabular form and compare them. • On political map of India the students will mark and label three largest producing states of Rice, Wheat, Jowar, Pulses, Oilseeds, Cotton, Jute, Sugar cane, Tea and Coffee.	• name and define the land use categories. • compare the Changes in shares of Land-use Categories in India between 1950 and 2014. • discuss the importance of common property resources for the community. • compare dry land and Wet land farming and evaluate its importance. • compare the geographical conditions required for the growth of the following crops and their distribution / growing areas • Rice, Wheat, Jowar, Pulses, Oil seeds, Cotton, Jute, Sugar cane, Tea, Coffee • evaluate technological developments that have taken place in Indian agriculture since Independence. • discuss the challenges faced by the Indian farmers and suggest measures to over come them.
Ch-4 **Water Resources**	• To familiarise students about the water resources available in India and the factors that determines partial distribution of the available water resources in the country and its utilization.	• List out the major sources of water. • Discuss the inter relationship between physical and human environment and their impact from local to global. • Ralegan Siddhi case study to be discussed to understand the holistic impact of Water shed development in anyplace. • Students can also been courage to see the stories of Haryali, Neeru-Meeru (Water and You) programme (in Andhra Pradesh) and Arvary Pani Sansad (in Alwar,	• describe the available water resources in India. • evaluate the water demand and supply in India. • discuss the reasons for water scarcity in the country. • discuss water resources in India, its geographical distribution, sectoral utilization, and methods of its conservation and management. • recognize various emerging water problems and analyse the causes for deterioration of quality of water. • evaluate the scope to use rain water

		Rajasthan)	harvesting techniques to conserve precious water resources
CH - 5 Mineral And Energy Resources	• To know about distribution of various minerals in the world. • To understand and realize the importance of minerals in human life. • To create an awareness about nature of different minerals and how to sustain them for the future.	• The students should been courage to read newspaper regularly and discuss environmental impact of mining. • The students should create awareness in school through posters and role play about the use of renewable resources and conservation of energy resources • Prepare a table to present these partial pattern of the following minerals under the given headings: (Properties, Total Reserves, Distribution, Mines) • Iron Ore, Manganese, Bauxite, • Copper, Mica, Coal, Petroleum and natural Gas.	a. classify minerals on the basis of chemical and physical properties. b. describe the major mineral belts of India and mark them on about line map of India. c. describe different types of non-conventional mineral resources. d. analyse why the renewable energy resources will be the future source of resources. e. suggest measures to conserve our non-renewable resources. f. on an outline political Map of India mark and label the following: g. **Iron-ore mines :** Mayurbhanj, Bailadila, Ratnagiri, Bellary h. **Manganesemines** : Balaghat, Shimoga i. **Coppermines** : Hazaribagh, Singhbhum, Khetari j. **Bauxite mines**: Katni, Bilaspur and Koraput k. **Coalmines** : Jharia, Bokaro, Raniganj, Neyveli l. **Oil Refineries:** Mathura, Jamnager, Barauni
Ch-6 Planning And Sustainable Development In Indian Context	• To understand the need for centralised planning (sectoral planning and regional planning)to accelerate uniform economic development over space as well the role of NITI Aayog.	• Case Study – Integrated Tribal Development Project in Bharmaur Region. • Case Study- Indira Gandhi Canal (Nahar) Command Area. • Critically evaluates the need for, aims of, and impacts of irrigation on Indira Gandhi Canal (Nahar) Command Area.	• develop an understanding about various types of planning. • justify the need for target area sand target groups planning by the Planning Commission with examples. • explains the aims and approaches of the Hill Area Development Programme, Drought prone area Programme. • critically evaluate the aims and social benefits of ITDP in the Bharmaur tribal region. • evaluate the measures that can be taken to promote sustainable development in Indira Gandhi Canal Command Area.
Ch-7 Transport and Communication	• To acquire knowledge about various means of transport spread in different parts of India.	• Draw a flow chart to show the means of transportation. • Collect information on Metro rail of India and discuss in the classroom. • Prepare a concept map showing different means of transportation,	• develops an understanding about various means of transport being used in different parts of India. • analyze the impact of the physical environment on development of various modes in different regions. • describe different types of highways

	• To compare and correlate various modes of transport to the physical regions of India. • To evaluate the impact of transport and communication networks on the development of our nation.	its advantages and disadvantages. • Collect information on Bharatmala and Setubharatam Pariyojana and share it with your peer group.	found in different parts o four country. • discuss the role of Indian Railways in the growth of India's economy with focus on recent technological advancements. • describe the five National Water ways of our country. • discuss the role of OIL and Gailin development of gas pipe lines in India. • discuss reasons for the state wise variation in road density in India. • elucidate the impact of modern communication networks in our life. • mark and label the following on an outline political map of India: Terminal stations of north south corridor, East west corridor & golden quadrilateral
Ch-8 International Trade	• To familiarize students about the changes that have taken place in India's international trade in terms of volume, composition and direction.	• Study the graph (11.1) showing India's import and export and comment on India's balance of trade. • Make a list of items that are in India's import and export basket. • Make a list of India's major trading partners and identify these countries on a world map. • Name the nearest domestic and international airports from your school. • Study fig 11.5 and Identify four cities from where maximum number of air routes converge.	• give reasons for changing pattern of the composition of India's import and export. • discuss the strategies adopted by India to double its share in the international trade. • evaluate the role of sea ports as gate ways of international trade with examples. • mark and label the major seaports and airports on an outline map of India. • **Major Sea Ports :** Kandla, Mumbai, Marmagao, Kochi, Mangalore, Tuticorin, Chennai, Vishakhapatnam, Paradwip, Haldia
Ch-9 Geographical Perspective On Selected Issues	• To explain the causes and consequences of different types of pollution in India and suggest the measures to control it.	• List the major sources of water pollution, air pollution, noise pollution and land pollution. • Identify the most polluted stretch of river Ganga and river Yamuna on an outline map. • Look into the dustbin in your school and make a list of solid waste generated by students. • Prepare a poster to create awareness about Namami Gange Programme. • Speak to a ragpicker and try to find out what he/she does with the waste. • Read the case study of a migrant	• classify types of pollution based on the medium through which pollutants are transported and diffused. • explain various sources of pollution and summarise the state of water, air, land and noise pollution in India. • analyse the rural-urban migration and its role in pollution. • describe the health and social problems of slum dwellers with reference to Dharavi. • describe the natural and human causes of land degradation and suggest measures to control and degradation in India. Suggest measures to control different types of pollutions and

		labourer (Given in NCERT) and enact his/her life in your classroom	evaluate the effectiveness of the Swachh Bharat Mission.
			• Discuss the problems related to urban waste disposal and suggest measures to convert waste into wealth.

FUNDAMENTALS OF HUMAN GEOGRAPHY

Map Items for identification only on outline political map of the World.

Chapter No. and Name	Map Items
1 –Human Geography	**Nil**
2 –The World Population Density Distribution and Growth	**Nil**
3-Human Development	**Nil**
4-PrimaryActivities	• Areas of subsistence gathering (Fig4.2) • Major areas of nomadicherding of the world(4.4) • Major areas of commercial live stock rearing(4.6) • Major areas of extensive commercial grain faming(4.12) • Major areas of mixed farming of the World(4.14)
7-Transport,CommunicationandTrade	• Terminal Stations of Transcontinental Railways– Trans-Siberian, Trans Canadian, Trans-Australian Railways **Major Sea Ports** • **Europe** : North Cape, London, Hamburg • **North America :** Vancouver, San Francisco, New Orleans • **South America** : Rio De Janeiro, Colon, Valparaiso • **Africa:** Suezand Cape Town • **Asia :** Yokohama, Shanghai, Hong Kong, Aden, Karachi, Kolkata • **Australia** : Perth, Sydney, Melbourne **Major Airports:** • **Asia** : Tokyo, Beijing, Mumbai, Jeddah, Aden • **Africa** : Johannesburg & Nairobi • **Europe:** Moscow, London, Paris, Berlinand Rome • **North America:** Chicago, New Orleans, Mexico City • **South America :** Buenos Aires, Santiago • **Australia:** Darwin and Wellington **In land Waterways** **Suez Canal, Panama Canal, Rhine water ways and St. Lawrence Seaways**
8-InternationalTrade	**Nil**

Map Items for locating and labelling on political outline map of India India -People and Economy

Chapter No. and Name	Map Items
1-Population Distribution Density Growth and Composition	State with highest population density & state with lowest population density (2011)
2-Human Settlement	Nil
3-Land Resources and Agriculture	Leading producing states of the following crops : (a) Rice(b) Wheat (c) Cotton (d) Jute (e) Sugarcane (f) Tea and (g) Coffee
4-Water Resources	**Nil**
5-Mineral And Energy Resources	**Mines:** • **Iron-ore mines** : Mayurbhanj, Bailadila, Ratnagiri, Bellary • **Manganese mines** : Balaghat, Shimoga

	Copper mines : Hazaribagh, Singhbhum, Khetari **Bauxite mines** : Katni, Bilaspurand Koraput **Coalmines:** Jharia, Bokaro, Raniganj, Neyveli **Oil Refineries: Mathura, Jamnager, Barauni**
6-Planning and Sustainable Development in Indian Context	Nil
7-Transport and Communication	Nil
8-International Trade	Mark and label the major sea ports and air ports on a noutline map of India. **Major Sea Ports:** Kandla, Mumbai, Marmagao, Kochi, Mangalore, Tuticorin, Chennai,Vishakhapatnam, Paradwip, Haldia **International Air ports:** Ahmedabad, Mumbai, Bengaluru, Chennai,Kolkata,Guwahati,Delhi,Amritsar,Thiruvananthapuram&Hyderabad.
9-Geographical Perspective on selected issues and problems	Nil

POLITICAL SCIENCE (028)

Prescribed Books:

1. Contemporary World Politics, Class XII, Published by NCERT
2. Politics in India since Independence, Class XII, Published by NCERT
3. Uploaded additional Study Materials

COURSE STRUCTURE

SL NO	NAME OF THE TEST / CHAPTER	HALF YEARLY (80 Marks)	PRE BOARD / BOARD EXAM (80 Marks)
		17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
PART A: CONTEMPORARY WORLD POLITICS			
1	The End of bipolarity	10	06
2	Contemporary Centers of Power		06
3	Contemporary South Asia	14	06
4	International Organisation	16	06
5	Security in the Contemporary world		06
6	Environment and Natural Resources	-----	06
7	Globalisation		04

PART B: POLITICS IN INDIA SINCE INDEPENDENCE

SL NO	NAME OF THE TEST / CHAPTER	HALF YEARLY	PRE BOARD / BOARD EXAM
1	Challenges of Nation-Building	10	06
2	Era of One-Party Dominance		04
3	Politics of Planned Development	12	02
4	India's External Relations	18	06
5	Challenges to and Restoration of the Congress System		04
6	The Crisis of Democratic Order	------	04
7	Regional Aspirations		06
8	Recent Developments in Indian Politics		08
	TOTAL	**80**	**80**

Project Work: 20 Marks , Grand Total = 100 Mark

COURSE CONTENTS

Part A: Contemporary World Politics

The End of Bipolarity
   a. The Soviet System
   b. Gorbachev and the disintegration
   c. Causes and Consequences of disintegration of Soviet Union
   d. Shock Therapy and its Consequences
   e. New entities in world politics
   - Russia
   - Balkan States
   - Central Asian States

   a. India's relations with Russia and other post-communist countries

Contemporary Centers of Power :
Topics to be focused:
   a. European Union
   b. Association of Southeast Asian Nations
   c. Rise of China as an economic power
   d. Japan and South Korea as emerging powers

Contemporary South Asia

Topics to be focused:

     a. Military and Democracy in Pakistan and Bangladesh
     b. Monarchy and Democracy in Nepal
     c. Ethnic Conflict and Democracy in Sri Lanka
     d. India-Pakistan Conflicts
     e. India and its Neighbours
     f. Peace and Cooperation

International Organisation

Topics to be focused:

     a. Meaning and importance of International Organisations
     b. Evolution of the UN
     c. Structure and function of International Organisations
     d. Principal Organs of UN
     e. Reform of the UN after Cold War
     f. Reform of Structures, Processes and Jurisdiction of the UN
     g. India and the UN Reforms
     h. Key Agencies: IMF, World Bank, WTO, ILO, IAEA.
     i. NGO: Amnesty International, Human Rights Watch.
     j. Implications and Future of International Organizations

Security in the Contemporary World

Topics to be focused:

     a. Meaning and Type of Security.
     b. Traditional concept of security
     c. Non-tradition notions of Security.
     d. New Sources of Threats
     e. Cooperative Security
     f. India's Security strategy

Environment and Natural Resources

Topics to be focused:

     a. Environmental Concerns
     b. Global Commons
     c. Common but differentiated Responsibilities
     d. India's Stand on Environment Issues
     e. Environmental Movements
     f. Resource Geopolitics
     g. Rights of Indigenous peoples

Globalisation

Topics to be focused:

     a. Concept of globalisation
     b. Causes and Consequences of globalisation
     c. India and globalization
     d. Resistance to globalization
     e. India and resistance to globalisation

<div align="center">

Part B: Politics in India Since Independence

</div>

Ch 1: Challenges of Nation-Building

Topics to be focused:

a) Challenges for the new Nation.
     • Three Challenges.
b) Partition: Displacement and Rehabilitation.
     • Consequences of Partition.
c) Integration of Princely States.

- The problem
- Government's approach
- Hyderabad
- Manipur

d) Reorganisation of States

Ch 2: Era of One party dominance

Topics to be focussed:

a) Challenge of building democracy.

b) Congress dominance in the first three general elect ions.

- Nature of Congress dominance
- Congress as social and ideological coalition.
- Tolerance and management of Factions

c) Emergence of opposition parties.

Ch 3: Planning and Development

Topics to be focussed:

a) Political contestation.

- Ideas of Development.
- Planning
- Planning Commission

b) The Early Initiatives

- The First Five Year Plan.
- Rapid Industrialisation.

Ch 4: India's External Relations

Topics to be focussed:

a) International Context

b) The Policy of Non-Alignment.

- Nehru's role
- Distance from two camps.
- Afro Asian Unity

c) Peace and conflict with China

- The Chinese Invasion1962
- War and Peace with Pakistan
- Bangladesh War 1971

d) India's Nuclear Policy.

Ch 5: Challenges to and Restoration of the Congress System

Topics to be focused:

a) Challenge of Political Succession

- From Nehru to Shastri
- From Shastri to Indira Gandhi

b) Fourth General Election 1967

- Context of the Election.
- Non Congressism
- Electoral Verdict
- Coalitions
- Defections

c) Split in the Congress

- Indira vs the Syndicate
- Presidential Election 1969

d) The 1971 Election and Restoration of Congress

- The outcome and after
- Restoration?

Ch 6: The Crisis of Democratic Order

Topics to be focused:

a) Background to Emergency.
- Economic Context.
- Gujarat and Bihar Movements
- Conflict with Judiciary

b) Declaration of Emergency
- Crisis and response
- Consequences

c) Lessons of the Emergency.

d) Politics after Emergency.
- Lok Sabha Elections 1977
- Janata Government
- Legacy

Ch 7: Regional Aspirations

Topics to be focused:

a) Region and the Nation
- Indian Approach
- Areas of Tension
- Jammu and Kashmir
- Roots of the Problem
- External and Internal disputes
- Politics since 1948
- Insurgency and After
- 2022 and Beyond

b) Punjab
- Political Context
- Cycle of Violence
- Road to Peace

c) The Northeast
- Demand for autonomy
- Secessionist Movements
- Movements against outsiders
- Assam and National

Ch 8: Indian Politics: Trends and Developments

Topics to be focused

a) Context of 1990s

b) Era of Coalition
- Alliance Politics

c) Political rise if the Backward Classes
- Mandal Implemented
- Political Fallouts

d) Communalism, Secularism and Democracy.
- Ayodhya Dispute
- Demolition and after

e) Emergence of New Consensus

f) Lok Sabha Elections 2004

g) Growing Consensus

QUESTION PAPER DESIGN [2023-2024]

SL NO	COMPETENCIES	TOTAL MARKS	% WEIGHT-AGE
1	**DEMONSTRATIVE KNOWLEDGE + UNDERSTANDING:**[Knowledge based simple recall questions, to know specific facts, terms, concepts, principles or theories; Identify, define or recite information] [Comprehension- to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase information]	29	Upto 37%
2	**KNOWLEDGE\CONCEPTUAL APPLICATION:**[Use abstract information in concrete situation, to apply knowledge to new situations; use given content to interpret a situation, provide an example, or solve a problem]	27	Upto 33%
3	**FORMULATION ANALYSYS, EVALUATION AND CREATIVITY:**[Analysis and Synthesis- Classify, compare, contrast, or differentiate between different pieces of information; Organize and\or integrate unique pieces of information from a variety of sources] [includes map interpretation]	24	Upto 30%
	TOTAL	80	**100%**

- **Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%**
- **Select response type questions (MCQ) = 20%**
- **Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%**

Book	Objective Type / MCQ (1 Mark)	Short Answers Type I (2 Marks)	Short Answers Type II (4 Marks)	Passage / Map / Cartoon based (4 Marks)	Long Answers (6 Marks)	Total Marks
Book 1: Contemporary World Politics	6	3	3	1 (Passage)	2	40
Book 2: Politics in India since Independence	6	3	2	2(Cartoon and Map)	2	40
Project/Practical						20
Total No. of Marks and Questions	1x12=12	2x6=12	4x5=20	4x3=12	6x4=24	80+20=100

Scheme of option:

- ➢ Question paper will be in five parts (A, B, C, D & E). There will be an internal choice in Part C (Short Answer Type II in one or two questions) and Part-E. (Long Answers in all the questions)
- ➢ In order to assess different mental abilities of learners, question paper is likely to include questions based on passages, visuals such as maps, cartoons. No factual question will be asked on the information given in the plus (+) boxes in the textbooks.
- ➢ Map question can be given from any lesson of Book 2(Politics in India since Independence); but weightage of lessons should remain unaltered.
- ➢ Cartoon and passage-based questions can be asked from either textbook, but weightage of lessons should be maintained.

PROJECT WORK: 20 Marks

Rationale

Political Science as a field of study in senior secondary classes enable students to get an exposure to political activities and processes that they are exposed to in everyday life. The study of political science has emerged as a multifaceted discipline, involving a contemporary interdisciplinary approaches and empirical framework, emphasizing more on field work rather than theoretical perceptions. The connect between government and citizen ensures the emergence of an active and reflective citizens and vibrant democracy. CBSE has therefore incorporated project work in Political Science to enable students to extend their interest beyond textbooks and provide them with a platform to gather information, value the decisions made to shape the community and visualize future course of action to be taken to ensure healthy democracy.

Objectives of project work:

- To enable learners to probe deeper, initiate action and reflect on knowledge and skills acquired during the course of class XI and XII
- To analyze and evaluate real world scenarios using social constructivism, a theory based on observation and scientific study
- To become independent and empowered to choose their topic and gather data from a variety of source, investigate varied viewpoints acquired during the course XI-XII and arrive at logical deductions.

- To enquire into, and reflect on, issues independently /in collaboration with others and identify the limitations
- To develop 21st century skills of communication, cooperation, coordination, critical thinking, creativity and collaboration to produce an extended and independent work.

Project overview:

- The Project work will be implemented for 20 Marks.
- Out of 20 marks, 10 marks are to be allotted to viva voce and 10 marks for project work.
- For class XII, the evaluation for 20 marks project work should be done jointly by the internal and external examiners.
- The project can be individual/pair/group of 4-5 each. The Project can be made on any of the topics given in the syllabus of a particular class or any contemporary issues.
- The project work can be culminated in the form of films, albums, songs, storytelling, debate, Role Play, Skit, Presentation, Model, Field Survey, Mock Drills/Mock Event etc.
- The teacher should give enough time for preparation of the Project Work. The topics for Project Work taken up by the student must be discussed by the teacher in classroom.
- Students can use primary sources available in city archives, Primary sources can also include newspaper cuttings, photographs, film footage and recorded written/speeches. Secondary sources may also be used after proper authentication.

Viva-Voce

- At the end of the stipulated term, each learner will present the research work in the Project File to the External and Internal examiner.
- The questions should be asked from the Research Work/ Project File of the learner.
- The Internal Examiner should ensure that the study submitted by the learner is his/her original work.
- In case of any doubt, authenticity should be checked and verified.

The marks will be allocated under the following heads:

SL.NO	COMPONENTS	MARKS ALLOTTED
1	INTRODUCTION/OVERVIEW	2
2	VARIETY OF CONTENTS	3
3	PRESENTATION	3
4	CONCLUSION	1
5	BIBLIOGRAPHY	1
6	VIVA-VOCE	10
	TOTAL	20

Suggested Topics

1.NAM- 1961 to present times.

2. Division of Germany with special focus on the construction and dismantling of the Berlin Wall.

3. CIS-Central Asian Republics

4. Disintegration of USSR with special focus on Gorbachev.

5. Arab Spring

6. 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

PSYCHOLOGY (037)

PRESCRIBED BOOKS :

- PSYCHOLOGY for Class12, published by NCERT
1. The distribution of marks over different dimensions of the question paper shall be as follows:

QUESTION PAPER DESIGN

II. Board Examination : Theory

S. No.	Typology of Questions	Total Mark	% Weightage
1	**Remembering and Understanding**: Exhibiting memory of previously learned material by recalling Facts, terms, basic concepts, and answers; Demonstrating understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas	25	35%
2	**Applying** : Solving problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	31	45%
3	**Formulating, Analysing, Evaluating and Creating** : Examining and breaking information into parts by identifying motives or causes; Making inferences and finding evidence to support generalizations; Presenting and defending opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria; Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions.	14	20%
	Total	70	100%

III. Practical: 30 Marks

NOTE:
- The above template is only a sample. Suitable internal variations may be made for generating similar templates keeping the overall weightage to different form of questions and typology of questions.
- Question wise break up shall be followed as per the sample paper to be released by CBSE 2024-25.
- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%
- Select response type questions (MCQ) = 20%
- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%

SYLLABUS DETAILS

Ch. No.	TYPES OF TEST	HALFYEARLY (70 marks)	PRE-BOARD / BOARD (70 marks)
		17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
1	Variations in Psychological Attributes	18	13
2	Self and Personality	18	13
3	Meeting Life Challenges	9	9

Ch. No.	TYPES OF TEST	HALFYEARLY (70 marks)	PRE-BOARD / BOARD (70 marks)
		17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
4	Psychological Disorders	16	12
5	Therapeutic Approaches	9	9
6	Attitude and Social Cognition	-	8
7	Social Influence and Group Processes	-	6
	Total	**70**	**70**

COURSE STRUCTURE

Unit I : Variations in Psychological Attributes
1. Introduction
2. Individual Differences in Human Functioning
3. Assessment of Psychological Attributes
4. Intelligence
5. Psychometric Theories of Intelligence, Information Processing Theories, Theory of Multiple Intelligences, Triarchic Theory of Intelligence, Planning, Attention-arousal and Simultaneous successive Model of Intelligence
6. Individual Differences in Intelligence
7. Culture and Intelligence
8. Emotional Intelligence
9. Special Abilities : Aptitude : Nature and Measurement
10. Creativity

Unit II : Self and Personality
1. Introduction
2. Self and Personality
3. Concept of Self
4. Cognitive and Behavioural Aspects of Self
5. Culture and Self
6. Concept of Personality
7. Major Approaches to the Study of Personality
   - Type Approaches
   - Trait Approaches
   - Psychodynamic Approach and Post Freudian Approaches
   - Behavioural Approach
   - Cultural Approach
   - Humanistic Approach
8. Assessment of personality
   - Self-report Measures
   - Projective Techniques
   - Behavioural Analysis

Unit III : Meeting Life Challenges
1. Introduction
2. Nature, Types and Sources of Stress
3. Effects of Stress on Psychological Functioning and Health

- Stress and Health
- General Adaptation Syndrome
- Stress and Immune System
- Lifestyle

4. Coping with Stress
   - Stress Management Techniques

5. Promoting Positive Health and Well-being
   - Life Skills
   - Positive health

Unit IV : Psychological Disorders

1. Introduction
2. Concepts of Abnormality and Psychological Disorders
   - Historical Background
3. Classification of Psychological Disorders
4. Factors Underlying Abnormal Behaviour
5. Major Psychological Disorders
   - Anxiety Disorders
   - Obsessive-Compulsive and Related Disorders
   - Trauma-and Stressor- Related Disorders
   - Somatic Symptom and Related Disorders
   - Dissociative Disorders
   - Depressive Disorder
   - Bipolar and Related Disorders
   - Schizophrenia Spectrum and Other Psychotic Disorders
   - Neuro developmental Disorders
   - Disruptive, Impulse-Control and Conduct Disorders
   - Feeding and Eating Disorders
   - Substance Related and Addictive Disorders

Unit V : Therapeutic Approaches

1. Nature and Process of psychotherapy
   - Therapeutic relationship
2. Types of Therapies
   - Behaviour Therapy
   - Cognitive Therapy
   - Humanistic-existential Therapy
   - Alternative Therapies
   - Factors contributing to healing in Psychotherapy
   - Ethics in Psychotherapy
3. Rehabilitation of the Mentally ill

Unit VI : Attitude and Social Cognition

1. Introduction
2. Explaining Social Behaviour
3. Nature and Components of Attitudes
4. Attitude Formation and Change
   - Attitude Formation

- Attitude Change
- Attitude-Behaviour Relationship
5. Prejudice and Discrimination
6. Strategies for Handling Prejudice

Unit VII : Social Influence and Group Processes

1. Introduction
2. Nature and Formation of Groups
3. Type of Groups
4. Influence of Group on Individual Behaviour
   - Social Loafing
   - Group Polarisation

PRACTICAL

Practical :   **30 Mark**

A. Development of case profile: Using appropriate methods like interview, observation & psychological tests.
B. Test Administration : Students are required to administer and interpret **five psychological tests** related to various psychological attributes like intelligence, aptitude, attitude, personality, etc.
C. In the Practical examination, the student will be required to administer and interpret **two psychological tests**.

Distribution of Marks :

- Practical File and Case Profile   10 Marks
- Viva Voce (Case profile and two practical)   05 Marks
- Two practical   15 Marks
  (5 marks for conduct of practical and 10 marks for reporting)

Practical Topics:

a. Measure the intelligence of the subject using Howard Gardener's Multiple Intelligence Test/ Raven Progressive Matrix/Seguin Form Board.

b. Assess the personality of the subject using Eysenck's Personality Questionnaire / Are you type A questionnaire.

c. Find the anxiety level of the subject using Sinha's comprehensive anxiety test.

d. Study the attitude of the subject with the help of Sodhi's attitudes scale.

e. Measure the aptitude of the subject using DAT / DBDA / Tamanna.

APPLIED MATHEMATICS (241)

Number of Paper: 1

Total number of Periods: 240 (35 Minutes Each) Time:3 Hours

Max Marks: 80

No.	Units	No. of Periods	Marks
I	Numbers, Quantification and Numerical Applications	30	11
II	Algebra	20	10
III	Calculus	50	15
IV	Probability Distributions	35	10
V	Inferential Statistics	10	05
VI	Index Numbers and Time-based data	30	06
VII	Financial Mathematics	50	15
VIII	Linear Programming	15	08
	Total	240	80
	Internal Assessment		20

SI. No.	Contents	Learning Outcomes: Students will be able to	Notes / Explanation
UNIT-1 NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS			
1.1	Modulo Arithmetic	• Define modulus of an integer Apply arithmetic operations using modular arithmetic rules	• Definition and meaning • Introduction to modulo operator Modular addition and subtraction
1.2	Congruence Modulo	• Define congruence modulo Apply the definition in various problems	• Definition and meaning • Solution using congruence modulo Equivalence class
1.4	Alligation and Mixture	• Understand the rule of alligation to produce a mixture at a given price • Determine the mean price of a mixture Apply rule of alligation	• Meaning and Application of rule of alligation Mean price of a mixture
1.5	Numerical Problems	Solve real life problems mathematically	
	Boats and Streams (upstream and downstream)	• Distinguish between upstream and downstream Express the problem in the form of an equation	Problems based on speed of stream and the speed of boat in still water
	Pipes and Cisterns	• Determine the time taken by two or more pipes to fill or empty the tank	• Calculation of the portion of the tank filled or drained by the pipe(s) in unit time
	Races and Games	• Compare the	• Calculation of the time

		performance of two players w.r.t. time, distance	taken/ distance covered / speed of each player
1.6	Numerical Inequalities	● Describe the basic concepts of numerical inequalities Understand and write numerical inequalities	● Comparison between two statements/situations which can be compared numerically ● Application of the techniques of numerical solution of algebraic inequations
UNIT-2 ALGEBRA			
2.1	Matrices and types of matrices	● Define matrix ● Identify different kinds of matrices Find the size / order of matrices	● The entries, rows and columns of matrices Present a set of data in a matrix form
2.2	Equality of matrices, Transpose of a matrix, Symmetric and Skew symmetric matrix	● Determine equality of two matrices ● Write transpose of given matrix Define symmetric and skew symmetric matrix	● Examples of transpose of matrix ● A square matrix as a sum of symmetric and skew symmetric matrix Observe that diagonal elements of skew symmetric matrices are always zero
2.3	Algebra of Matrices	● Perform operations like addition & subtraction on matrices of same order ● Perform multiplication of two matrices of appropriate order Perform multiplication of a scalar with matrix	● Addition and Subtraction of matrices ● Multiplication of matrices (It can be shown to the students that Matrix multiplication is similar to multiplication of two polynomials) Multiplication of a matrix with a real number
2.4	Determinants	● Find determinant of a square matrix Use elementary properties of determinants	● Singular matrix, Non-singular matrix ● $|AB|=|A||B|$ Simple problems to find determinant value

2.5	Inverse of a matrix	● Define the inverse of a square matrix
		 Apply properties of inverse of matrices
			● Inverse of a matrix using:
			  a) cofactors
			  If A and B are invertible square matrices of same size,
			  i) $(AB)^{-1}=B^{-1}A^{-1}$
			  ii) $(A^{-1})^{-1} =A$
			 $(A^{T})^{-1} = (A^{-1})^{T}$

2.6	Solving system of simultaneous equations using matrix method, Cramer's rule and	● Solve the system of simultaneous equations using i) Cramer's Rule ii) Inverse of coefficient matrix Formulate real life problems into a system of simultaneous linear equations and solve it using these methods	● Solution of system of simultaneous equations upto three variables only (non- homogeneous equations)
UNIT- 3 CALCULUS			
Differentiation and its Applications			

3.1	Higher Order Derivatives	• Determine second and higher order derivatives Understand differentiation of parametric functions and implicit functions	• Simple problems based on higher order derivatives • Differentiation of parametric functions and implicit functions (upto 2nd order)
3.2	Application of Derivatives	• Determine the rate of change of various quantities • Understand the gradient of tangent and normal to a curve at a given point Write the equation of tangents and normal to a curve at a given point	• To find the rate of change of quantities such as area and volume with respect to time or its dimension • Gradient / Slope of tangent and normal to the curve The equation of the tangent and normal to the curve (simple problems only)
3.3	Marginal Cost and Marginal Revenue using derivatives	• Define marginal cost and marginal revenue Find marginal cost and marginal revenue	Examples related to marginal cost, marginal revenue, etc.
3.4	Increasing /Decreasing Functions	• Determine whether a function is increasing or decreasing • Determine the conditions for a function to be increasing or decreasing	Simple problems related to increasing and decreasing behaviour of a function in the given interval
3.5	Maxima and Minima	• Determine critical points of the function • Find the point(s) of local maxima and local minima and corresponding local maximum and local minimum values • Find the absolute maximum and absolute minimum value of a function Solve applied problems	• A point x= c is called the critical point of f if f is defined at c and $f'(c) =$ 0 or f is not differentiable at c • To find local maxima and local minima by: i) First Derivative Test ii) Second Derivative Test Contextualized real life problems
		Integration and its Applications	
3.6	Integration	Understand and determine indefinite integrals of simple functions as anti-derivative	• Integration as a reverse process of differentiation Vocabulary and Notations related to Integration
3.7	Indefinite Integrals as family of curves	• Evaluate indefinite integrals of simple algebraic functions by method of: i) substitution ii) partial fraction by parts	Simple integrals based on each method (non- trigonometric function)
3.8	Definite Integrals as area under the	● Define definite integral as area under the curve	Evaluation of definite integrals using properties

	curve	● Understand fundamental theorem of Integral calculus and apply it to evaluate the definite integral Apply properties of definite integrals to solve the problems	
3.9	Application of Integration	● Identify the region representing C.S. and P.S. graphically Apply the definite integral to find consumer surplus-producer surplus	Problems based on finding ● Total cost when Marginal Cost is given ● Total Revenue when Marginal Revenue is given Equilibrium price and equilibrium quantity and hence consumer and producer surplus
Differential Equations and Modeling			
3.10	Differential Equations	● Recognize a differential equation Find the order and degree of a differential equation	Definition, order, degree and examples
3.11	Formulating and Solving Differential Equations	● Formulate differential equation ● Verify the solution of differential equation Solve simple differential equation	● Formation of differential equation by eliminating arbitrary constants ● Solution of simple differential equations (direct integration only)
3.12	Application of Differential Equations	● Define Growth and Decay Model ● Apply the differential equations to solve Growth and Decay Models	Growth and Decay Model in Biological sciences, Economics and business, etc.
UNIT- 4 PROBABILITY DISTRIBUTIONS			
4.1	Probability Distribution	● Understand the concept of Random Variables and its Probability Distributions Find probability distribution of discrete random variable	Definition and example of discrete and continuous random variable and their distribution
4.2	Mathematical Expectation	Apply arithmetic mean of frequency distribution to find the expected value of a random variable	● The expected value of discrete random variable as summation of product of discrete random variable by the probability of its occurrence.
4.3	Variance	Calculate the Variance and S.D. of a random variable	Questions based on variance and standard deviation
4.4	Binomial Distribution	● Identify the Bernoulli Trials and apply Binomial Distribution ● Evaluate Mean, Variance and S.D of a binomial distribution	● Characteristics of the binomial distribution ● Binomial formula: $P(r) = {}^nC_r \, p^r q^{n-r}$ Where n = number of trials P = probability of

			success
			q = probability of failure
			Mean =*np* Variance = *npq*
			Standard Deviation = $\sqrt{npq}$ ___
4.5	Poison Distribution	● Understand the Conditions of Poisson Distribution Evaluate the Mean and Variance of Poisson distribution	• Characteristics of Poisson Probability distribution Poisson formula: P(x) = $\frac{\lambda^x \cdot e^{-\lambda}}{x!}$ Mean = Variance = λ
4.6	Normal Distribution	● Understand normal distribution is a Continuous distribution ● Evaluate value of Standard normal variate Area relationship between Mean and Standard Deviation	• Characteristics of a normal probability distribution • Total area under the curve = total probability = 1 • Standard Normal Variate: Z = $\frac{x - \mu}{\sigma}$ where x = value of the random variable μ = mean σ = S.D.
UNIT - 5 INFERENTIAL STATISTICS			
5.1	Population and Sample	• Define Population and Sample • Differentiate between population and sample • Define a representative sample from a population • Differentiate between a representative and non-representative sample • Draw a representative sample using simple random sampling Draw a representative sample using and systematic random sampling	• Population data from census, economic surveys and other contexts from practical life • Examples of drawing more than one sample set from the same population • Examples of representative and non-representative sample • Unbiased and biased sampling • Problems based on random sampling using simple random sampling and systematic random sampling (sample size less than 100)
5.2	Parameter and Statistics and Statistical Interferences	• Define Parameter with reference to Population • Define Statistics with reference to Sample • Explain the relation between Parameter and Statistic • Explain the limitation of Statistic to generalize the estimation for population • Interpret the concept of Statistical	• Conceptual understanding of Parameter and Statistics • Examples of Parameter and Statistic limited to Mean and Standard deviation only • Examples to highlight limitations of generalizing results from sample to population • Only conceptual understanding of Statistical Significance/Statistical

		Significance and Statistical Inferences • State Central Limit Theorem Explain the relation between Population-Sampling Distribution-Sample	Inferences Only conceptual understanding of Sampling Distribution through simulation and graphs
5.3	t-Test (one sample t-test and two independent groups t-test)	• Define a hypothesis • Differentiate between Null and Alternate hypothesis • Define and calculate degree of freedom Test Null hypothesis and make inferences using t-test statistic for one group / two independent groups	• Examples and non-examples of Null and Alternate hypothesis (only non- directional alternate hypothesis) • Framing of Null and Alternate hypothesis • Testing a Null Hypothesis to make Statistical Inferences for small sample size • *(for small sample size: t- test for one group and two independent groups* Use of t-table
UNIT – 6 INDEX NUMBERS AND TIME BASED DATA			
6.4	Time Series	Identify time series as chronological data	Meaning and Definition
6.5	Components of Time Series	Distinguish between different components of time series	• Secular trend • Seasonal variation • Cyclical variation Irregular variation
6.6	Time Series analysis for univariate data	• Solve practical problems based on statistical data and Interpret the result	Fitting a straight line trend and estimating the value
6.7	Secular Trend	Understand the long term tendency	• The tendency of the variable to increase or decrease over a long period of time
6.8	Methods of Measuring trend	• Demonstrate the techniques of finding trend by different methods	• Moving Average method Method of Least Squares
UNIT - 7 FINANCIAL MATHEMATICS			
7.1	Perpetuity, Sinking Funds	• Explain the concept of perpetuity and sinking fund • Calculate perpetuity Differentiate between sinking fund and saving account	• Meaning of Perpetuity and Sinking Fund • Real life examples of sinking fund • Advantages of Sinking Fund Sinking Fund vs. Savings account

7.3	Calculation of EMI	• Explain the concept of EMI
		Calculate EMI using various methods
			• Methods to calculate EMI:
			  i) Flat-Rate Method
			  ii) Reducing-Balance Method
			• Real life examples to calculate EMI of various types of loans, purchase of assets, etc.

7.4	Calculation of Returns, Nominal Rate of Return	• Explain the concept of rate of return and nominal rate of return Calculate rate of return and	Formula for calculation of Rate of Return, Nominal Rate of Return

		nominal rate of return	
7.5	Compound Annual Growth Rate	• Understand the concept of Compound Annual Growth Rate • Differentiate between Compound Annual Growth Rate and Annual Growth Rate Calculate Compound Annual Growth Rate	• Meaning and use of Compound Annual Growth Rate Formula for Compound Annual Growth Rate
7.7	Linear method of Depreciation	• Define the concept of linear method of Depreciation • Interpret cost, residual value and useful life of an asset from the given information Calculate depreciation	• Meaning and formula for Linear Method of Depreciation Advantages and disadvantages of Linear Method
UNIT - 8 LINEAR PROGRAMMING			
8.1	Introduction and related terminology	Familiarize with terms related to Linear Programming Problem	• Need for framing linear programming problem • Definition of Decision Variable, Constraints, Objective function, Optimization and Non Negative conditions
8.2	Mathematical formulation of Linear Programming Problem	Formulate Linear Programming Problem	• Set the problem in terms of decision variables, identify the objective function, identify the set of problem constraints, express the problem in terms of inequations
8.3	Different types of Linear Programming Problems	Identify and formulate different types of LPP	• Formulate various types of LPP's like Manufacturing Problem, Diet Problem, Transportation Problem, etc.
8.4	Graphical method of solution for problems in two variables	Draw the Graph for a system of linear inequalities involving two variables and to find its solution graphically	• Corner Point Method for the Optimal solution of LPP Iso-cost/ Iso-profit Method
8.5	Feasible and Infeasible Regions	• Identify feasible, infeasible, bounded and unbounded regions	Definition and Examples to explain the terms
8.6	Feasible and infeasible solutions, optimal feasible solution	• Understand feasible and infeasible solutions Find optimal feasible solution	• Problems based on optimization Examples of finding the solutions by graphical method

Practical: Use of spreadsheet

Graphs of an exponential function, demand and supply functions on Excel and study the nature of function at various points, maxima/minima, Matrix operations using Excel

Suggested practical using the spreadsheet

i) Plot the graphs of functions on excel and study the graph to find out the point of maxima/minima
ii) Probability and dice roll simulation
iii) Matrix multiplication and the inverse of a matrix
iv) Stock Market data sheet on excel
v) Collect the data on weather, price, inflation, and pollution analyze the data and make meaningful inferences
vi) Collect data from newspapers on traffic, sports activities and market trends and use excel to study future trends

List of Suggested projects (Class XI /XII)

i)   Use of prime numbers in coding and decoding of messages
ii)   Prime numbers and divisibility rules
iii)   Logarithms for financial calculations such as interest, present value, future value, profit/loss etc. with large values)
iv)   The cardinality of a set and orders of infinity
v)   Comparing sets of Natural numbers, rational numbers, real numbers and others
vi)   Use of Venn diagram in solving practical problems
vii)   ibonacci sequence: Its' history and presence in nature
viii)   Testing the validity of mathematical statements and framing truth tables
ix)   Investigating Graphs of functions for their properties
x)   Visit the census site of India
http://www.censusindia.gov.in/Census_Data_2001/Census_Data_Online/Language/Statement3.htm Depict the information given there in a pictorial form.
xi)   Prepare a questionnaire to collect information about money spent by your friends in a month on activities like travelling, movies, recharging of the mobiles, etc. and draw interesting conclusions
xii)   Check out the local newspaper and cut out examples of information depicted by graphs. Draw your own conclusions from the graph and compare it with the analysis given in the report
xiii)   Analysis of population migration data – positive and negative influence on urbanization
xiv)   Each day newspaper tells us about the maximum temperature, minimum temperature, and humidity. Collect the data for a period of 30 days and represent it graphically. Compare it with the data available for the same time period for the previous year
xv)   Analysis of career graph of a cricketer (batting average for a batsman and bowling average for a bowler). Conclude the best year of his career. It may be extended for other players also – tennis, badminton, athlete
xvi)   Vehicle registration data – correlating with pollution and the number of accidents
xvii)   Visit a village near Delhi and collect data of various crops over the past few years from the farmers. Also, collect data about temperature variation and rain over the period for a particular crop. Try to find the effect of temperature and rain variations on various crops
xviii)   Choose any week of your ongoing semester. Collect data for the past 10 – 15 years for the amount

of rainfall received in Delhi during that week. Predict the amount of rainfall for the current year

xix) Weather prediction (prediction of monsoon from past data)

xx) Visit Kirana shops near your home and collect the data regarding the sales of certain commodities over a month. Try to figure out the stock of a particular commodity which should be in the store in order to maximize the profit

xxi) Stock price movement

xxii) Risk assessments by insurance firms from data

xxiii) Predicting stock market crash

xxiv) Predicting the outcome of an election – exit polls

xxv) Predicting mortality of infants

Assessment Plan

1. Overall Assessment of the course is out of 100 marks.
2. The assessment plan consists of an External Exam and Internal Assessment.
3. External Exam will be of 03 hours duration Pen/ Paper Test consisting of 80 marks.
4. The weightage of the Internal Assessment is 20 marks. Internal Assessment can be a combination of activities spread throughout the semester/ academic year. Internal Assessment activities include projects and excel based practical. Teachers can choose activities from the suggested list of practical or they can plan activities of a similar nature. For data-based practical, teachers are encouraged to use data from local sources to make it more relevant for students.
5. Weightage for each area of internal assessment may be as under:

Sl. No.	Area and Weightage	Assessment Area	Marks allocated
1	Project work (10 marks)	Project work and record	5
		Year-end Presentation/ Viva of the Project	5
2	Practical work (10 marks)	Performance of practical and record	5
		Year-end test of any one practical	5
		Total	20

SOCIOLOGY (039)

BOOKS PRESCRIBED: 1. INDIAN SOCIETY (NCERT)

2. **SOCIAL CHANGE & DEVELOPMENT IN INDIA (NCERT)**

	MONTH	CHAPTERS/ TOPICS TO BE TAUGHT	UNIT WISE WEIGHTAGE	
			HALF YEARLY (80 MARKS)	PRE BOARD (80 MARKS)
			17 September – 27 September 2024	PRE BOARD: 3rd January – 15th January 2025 BOARD EXAM: As per CBSE Guidelines
	APRIL	**Part-A:**The Demographic Structure of Indian Society **Part-B:** Structural Change	15	12
	MAY/JUNE	**Part-A**: Social Institutions: Continuity and Change **Part-B**: Cultural Change	23	10
	JULY	**Part-A**: Introducing Indian Society **Part B:** .Change and Development in Rural Society	23	20
3.	AUGUST	**Part-A-** Patterns of Social Inequality and Exclusion **Part-B:**Social Movements	23	22
	SEPT/OCTOBER	**REVISION FOR HALF YEARLY EXAMS**		
CETs	NOVEMBER	**Part-A:** The Challenges of Cultural Diversity **Part-B**: Change and Development in Industrial Society		16
	DECEMBER	**REVISION FOR 1ST PRE-BOARD**		
	JANUARY	**REVISION FOR 2ND PRE-BOARD**		

QUESTION PAPER DESIGN FOR (HALF YEARLY/ANNUAL)

Theory: 80 Marks+ project: 20 Marks

Sl. No.	Very short answer/ MCQ 1 Marks	Short Answer (I) 2marks	Short Answer (II) 4 Marks	Long Answer 6 Marks	Marks
1	4	3	2	1	24
2	4	3	2		16
3	4	1	2	1	22
4	4	2	1	1	18
	16 X 1 =16	9 X 2 =18	7X4=28	3X6=18	THEORY 80+ 20 PROJECT = 100 35 Questions

NOTE- **There will be internal choices in questions of 1 mark, 2 marks, 4 marks and 6 marks in both sections (A & B). In all, total 8 internal choices.<u>MARKING SCHEME FOR PROJECT WORKS</u>**

- **Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%**
- **Select response type questions (MCQ) = 20%**
- **Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%**

SL. NO.	HEADING	MARKS ALLOTED
1	RELEVANCE OF THE TOPICS	3
2	KNOWLEDGE CONTENT/ RESEARCH WORKS	6
3	PRESENTATION TECHNIQUE	3
4	VIVA	8
	TOTAL	20

MASS MEDIA STUDIES

BOOK PRESCRIBED: Mass Media Studies [CBSE]

	MONTH	CHAPTERS/LESSONS TO BE TAUGHT	DISTRIBUTION OF MARKS FOR HALF YEARLY, PRE- BOARD AND BOARD XAMINATIONS
			HALF YERALY: 17 September – 27 September 2024 **PRE BOARD: 3rd January – 15th January 2025** **BOARD EXAM: As per CBSE Guidelines**
CETs	APRIL to JULY	**Part-A Skills** Unit-1: Communication Skills Unit-2:Self-management Skills **Part-B Skills** Unit-1: Selling/Marketing/ Exhibiting A Product through Advertising Unit 2: Introduction to the Production Process	Theory 60 marks Practical 40 marks **Total 100 marks** **Part C Practical Work** Practical Examination 15 marks Viva Voce 05 marks **Total 20 marks** **Part D Project Work/Field Visit/ Portfolio** Practical File/Student Portfolio 15 marks Viva Voce 05 marks **Total 20 marks**
	AUG	**Part-A Skills** Unit 3: Information and Communication Technology Skills	
	SEPT.	**Part-A Skills** Unit 4: Entrepreneurial Skills – IV **Part-B Skills** Unit 3: New Media **Revision** **Half Yearly Examination**	
	OCT.	**Part-A Skills** Unit 5: Green Skills	
CETs	NOV.	**Part-B Skills** Unit 4: Creative Contributions of the Key People	
	DEC.	**Revision** **Pre-Board-I**	
	JAN.	**Revision** **Pre-Board-II**	

N.B: Blue print of question paper will be as per CBSE guidelines.

- **Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%**

- **Select response type questions (MCQ) = 20%**

- **Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%**

BANKING (811)

BOOKS PRESCRIBED: Banking (NCERT & CBSE Study Materials)

	MONTH	CHAPTER/TOPICS TO BE TAUGHT	CHAPTERWISE WEIGHTAGE	
			HALF YEARLY EXAM	PRE BOARD / BOARD EXAM
			17 September – 27 September 2024	**PRE BOARD: 3rd January – 15th January 2025** **BOARD EXAM: As per CBSE Guidelines**
CETs	**APRIL**	**PART-A :Employability Skills**	**10**	**10**
		Unit1.Communication Skills		
	MAY	Unit2.Self-management Skills		
	JUNE	Unit3. Information and Communication Technology Skills		
	JULY	Unit 4.Entrepreneurial Skills		
	AUGUST	**PART-B :Vocational Skills**		
		Unit1.Ancillary Services of Banks	**15**	**10**
		Unit2. Innovation in Banking Tech.	**10**	**07**
CETs	**SEPTEMBER**	Unit3. Organization of a Bank Branch Unit4.Basics of Business Math.	**15** **10**	**10** **10**
		PROJECT WORK	**40**	
		REVISION AND HALF YEARLY EXAMINATION	**Total: 100**	
	OCTOBER	**PART-A :Employability Skills** Unit5. Green Skills		
	NOVEMBER	**PART-B :Vocational Skills** Unit5.RBI Regulations on Banks Unit6.Proforma of Final Accounts **Project Work**		**08** **05** **40**
	DECEMBER	**REVISION & PRE-BOARD-I EXAMINATION**		
	JANUARY	**REVISION &PRE-BOARD – II EXAMINATION**		
	FEBRUARY	**REVISION**		
			TOTAL:	**100**

QUESTION PATTERN (HALF-YEARLY/ANNUAL)

TYPE OF QUESTION (S)	MARK(S) PER QUESTION	TOTAL NO. O QUESTIONS	TOTAL MARKS
VSA	1	30	30
SA-I	2	6	12
SA-II	3	2	06
LA-I	4	3	12
	Total:	**41**	**60**

NB : PROJECT WORK TOPIC – – **40 Marks**

TOTAL- 100 Marks

N.B: Blue print of question paper will be as per CBSE guidelines.

- Competency Focused Questions in the form of MCQs/ Case Based Questions, Source-based Integrated Questions or any other type = 50%

- Select response type questions (MCQ) = 20%

- Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 30%