ACCOUNTANCY (Subject Code 055)
Class XI-XII (2025-26)

Rationale

The course in accountancy is introduced at plus two stage of senior second of school education, as the formal commerce education is provided after ten years of schooling. With the fast changing economic scenario, accounting as a source of financial information has carved out a place for itself at the senior secondary stage. Its syllabus content provide students a firm foundation in basic accounting concepts and methodology and also acquaint them with the changes taking place in the preparation and presentation of financial statements in accordance to the applicable accounting standards and the Companies Act 2013.

The course in accounting put emphasis on developing basic understanding about accounting as an information system. The emphasis in Class XI is placed on basic concepts and process of accounting leading to the preparation of accounts for a sole proprietorship firm. The students are also familiarized with basic calculations of Goods and Services Tax (GST) in recording the business transactions. The accounting treatment of GST is confined to the syllabus of class XI.

The increased role of ICT in all walks of life cannot be overemphasized and is becoming an integral part of business operations. The learners of accounting are introduced to Computerized Accounting System at class XI and XII. Computerized Accounting System is a compulsory component which is to be studied by all students of commerce in class XI; whereas in class XII it is offered as an optional subject to Company Accounts and Analysis of Financial Statements. This course is developed to impart skills for designing need based accounting database for maintaining book of accounts.

The complete course of Accountancy at the senior secondary stage introduces the learners to the world of business and emphasize on strengthening the fundamentals of the subject.

Objectives:

1. To familiarize students with new and emerging areas in the preparation and presentation of financial statements.
2. To acquaint students with basic accounting concepts and accounting standards.
3. To develop the skills of designing need based accounting database.
4. To appreciate the role of ICT in business operations.
5. To develop an understanding about recording of business transactions and preparation of financial statements.
6. To enable students with accounting for Not-for-Profit organizations, accounting for Partnership Firms and company accounts.

Accountancy (Subject Code 055)

Class-XI (2025-26)

Theory: 80 Marks **3 Hours**

Project: 20 Marks

Units		**Marks**
Part A: Financial Accounting-1		
	Unit-1: Theoretical Framework	**12**
	Unit-2: Accounting Process	**44**
Part B: Financial Accounting-II		
	Unit-3: Financial Statements of Sole Proprietorship	**24**
Part C: Project Work		**20**

PART A: FINANCIAL ACCOUNTING - I

Unit-1: Theoretical Frame Work

Units/Topics	**Learning Outcomes**
Introduction to Accounting • Accounting- concept, meaning, as a source of information, objectives, advantages and limitations, types of accounting information; users of accounting information and their needs. Qualitative Characteristics of Accounting Information. Role of Accounting in Business. • Basic Accounting Terms- Entity, Business Transaction, Capital, Drawings. Liabilities (Non Current and Current). Assets (Non Current, Current); Expenditure (Capital and Revenue), Expense, Revenue, Income, Profit, Gain, Loss, Purchase, Sales, Goods, Stock, Debtor, Creditor, Voucher, Discount (Trade discount and Cash Discount) **Theory Base of Accounting** • Fundamental accounting assumptions: GAAP: Concept • Basic Accounting Concept : Business Entity, Money Measurement, Going Concern,	**After going through this Unit, the students will be able to:** • describe the meaning, significance, objectives, advantages and limitations of accounting in the modem economic environment with varied types of business and non-business economic entities. • identify / recognise the individual(s) and entities that use accounting information for serving their needs of decision making. • explain the various terms used in accounting and differentiate between different related terms like current and non-current, capital and revenue. • give examples of terms like business transaction, liabilities, assets, expenditure and purchases. • explain that sales/purchases include both cash and credit sales/purchases relating to the accounting year. • differentiate among income, profits and gains.

Accounting Period, Cost Concept, Dual Aspect, Revenue Recognition, Matching, Full Disclosure, Consistency, Conservatism, • Materiality and Objectivity • System of Accounting. Basis of Accounting: cash basis and accrual basis • Accounting Standards: Applicability of Accounting Standards (AS) and Indian Accounting Standards (IndAS) • Goods and Services Tax (GST): Characteristics and Advantages.	• state the meaning of fundamental accounting assumptions and their relevance in accounting. • describe the meaning of accounting assumptions and the situation in which an assumption is applied during the accounting process. • explain the meaning, applicability, objectives, advantages and limitations of accounting standards. • appreciate that various accounting standards developed nationally and globally are in practice for bringing parity in the accounting treatment of different items. • acknowledge the fact that recording of accounting transactions follows double entry system. • explain the bases of recording accounting transaction and to appreciate that accrual basis is a better basis for depicting the correct financial position of an enterprise. • Explain the meaning, advantages and characteristic of GST.

Unit-2: Accounting Process

Units/Topics	**Learning Outcomes**
Recording of Business Transactions • Voucher and Transactions: Source documents and Vouchers, Preparation of Vouchers, Accounting Equation Approach: Meaning and Analysis, Rules of Debit and Credit. • Recording of Transactions: Books of Original Entry- Journal • Special Purpose books: • Cash Book: Simple, cash book with bank column and petty cashbook • Purchases book	**After going through this Unit, the students will be able to:** • explain the concept of accounting equation and appreciate that every transaction affects either both the sides of the equation or a positive effect on one item and a negative effect on another item on the same side of accounting equation. • explain the effect of a transaction (increase or decrease) on the assets, liabilities, capital, revenue and expenses. • appreciate that on the basis of source

• Sales book • Purchases return book • Sales return book • Journal proper ***Note: Including trade discount, freight and cartage expenses for simple GST calculation.*** • Ledger: Format, Posting from journal and subsidiary books, Balancing of accounts **Bank Reconciliation Statement:** • Need and preparation, Bank Reconciliation Statement **Depreciation, Provisions and Reserves** • Depreciation: Meaning, Features, Need, Causes, factors • Other similar terms: Depletion and Amortisation • Methods of Depreciation: i. Straight Line Method (SLM) ii. Written Down Value Method (WDV) ***Note: Excluding change of method*** • Difference between SLM and WDV; Advantages of SLM and WDV • Method of recoding depreciation i. Charging to asset account ii. Creating provision for depreciation/accumulated depreciation account • Treatment of disposal of asset • Provisions, Reserves, Difference Between Provisions and Reserves. • Types of Reserves: i. Revenue reserve ii. Capital reserve iii. General reserve iv. Specific reserve v. Secret Reserve • Difference between capital and revenue reserve **Trial balance and Rectification of Errors**	documents, accounting vouchers are prepared for recording transaction in the books of accounts. • develop the understanding of recording of transactions in journal and the skill of calculating GST. • explain the purpose of maintaining a Cash Book and develop the skill of preparing the format of different types of cash books and the method of recording cash transactions in Cash book. • describe the method of recording transactions other than cash transactions as per their nature in different subsidiary books . • appreciate that at times bank balance as indicated by cash book is different from the bank balance as shown by the pass book / bank statement and to reconcile both the balances, bank reconciliation statement is prepared. • develop understanding of preparing bank reconciliation statement. • appreciate that for ascertaining the position of individual accounts, transactions are posted from subsidiary books and journal proper into the concerned accounts in the ledger and develop the skill of ledger posting. • explain the necessity of providing depreciation and develop the skill of using different methods for computing depreciation. • understand the accounting treatment of providing depreciation directly to the concerned asset account or by creating provision for depreciation account. • appreciate the method of asset disposal through the concerned asset account or by preparing asset disposal account. • appreciate the need for creating reserves and also making provisions for events which may

• Trial balance: objectives, meaning and preparation **(Scope:** *Trial balance with balance method only*) • Errors: classification-errors of omission, commission, principles, and compensating; their effect on Trial Balance. • Detection and rectification of errors; (i) Errors which do not affect trial balance (ii) Errors which affect trial balance • preparation of suspense account.	belong to the current year but may happen in next year. • appreciate the difference between reserve and reserve fund. • state the need and objectives of preparing trial balance and develop the skill of preparing trial balance. • appreciate that errors may be committed during the process of accounting. • understand the meaning of different types of errors and their effect on trial balance. • develop the skill of identification and location of errors and their rectification and preparation of suspense account.

Part B: Financial Accounting - II

Unit 3: Financial Statements of Sole Proprietorship

Units/Topics	Learning Outcomes
Financial Statements Meaning, objectives and importance; Revenue and Capital Receipts; Revenue and Capital Expenditure; Deferred Revenue expenditure. Opening journal entry. Trading and Profit and Loss Account: Gross Profit, Operating profit and Net profit. Preparation. Balance Sheet: need, grouping and marshalling of assets and liabilities. Preparation. Adjustments in preparation of financial statements with respect to closing stock, outstanding expenses, prepaid expenses, accrued income, income received in advance, depreciation, bad debts, provision for doubtful debts, provision for discount on debtors, Abnormal loss, Goods taken for personal use/staff welfare, interest on capital and managers commission. Preparation of Trading and Profit and Loss account and Balance Sheet of a sole proprietorship with adjustments. **Incomplete Records**	**After going through this Unit, the students will be able to:** • state the meaning of financial statements the • purpose of preparing financial statements. • state the meaning of gross profit, operating profit and net profit and develop the skill of preparing trading and profit and loss account. • explain the need for preparing balance sheet. • understand the technique of grouping and marshalling of assets and liabilities. • appreciate that there may be certain items other than those shown in trial balance which may need adjustments while preparing financial statements. • develop the understanding and skill to do adjustments for items and their presentation in financial statements like depreciation, closing stock, provisions, abnormal loss etc. • develop the skill of preparation of trading and profit and loss account and balance sheet.

Features, reasons and limitations. Ascertainment of Profit/Loss by Statement of Affairs method. (excluding conversion method)	

Part C: Project Work (Any One)

1. Collection of source documents, preparation of vouchers, recording of transactions with the help of vouchers.
2. Preparation of Bank Reconciliation Statement with the given cash book and the pass book with twenty to twenty-five transactions.
3. Comprehensive project of any sole proprietorship business. This may state with journal entries and their ledgering, preparation of Trial balance. Trading and Profit and Loss Account and Balance Sheet. Expenses, incomes and profit (loss), assets and liabilities are to be depicted using pie chart / bar diagram. This may include simple GST related transactions.

PROJECT WORK

It is suggested to undertake this project after completing the unit on preparation of financial statements. The student(s) will be allowed to select any business of their choice or develop the transaction of imaginary business. The project is to run through the chapters and make the project an interesting process. The amounts should emerge as more realistic and closer to reality.

Specific Guidelines for Teachers

Give a list of options to the students to select a business form. You can add to the given list:

1. A beauty parlour
2. Men's saloon
3. A tailoring shop
4. A canteen
5. A cake shop
6. A confectionery shop
7. A chocolate shop
8. A dry cleaner
9. A stationery shop
10. Men's wear
11. Ladies wear
12. Kiddies wear
13. A Saree shop
14. Artificial jewellery shop
15. A small restaurant
16. A sweet shop
17. A grocery shop
18. A shoe shop
19. A coffee shop
20. A music shop
21. A juice shop
22. A school canteen
23. An ice cream parlour
24. A sandwich shop
25. A flower shop

After selection, advise the student(s) to visit a shop in the locality (this will help them to settle on a realistic amounts different items. The student(s) would be able to see the things as they need to invest in furniture, decor, lights, machines, computers etc.

A suggested list of different item is given below.

1. Rent
2. Advance rent [approximately three months]
3. Electricity deposit
4. Electricity bill
5. Electricity fitting
6. Water bill
7. Water connection security deposit
8. Water fittings
9. Telephone bill
10. Telephone security deposit
11. Telephone instrument
12. Furniture
13. Computers
14. Internet connection
15. Stationery
16. Advertisements
17. Glow sign
18. Rates and Taxes
19. Wages and Salary
20. Newspaper and magazines
21. Petty expenses
22. Tea expenses
23. Packaging expenses
24. Transport
25. Delivery cycle or a vehicle purchased
26. Registration
27. Insurance
28. Auditors fee
29. Repairs & Maintenance
30. Depreciations
31. Air conditioners
32. Fans and lights
33. Interior decorations
34. Refrigerators
35. Purchase and sales

At this stage, performas of bulk of originality and ledger may be provided to the students and they may be asked to complete the same.

In the next step the students are expected to prepare the trial balance and the financial statements.

Suggested Question Paper Design
Accountancy (Subject Code 055)
Class XI (2025-26)

Theory: 80 Marks **3 hrs.**
Project: 20 Marks

S N	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	32	40%
3	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	24	30%
4	**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.	24	30%
	TOTAL	**80**	**100%**

Accountancy (Subject Code 055)
Class-XII (2025-26)

Theory: 80 Marks **3 Hours**

Project: 20 Marks

Units			**Marks**
Part A	**Accounting for Partnership Firms and Companies**		
	Unit 1. Accounting for Partnership Firms		36
	Unit 2. Accounting for Companies		24
			60
Part B	**Financial Statement Analysis**		
	Unit 3. Analysis of Financial Statements		12
	Unit 4. Cash Flow Statement		8
			20
Part C	**Project Work**		20
	Project work will include:		
	Project File	12 Marks	
	Viva Voce	8 Marks	
Or			
Part B	**Computerized Accounting**		
	Unit 4. Computerized Accounting		20
Part C	**Practical Work**		20
	Practical work will include:		
	Practical File 12 Marks		
	Viva Voce 8 Marks		

Part A: Accounting for Partnership Firms and Companies

Unit 1: Accounting for Partnership Firms

Units/Topics	Learning Outcomes
• 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 and 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, 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 re-assessment of liabilities, treatment of reserves, accumulated profits and losses,	**After going through this Unit, the students will be able to:** • state the meaning of partnership, partnership firm and partnership deed. • describe the characteristic features of partnership and the contents of partnership deed. • discuss the significance of provision of Partnership Act in the absence of partnership deed. • differentiate between fixed and fluctuating capital, outline the process and develop the understanding and skill of preparation of Profit and Loss Appropriation Account. • develop the understanding and skill of preparation profit and loss appropriation account involving guarantee of profits. • develop the understanding and skill of making past adjustments. • state the meaning, nature and factors affecting goodwill • develop the understanding and skill of valuation of goodwill using different methods. • state the meaning of sacrificing ratio, gaining ratio and the change in profit sharing ratio among existing partners. • develop the understanding of accounting treatment of revaluation assets and reassessment of liabilities and treatment of reserves and accumulated profits by preparing revaluation account and balance sheet. • explain the effect of change in profit sharing ratio on admission of a new partner. • develop the understanding and skill of

adjustment of capital accounts and preparation of capital, 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, 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 a/c (excluding piecemeal distribution, sale to a company and insolvency of partner(s)). **Note:** (i) If the 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). (ii) In case, the realization expenses are borne by a partner, clear indication should be given regarding the payment thereof.	treatment of goodwill as per AS-26, treatment of revaluation of assets and re-assessment of liabilities, treatment of reserves and accumulated profits, adjustment of capital accounts and preparation of capital, current account and balance sheet of the new firm. • explain the effect of retirement / death of a partner on change in profit sharing ratio. • develop the understanding of accounting treatment of goodwill, revaluation of assets and re-assessment of liabilities and adjustment of accumulated profits, losses and reserves on retirement / death of a partner and capital adjustment. • develop the skill of calculation of deceased partner's share till the time of his death and prepare deceased partner's and executor's account. • discuss the preparation of the capital accounts of the remaining partners and the balance sheet of the firm after retirement / death of a partner. • understand the situations under which a partnership firm can be dissolved. • develop the understanding of preparation of realisation account and other related accounts.

Unit-3 Accounting for Companies

Units/Topics	**Learning Outcomes**
Accounting for Share Capital • Features and types of companies. • Share and share capital: nature and types.	**After going through this Unit, the students will be able to:** • state the meaning of share and share capital

• Accounting for share capital: issue and allotment of equity and preferences 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 Employee 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 (concept of TDS is excluded). 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)	and differentiate between equity shares and preference shares and different types of share capital. • understand the meaning of private placement of shares and Employee Stock Option Plan. • explain the accounting treatment of share capital transactions regarding issue of shares. • develop the understanding of accounting treatment of forfeiture and re-issue of forfeited shares. • describe the presentation of share capital in the balance sheet of the company as per schedule III part I of the Companies Act 2013. • explain the accounting treatment of different categories of transactions related to issue of debentures. • develop the understanding and skill of writing of discount / loss on issue of debentures. • understand the concept of collateral security and its presentation in balance sheet. • develop the skill of calculating interest on debentures and its accounting treatment. • state the meaning of redemption of debentures.

Part B: Financial Statement Analysis

Unit 4: Analysis of Financial Statements

Units/Topics	Learning Outcomes
Financial statements of a Company: Meaning, Nature, Uses and importance of financial Statement. Statement of Profit and Loss and Balance Sheet in	**After going through this Unit, the students will be able to:** • develop the understanding of major headings and sub-headings (as per Schedule III to 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.	Companies Act, 2013) of balance sheet as per the prescribed norms / formats. • state the meaning, objectives and limitations of financial statement analysis. • discuss the meaning of different tools of 'financial statements analysis'. • develop the skill of preparation of preparation of comparative and common size statement, understand their uses and difference between the two. • state the meaning, objectives and significance of different types of ratios. • develop the understanding of computation of current ratio and quick ratio. • develop the skill of computation of debt equity ratio, total asset to debt ratio, proprietary ratio and interest coverage ratio. • develop the skill of computation of inventory turnover ratio, trade receivables and trade payables ratio and working capital turnover ratio and others. • develop the skill of computation of 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 5: Cash Flow Statement

Units/Topics	**Learning Outcomes**
• Meaning, objectives Benefits, Cash and Cash Equivalents, Classification of Activities and preparation (as per AS 3 (Revised) (Indirect Method only)	**After going through this Unit, the students will be able to:** • state the meaning and objectives of cash flow statement.

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.*	• develop the understanding of preparation of Cash Flow Statement using indirect method as per AS 3 with given adjustments.

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 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

OR

Part B: Computerised Accounting

Unit 4: Computerised Accounting

Overview of Computerised Accounting System

- Introduction: Application in Accounting.
- Features of Computerised Accounting System.
- Structure of CAS.
- Software Packages: Generic; Specific; Tailored.

Accounting Application of Electronic Spreadsheet.

- Concept of electronic spreadsheet.
- Features offered by electronic spreadsheet.
- Application in generating accounting information - bank reconciliation statement; asset accounting; loan repayment of loan schedule, ratio analysis
- Data representation- graphs, charts and diagrams.

Using Computerized Accounting System.

- Steps in installation of CAS, codification and Hierarchy of account heads, creation of accounts.
- Data: Entry, validation and verification.
- Adjusting entries, preparation of balance sheet, profit and loss account with closing entries and opening entries.
- Need and security features of the system.

Part C: Practical Work

Prescribed Books:

Financial Accounting -I	Class XI	NCERT Publication
Accountancy -II	Class XI	NCERT Publication
Accountancy -I	Class XII	NCERT Publication
Accountancy -II	Class XII	NCERT Publication
Accountancy – Computerised Accounting System	Class XII	NCERT Publication

Suggested Question Paper Design
Accountancy (Subject Code 055)
Class XII (2025-26)

Theory: 80 Marks **3 hrs.**
Project: 20 Marks

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	32	40%
3	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	24	30%
4	**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.	24	30%
	TOTAL	**80**	**100%**

Applied Mathematics

Subject Code – 241

Classes XI-XII (2025 – 26)

Secondary School Education prepares students to explore future career options after graduating from schools. Mathematics is an important subject that helps students to choose various fields of their choices. Mathematics is widely used in higher studies as an allied subject in the field of Economics, Commerce, Social Sciences and many others. It has been observed that the syllabus of Mathematics in senior secondary grades meant for science subjects may not be appropriate for the students who wish to pursue Commerce or Social Science-based subjects in university education. By keeping this in mind, one more elective course in the mathematics syllabus is developed for Senior Secondary classes with an aim to provide students relevant experience in Mathematics that can be used in fields other than Physical Sciences.

This course is designed to develop substantial mathematical skills and methods needed in other subject areas. Topics covered in two years aim to enable students to use mathematical knowledge in the field of business, economic and social sciences. It aims to promote appreciation of mathematical power and simplicity for its countless applications in diverse fields. The course continues to develop mathematical language and symbolism to communicate and relate everyday experiences mathematically. In addition, it reinforces the logical reasoning skills of formulating and validating mathematical arguments, framing examples, finding counterexamples. It encourages students to engage in mathematical investigations and to build connections within mathematical topics and with other disciplines. The course prepares students to use algebraic methods as a means of representation and as a problem-solving tool. It also enables students to interpret two-dimensional geometrical figures using algebra and to further deduce properties of geometrical figures in a coordinate system. The course content will help students to develop a sound understanding of descriptive and inferential statistics which they can use to describe and analyze a given set of data and to further make meaningful inferences out of it. Data based case studies from the field of business, economics, psychology, education, biology and census data will be used to appreciate the power of data in contemporary society.

It is expected that the subject is taught connecting concepts to the applications in various fields. The objectives of the course areas are as follows:

Objectives:

a) To develop an understanding of basic mathematical and statistical tools and their applications in the field of commerce (business/ finance/economics) and social sciences.
b) To model real-world experiences/problems into mathematical expressions using numerical/algebraic/graphical representation.
c) To make sense of the data by organizing, representing, interpreting, analysing, and making meaningful inferences from real-world situations.
d) To develop logical reasoning skills and apply the same in simple problem-solving.
e) To reinforce mathematical communication by formulating conjectures, validating logical arguments and testing hypothesis.
f) To make connections between Mathematics and other disciplines.

Grade XI (2025-26)

Number of Paper: 1

Time: 3 Hours

Max Marks: 80

No.	Units	Marks
I	Numbers, Quantification and Numerical Applications	09
II	Algebra	15
III	Mathematical Reasoning	06
IV	Calculus	10
V	Probability	08
VI	Descriptive Statistics	12
VII	Basics of Financial Mathematics	15
VIII	Coordinate Geometry	05
Total		**80**
Internal Assessment		**20**

CLASS- XI			
Sl. No.	**Contents**	**Learning Outcomes: Students will be able to**	**Notes / Explanation**
UNIT – 1 NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS			
Numbers & Quantification			
1.1	Binary Numbers	• Express decimal numbers in binary system • Express binary numbers in decimal system	• Definition of number system (decimal and binary) • Conversion from decimal to binary system and vice - versa
1.2	Indices, Logarithm and Antilogarithm	• Relate indices and logarithm /antilogarithm • Find logarithm and antilogarithms of given Number	• Applications of rules of indices • Introduction of logarithm and antilogarithm • Common and Natural logarithm
1.3	Laws and properties of logarithms	• Enlist the laws and properties of logarithms • Apply laws of logarithm	• Fundamental laws of logarithm
1.4	Simple applications of logarithm and Antilogarithm	• Use logarithm in different applications	• Express the problem in the form of an equation and apply logarithm/ antilogarithm
Numerical Applications			
1.5	Clock	• Evaluate the angular value of a minute • Calculate the angle formed between two hands of clock at given time • Calculate the time for which hands of clock Meet	• Number of rotations of minute hand / hour hand of a clock in a day • Number of times minute hand and hour hand coincides in a day
1.6	Calendar	• Determine Odd days in a month/ year/ century • Decode the day for the given date	• Definition of odd days • Odd days in a year/ century. • Day corresponding to a given date
1.7	Time, Work and Distance	• Establish the relationship between work and time • Compare the work done by the individual / group w.r.t. time • Calculate the time taken/ distance covered/ Work done from the given data	• Basic concept of time and work • Problems on time taken / distance covered / work done

1.8	Seating arrangement	• Create suitable seating plan/ draft as per given conditions (Linear/circular) • Locate the position of a person in a seating arrangement	• Linear and circular seating arrangement • Position of a person in a seating arrangement
UNIT – 2 ALGEBRA			
Sets			
2.1	Introduction to sets – definition	• Define set as well-defined collection of objects	• Definition of a Set • Examples and Non-examples of Set
2.2	Representation of sets	• Represent a set in Roster form and Set builder form	• Write elements of a set in Set Builder form and Roster Form • Convert a set given in Roster form into Set builder form and vice-versa
2.3	Types of sets and their notations	• Identify different types of sets on the basis of number of elements in the set • Differentiate between equal set and equivalence set	• Types of Sets: Finite Set, Infinite Set, Empty Set, Singleton Set
2.4	Subsets	• Enlist all subsets of a set • Find number of subsets of a given set • Find number of elements of a power set	• Subset of a given set • Familiarity with terms like Superset, Improper subset, Universal set, Power set
2.5	Intervals	• Express subset of real numbers as intervals	• Open interval, closed interval, semi open interval and semi closed interval
2.6	Venn diagrams	• Apply the concept of Venn diagram to understand the relationship between sets • Solve problems using Venn diagram	• Venn diagrams as the pictorial representation of relationship between sets • Practical Problems based on Venn Diagrams

2.7	Operations on sets	• Perform operations on sets to solve practical problems	• Operations on sets include i) Union of sets ii) Intersection of sets iii) Difference of sets iv) Complement of a set v) De Morgan's Laws
Relations			
2.8	Ordered pairs Cartesian product of two sets	• Explain the significance of specific arrangement of elements in a pair • Write Cartesian product of two sets • Find the number of elements in a Cartesian product of two sets	• Ordered pair, order of elements in an ordered pair and equality of ordered pairs • Cartesian product of two non-empty sets
2.9	Relations	• Express relation as a subset of Cartesian product • Find domain and range of a relation	• Definition of Relation, examples pertaining to relations in the real number system
Sequences and Series			
2.10	Sequence and Series	• Differentiate between sequence and series	• Sequence: $a_1, a_2, a_3, \ldots, a_n$ • Series: $a_1 + a_2 + a_3 + \ldots + a_n$
2.11	Arithmetic Progression	• Identify Arithmetic Progression (AP) • Establish the formulae of finding n^{th} term and sum of *n* terms • Solve application problems based on AP • Find arithmetic mean (AM) of two positive numbers	• General term of A P: $t_n = a + (n-1)d$ • Sum of n terms of A P: $S_n = \frac{n}{2}[2a + (n-1)d]$ • AM of a and $b = \frac{a+b}{2}$
2.12	Geometric Progression	• Identify Geometric Progression (GP) • Derive the n^{th} term and sum of n terms of a given GP • Solve problems based on applications of GP • Find geometric mean (GM) of two positive numbers • Solve problems based on relation between AM and GM	• General term of GP: $t_n = a\, r^{n-1}$ • Sum of n terms of A P: $S_n = \frac{a(r^n - 1)}{r - 1}$ • Sum of infinite terms of GP $= \frac{a}{1-r}$, where $-1 < r < 1$ • Geometric mean of a and $b = \sqrt{ab}$ • For two positive numbers a and b, AM ≥GM i.e., $\frac{a+b}{2} \geq \sqrt{ab}$

2.13	Applications of AP and GP	• Apply appropriate formulas of AP and GP to solve application problems	Applications based on • Economy Stimulation • The Virus spread
Permutations and Combinations			
2.14	Factorial	• Define factorial of a number • Calculate factorial of a number	• Definition of factorial: $n! = n(n-1)(n-2) \ldots 3.2.1$ • Usage of factorial in counting principles
2.15	Fundamental Principle of Counting	• Appreciate how to count without counting	• Fundamental Principle of Addition • Fundamental Principle of Multiplication
2.16	Permutations	• Define permutation • Apply the concept of permutation to solve simple problems	• Permutation as arrangement of objects in a definite order taken some or all at a time. Theorems under different conditions resulting in $^{n}P_{r} = \frac{n!}{(n-r)!}$ or n^{r} or $\frac{n!}{n_1!n_2!\ldots n_k!}$ arrangements.
2.17	Combinations	• Define combination • Differentiate between permutation and combination • Apply the formula of combination to solve the related problems	• The number of combinations of n different objects taken r at a time is given by $^{n}C_{r} = \frac{n!}{r!(n-r)!}$ Some results on Combinations: • $^{n}C_{0} = 1 = {}^{n}C_{n}$ • $^{n}C_{a} = {}^{n}C_{b} \Rightarrow a = b \text{ or } a+b = n$ • $^{n}C_{r} = {}^{n}C_{n-r}$ • $^{n}C_{r} + {}^{n}C_{r-1} = {}^{n+1}C_{r}$
UNIT -3 MATHEMATICAL REASONING			
3.1	Logical reasoning	• Solve logical problems involving odd man out, syllogism, blood relation and coding decoding	• Odd man out • Syllogism • Blood relations • Coding Decoding
UNIT – 4 CALCULUS			
4.1	Functions	• Identify dependent and independent variables • Define a function using dependent and independent variable	• Dependent variable and independent variable • Function as a rule or law that defines a relationship between one variable (the independent variable) and another variable (the dependent variable)

4.2	Domain and Range of a function	• Define domain, range and co-domain of a given function	• Domain as a set of all values of independent variable • Co-domain as a set of all values of dependent variable • Range of a function as set of all possible resulting values of dependent variable
4.3	Types of functions and their graphical representation	• Define various types of functions • Identify domain, co-domain and range of the function • Representation of function graphically	• Following types of functions with definitions, characteristics and their graphs. Constant function, Identity function, Polynomial function, Rational function, Composite function, Logarithm function, Exponential function, Modulus function, Algebraic function.
4.4	Concepts of limits and continuity of a function	• Define limit of a function • Solve problems based on the algebra of limits • Define continuity of a function	• Left hand limit, Right hand limit, Limit of a function, Continuity of a function
4.5	Instantaneous rate of change	• Define instantaneous rate of change	• The ratio $\frac{\Delta y}{\Delta x} = \frac{f(x+\Delta x)-f(x)}{\Delta x}$ as instantaneous rate of change, where Δy is change in y and Δx is change in x at any instant.
4.6	Differentiation as a process of finding derivative	• Find the derivative of the functions	• Derivatives of functions (non-trigonometric only)
4.7	Derivatives of algebraic functions using Chain Rule	• Find the derivative of function of a function	• If $y = f(u)$ where $u = g(x)$ then differential coefficient of y w.r.t x is $\frac{dy}{dx} = \frac{dy}{du}.\frac{du}{dx}$
UNIT – 5 PROBABILITY			
5.1	Introduction	• Appreciate the use of probability in daily life situations	• Probability as quantitative measure of uncertainty • Use of probability in determining the insurance premium, weather forecasts etc.
5.2	Random experiment and sample space	• Define random experiment and sample space with suitable examples	• Sample space as set of all possible outcomes
5.3	Event	• Define an event • Recognize and differentiate different types of events and find their probabilities	• Types of Events: Impossible and sure event, Independent and dependent event, mutually exclusive and exhaustive event.

5.4	Conditional Probability	• Define the concept of conditional probability • Apply reasoning skills to solve problems based on conditional probability	• Conditional Probability of event E given that F has occurred is: $P(E\|F) = \frac{P(E \cap F)}{P(F)}, P(F) \neq 0$
UNIT- 6 DESCRIPTIVE STATISTICS			
6.1	Data Interpretation – Measure of Dispersion	• Understand meaning of dispersion in a data set • Differentiate between range, quartile deviation, mean deviation and standard deviation • Calculate range, quartile deviation, mean deviation and standard deviation for ungrouped and grouped data set • Choose appropriate measure of dispersion to calculate spread of data	• Mean deviation around mean and median • Standard deviation and variance • Examples of different kinds of data helping students to choose and compare different measures of dispersion
6.2	Percentile rank	• Define Percentile rank • Calculate and interpret Percentile rank of scores in a given ungrouped data set	• Emphasis on visualizing, analysing and interpreting percentile rank scores
6.3	Correlation	• Define correlation in values of two data sets • Calculate Spearman's rank correlation for ungrouped data • Interpret the coefficient of correlation	• Emphasis on application, analysis and interpreting the results of coefficient of correlation using practical examples
UNIT – 7 FINANCIAL MATHEMATICS			
7.1	Interest and Interest Rates	• Define the concept of Interest Rates • Compare the difference between Nominal Interest Rate, Effective Rate and Real Interest Rate • Solve Practical applications of interest rate	• Impact of high interest rates and low interest rates on the business.

7.2	Accumulation with simple and compound interest	• Interpret the concept of simple and compound interest • Calculate Simple Interest and Compound Interest	• Meaning and significance of simple and compound interest • Compound interest rates applications on various financial products
7.3	Simple and compound interest rates with equivalency	• Explain the meaning, nature and concept of equivalency • Analyze various examples for understanding annual equivalency rate	• Concept of Equivalency • Annual Equivalency Rate
7.4	Effective rate of interest	• Define with examples the concept of effective rate of interest	• Effective Annual Interest Rate $\left(1+\frac{i}{n}\right)^{n}-1$ where: i = Nominal Interest Rate n = No. of Periods
7.5	Annuities, Calculating value of Regular Annuity	• Explain the concept of Immediate Annuity, Annuity due and Deferred Annuity • Calculate General Annuity	• Definition, Formulae and Examples
7.6	Simple applications of regular annuities (up to 3 period)	• Calculate the future value of regular annuity, annuity due • Apply the concept of Annuity in real life situations	• Examples of regular annuity: Mortgage Payment, Car Loan Payments, Leases, Rent Payment, Insurance payouts etc.
7.7	Tax, calculation of tax, simple applications of tax calculation in Goods and service tax, Income Tax	• Explain fundamentals of taxation • Differentiate between Direct and indirect tax • Define and explain GST • Calculate GST • Explain rules under State Goods and Services Tax (SGST) Central Goods and Services Tax (CGST) and Union Territory. Goods and Services Tax (UTGST)	• Computation of income tax Add Income from salary, house property, business or profession, capital gain, other sources, etc. Less deductions: PF, PPF, LIC, Housing loan, FD, NSC etc. • Assess the Individuals under Income Tax Act • Formula for GST – Different Tax heads under GST

7.8	Bills, tariff rates, fixed charge, surcharge, service charge	• Describe the meaning of bills and its various types • Analyze the meaning and rules determining tariff rates • Explain the concept of fixed charge	• Tariff rates- its basis of determination • Concept of fixed charge service charge and their applications in various sectors of Indian economy
7.9	Calculation and interpretation of electricity bill, water supply bill and other supply bills	• To interpret and analyze electricity bills, water bills and other supply bills • Evaluate how to calculate units consumed under electricity bills/water bill.	• Components of electricity bill/water bill and other supply bills: i) overcharging of electricity ii) units consumed in water supply bills iii) units consumed in electricity bills
UNIT – 8 COORDINATE GEOMETRY			
8.1	Straight line	• Find the slope and equation of line in various form • Find angle between the two lines • Find the perpendicular distance of a given point from a line • Find the distance between two parallel lines	• Gradient of a line • Equation of line: Parallel to axes, point-slope form, two-points form, slope intercept form, intercept form • Application of the straight line in demand curve related to economics problems
8.2	Circle	• Define a circle • Find different form of equations of a circle • Solve problems based on applications of circle	• Circle as a locus of a point in a plane • Equation of a circle in standard form, central form, diameter form and general form
8.3	Parabola	• Define parabola and related terms	• Parabola as a locus of a point in a plane. • Equation of a parabola in standard form.

Practical: Use of spreadsheet

Calculating average, interest (simple and compound), creating pictographs, drawing pie chart, bar graphs, calculating central tendency visualizing graphs (straight line, circles and parabola using real-time data)

Suggested practical using spreadsheet

1. Plot the graph of functions on excel study the nature of function at various points, drawing lines of tangents
2. Create a budget of income and spending
3. Create and compare sheet of price & features to buy a product
4. Prepare the best option plan to buy a product by comparing cost, shipping charges, tax and other hidden costs
5. Smart purchasing during sale season
6. Prepare a report card using scores of the last four exams and compare the performance
7. Collect the data on weather, price, inflation, and pollution. Sketch different types of graphs and analyze the results.

Grade XII (2025-26)

Number of Paper: **1**

Time: **3 Hours**

Max Marks: **80**

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

CLASS- XII			
Sl. No.	**Contents**	**Learning Outcomes: Students will be able to**	**Notes / Explanation**
UNIT – 1 NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS			
Numbers & Quantification			
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
1.3	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 allegation	• Meaning and Application of rule of alligation • Mean price of a mixture
1.4	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 performance of two players w.r.t. time, • distance	• Calculation of the time taken/ distance covered / • speed of each player
1.5	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	• 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 cofactors •If A and B are invertible square matrices of same size, i) $(AB)^{-1} = B^{-1}A^{-1}$ ii) $(A^{-1})^{-1} = A$ iii) $(A')^{-1} = (A^{-1})'$
2.6	Solving system of simultaneous equations using matrix method and Cramer's rule	• 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 up to three variables only (non- homogeneous equations)

UNIT- 3 CALCULUS			
Differentiation and its Applications			
3.1	Derivatives up to second order	• Determine derivatives up to second order • Understand differentiation of parametric functions and implicit functions	• Simple problems based on up to second 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	• To find the rate of change of quantities such as area and volume with respect to time or its dimension
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 related to optimization of cost, revenue and profit only.	• 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 iii) by parts	• Simple integrals based on each method (non-trigonometric function)
3.8	Definite Integrals as area under the curve	• Define definite integral as area under the curve • Understand fundamental theorem of Integral calculus and apply it to evaluate the definite integral	• Evaluation of area under simple algebraic curves up to 2nd degree.
3.9	Application of Integration	• Identify the region representing consumer surplus and producer surplus 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 using variable separable method only	• Formation of differential equation by eliminating arbitrary constants • Solution of simple differential equations (direct integration only)
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 binomial distribution • Binomial formula: $P(r) = n_{C_r} p^r q^{n-r}$ 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: $P(X) = \frac{\lambda^x e^{-\lambda}}{x!}$ • Mean = Variance $= \lambda$
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 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 Significance and Statistical Inferences • State Central Limit Theorem • Explain the relation between Population-Sampling Distribution-Sample	• 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 Inferences • Only conceptual understanding of Sampling Distribution through simulation and graphs
5.3	t-Test (one sample t-test and for a small group sample)	• 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	• 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*)
UNIT – 6 TIME-BASED DATA			
6.1	Time Series	• Identify time series as chronological data	• Meaning and Definition
6.2	Components of Time Series	• Distinguish between different components of time series	• Secular trend • Seasonal variation • Cyclical variation • Irregular variation
6.3	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
6.4	Secular Trend	• Understand the long-term tendency	• The tendency of the variable to increase or decrease over a long period of time
6.5	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
7.2	Valuation of Bonds	• Define the concept of valuation of bond and related terms. • Calculate value of bond using present value approach	• Meaning of Bond Valuation • Terms related to valuation of bond: Coupon rate, Maturity rate and Current price. • Bond Valuation Method: Present Value Approach
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	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
7.5	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 constraints

8.2	Mathematical formulation of Linear Programming Problem	• Formulate Linear Programming Problem upto 3 non-trivial constraints	• 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 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
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) Fibonacci 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/State ment3.html 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

BIOLOGY

Subject Code – 044

Classes XI - XII (2025-26)

The present curriculum provides the students with updated concepts along with an extended exposure to contemporary areas of the subject. The curriculum also aims at emphasizing the underlying principles that are common to animals, plants and microorganisms as well as highlighting the relationship of Biology with other areas of knowledge. The format allows a simple, clear, sequential flow of concepts. It links the discoveries and innovations in biology to everyday life such as environment, industry, health and agriculture. The Biology curriculum is expected to enable the students to:

- develop capacities for observation, experimentation, documentation, and familiarity with quantitative reasoning and multi-disciplinary approaches.
- engender sensitivity towards biological issues (environment, health) in their surroundings and be aware of how citizens can contribute to their local communities and to science.
- be aware of bioethical concerns that arise in biology today.
- understand the integration of different fields of biology and highlight the interconnections between these fields.
- be exposed to diverse careers in the life sciences.

This curriculum of Biology will help in achieving the following curricular goals and competencies delineated in the National Curriculum Framework for School Education 2023:

CG-3 Explores the structure and function of the living world at the cellular level	C-3.1 Explains the role of cellular components (nucleus, mitochondria, endoplasmic reticulum, vacuoles, chloroplast, cell wall), including the semi permeability of cell membrane in making cell the structural basis of living organisms and functional basis of life processes C-3.2 Analyses similarities and differences in the life processes involved in nutrition (photosynthesis in plants; absorption of nutrients in fungi; digestion in animals), transport (transport of water in plants; circulation in animals), exchange of materials (respiration and excretion), and reproduction C-3.3 Describes mechanisms of heredity (in terms of DNA, genes, chromosomes) and variation (as changes in the sequence of DNA)
CG-4 Explores interconnectedness between organisms and their	C-4.1 Applies the knowledge of cellular diversity in organisms along with the ecological role organisms play (autotrophic/ heterotrophic nutrition) to classify them into five-kingdoms

environment	C-4.2 Illustrates different levels of organisations of living organisms (from molecules to organisms) C-4.3 Analyses different levels of biological organisation from organisms to ecosystems and biomes along with interactions that take place at each level C-4.4 Analyses patterns of inheritance of traits in terms of Mendel's laws and its consequences at a population level (using models and/or simulations) C-4.5 Analyses evidences of biological evolution demonstrating the consequences of the process of natural selection in terms of changes — in allele frequency in population, structure, and function of organisms
CG-5 Draws linkages between scientific knowledge and knowledge across other curricular areas	C-5.3 Applies scientific principles to explain phenomena in other subjects (sound pitch, octave, and amplitude in music; use of muscles in dance form and sports)
CG-6 Understands and appreciates the contribution of India through history and the present times to the overall field of Science, including the disciplines that constitute it	C-6.1 Knows and explains the significant contributions of India to all matters (concepts, explanations, methods) that are studied within the curriculum in an integrated manner
CG-7 Develops awareness of the most current discoveries, ideas, and frontiers in all areas of scientific knowledge in order to appreciate that Science is ever evolving, and that there are still many unanswered questions	C-7.1 States concepts that represent the most current understanding of the matter being studied — ranging from mere familiarity to conceptual understanding of the matter as appropriate to the developmental stage of the students C-7.2 States questions related to matters in the curriculum for which current scientific understanding is well-recognised to be inadequate
CG-8 Explores the nature of Science by doing Science	C-8.1 Develops accurate and appropriate models (including geometric, mathematical, graphical) to represent real-life events and phenomena using scientific principles and use these models to manipulate variables and predict results C-8.2 Designs and implements a plan for scientific inquiry (formulates hypotheses, makes predictions, identifies variables, accurately uses scientific instruments, represents data — primary and secondary — in multiple modes, draws inferences based on data and understanding of scientific concepts, theories, laws, and principles, communicates findings using scientific terminology)

It is expected that the students would get an exposure to various branches of Biology in the curriculum in a more contextual and systematic manner as they study its various units.

(NCFSE-2023)

Attainment of the competencies shall be done through transaction of the curriculum using appropriate pedagogy; these shall be assessed through an integrated evaluation scheme.

COURSE STRUCTURE
CLASS XI (2025-26)
(THEORY)

Time: 03 Hours **Max. Marks: 70**

Unit	Title	Marks
I	Diversity of Living Organisms	15
II	Structural Organization in Plants and Animals	10
III	Cell: Structure and Function	15
IV	Plant Physiology	12
V	Human Physiology	18
	Total	**70**

Unit-I Diversity of Living Organisms

Chapter-1: The Living World

Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature

Chapter-2: Biological Classification

Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids.

Chapter-3: Plant Kingdom

Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae and Angiosperms.

Chapter-4: Animal Kingdom

Salient features and classification of animals, non-chordates up to phyla level and chordates upto class level (salient features and at a few examples of each category).

(No live animals or specimen should be displayed.)

Unit-II Structural Organization in Plants and Animals

Chapter-5: Morphology of Flowering Plants

Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of family Solanaceae

Chapter-6: Anatomy of Flowering Plants

Anatomy and functions of tissue systems in dicots and monocots.

Chapter-7: Structural Organisation in Animals

Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog.

Unit-III Cell: Structure and Function

Chapter-8: Cell-The Unit of Life

Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.

Chapter-9: Biomolecules

Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, and nucleic acids; Enzyme - types, properties, enzyme action. (Topics excluded: Nature of Bond Linking Monomers in a Polymer, Dynamic State of Body Constituents Concept of Metabolism, Metabolic Basis of Living, The Living State)

Chapter-10: Cell Cycle and Cell Division

Cell cycle, mitosis, meiosis and their significance

Unit-IV Plant Physiology

Chapter-11: Photosynthesis in Higher Plants

Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.

Chapter-12: Respiration in Plants

Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

Chapter-13: Plant - Growth and Development

Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes

in a plant cell; plant growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.

Unit-V Human Physiology

Chapter-14: Breathing and Exchange of Gases

Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders.

Chapter-15: Body Fluids and Circulation

Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure.

Chapter-16: Excretory Products and their Elimination

Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system – structure and function; urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant.

Chapter-17: Locomotion and Movement

Types of movement - ciliary, flagellar, muscular; skeletal muscle, contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

Chapter-18: Neural Control and Coordination

Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse

Chapter- 19: Chemical Coordination and Integration

Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goitre, diabetes, Addison's disease.

The following topics are included in the syllabus but will be assessed only formatively to reinforce understanding without adding to summative assessments. The reduces academic stress while ensuring meaningful learning. Schools can integrate these with existing chapters as they align well. Relevant NCERT textual material is enclosed for reference.

Digestion and Absorption (Please Refer to CBSE Reading Material)

Alimentary canal and digestive glands, role of digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorption and assimilation of proteins, carbohydrates and fats; calorific values of proteins, carbohydrates and fats; egestion; nutritional and digestive disorders - PEM, indigestion, constipation, vomiting, jaundice, diarrhoea.

PRACTICALS

Time: 03 Hours **Max. Marks: 30**

<table>
<tr><th colspan="2">Evaluation Scheme</th><th>Marks</th></tr>
<tr><td colspan="2">One Major Experiment Part A (Experiment No- 1,3,7,8)</td><td>5 Marks</td></tr>
<tr><td colspan="2">One Minor Experiment Part A (Experiment No- 6,9,10,11,12,13)</td><td>4 Marks</td></tr>
<tr><td colspan="2">Slide Preparation Part A (Experiment No- 2,4,5)</td><td>5 Marks</td></tr>
<tr><td colspan="2">Spotting Part B</td><td>7 Marks</td></tr>
<tr><td>Practical Record + Viva Voce</td><td rowspan="2">(Credit to the student's work over the academic session may be given)</td><td>4 Marks</td></tr>
<tr><td>Project Record + Viva Voce</td><td>5 Marks</td></tr>
<tr><td colspan="2">Total</td><td>30 Marks</td></tr>
</table>

A: List of Experiments

1. Study and describe locally available common flowering plants, from family Solanaceae (Poaceae, Asteraceae or Brassicaceae can be substituted in case of particular geographical location) including dissection and display of floral whorls, anther and ovary to show number of chambers (floral formulae and floral diagrams), type of root (tap and adventitious); type of stem (herbaceous and woody); leaf (arrangement, shape, venation, simple and compound).
2. Preparation and study of T.S. of dicot and monocot roots and stems (primary).
3. Study of osmosis by potato osmometer.
4. Study of plasmolysis in epidermal peels (e.g. Rhoeo/lily leaves or flashy scale leaves of onion bulb).
5. Study of distribution of stomata on the upper and lower surfaces of leaves.

6. Comparative study of the rates of transpiration in the upper and lower surfaces of leaves.
7. Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.
8. Separation of plant pigments through paper chromatography.
9. Study of the rate of respiration in flower buds/leaf tissue and germinating seeds.
10. Test for presence of urea in urine.
11. Test for presence of sugar in urine.
12. Test for presence of albumin in urine.
13. Test for presence of bile salts in urine.

B. Study and Observe the following (spotting):

1. Parts of a compound microscope.
2. Specimens/slides/models and identification with reasons - Bacteria, *Oscillatoria, Spirogyra, Rhizopus*, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.
3. Virtual specimens/slides/models and identifying features of - *Amoeba, Hydra,* liver fluke, *Ascaris*, leech, earthworm, prawn, silkworm, honey bee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.
4. Mitosis in onion root tip cells and animal's cells (grasshopper) from permanent slides.
5. Types of inflorescence (cymose and racemose).
6. Human skeleton and different types of joints with the help of virtual images/models only.

Practical Examination for Visually Impaired Students Class XI

Note: The 'Evaluation schemes' and 'General Guidelines' for visually impaired students as given for Class XII may be followed.

A. Items for Identification/Familiarity with the apparatus /equipment /animal and plant material / chemicals for assessment in practicals (All experiments)

B. Equipment - compound microscope, test tube, petri dish, chromatography paper, chromatography chamber, beaker, scalpel

Chemical – alcohol

Models – Model of Human skeleton to show – Ball and socket joints of girdles and limbs, Rib cage, Honeycomb, Mollusc shell, Pigeon and Star fish, cockroach

Specimen/Fresh Material – mushroom, succulents such as *Aloe vera*/ kalenchoe, raisins, potatoes, seeds of monocot and dicot- maize and gram or any other plant, plants of Solanaceae - Brinjal, Petunia, any other

C. List of Practicals

1. Study locally available common flowering plants of the family – Solanaceae and identify type of stem (Herbaceous or Woody), type of leaves (Compound or Simple).
2. Study the parts of a compound microscope- eye piece and objective lens, mirror, stage, coarse and fine adjustment knobs.
3. Differentiate between monocot and dicot plants on the basis of venation patterns.
4. Study the following parts of human skeleton (Model): Ball and socket joints of thigh and shoulder
5. Rib cage
6. Study honeybee/butterfly, snail/sheik snail through shell, Starfish, Pigeon (through models).
7. Identify the given specimen of a fungus – mushroom, gymnosperm-pine cone.
8. Identify and relate the experimental set up with the aim of experiment: For Potato Osmometer/endosmosis in raisins.

Note: The above practicals may be carried out in an experiential manner rather than only recording observations.

Prescribed Books:

1. Biology Class-XI, Published by NCERT
2. Other related books and manuals brought out by NCERT (including multimedia).
3. Biology supplementary Material (Revised). Available on CBSE Website.
4. Reading Material Biology Class XI.

COURSE STRUCTURE

CLASS XII (2025 - 26)

(THEORY)

Time: 03 Hours **Max. Marks: 70**

Unit	Title	Marks
VI	Reproduction	**16**
VII	Genetics and Evolution	**20**
VIII	Biology and Human Welfare	**12**
IX	Biotechnology and its Applications	**12**
X	Ecology and Environment	**10**
	Total	**70**

Unit-VI Reproduction

Chapter-1: 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-2: Human Reproduction

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

Chapter-3: 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-4: 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-5: 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-6: 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-7: Human Health and Diseases

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

Chapter-8: 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-9: Biotechnology - Principles and Processes

Genetic Engineering (Recombinant DNA Technology).

Chapter-10: 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; biosafety issues, biopiracy and patents.

Unit-X Ecology and Environment

Chapter-11: Organisms and Populations

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

Chapter-12: Ecosystem

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

Chapter-13: 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.

PRACTICALS

Time allowed: 3 Hours **Max. Marks: 30**

<table>
<tr><th colspan="3">Evaluation Scheme</th><th>Marks</th></tr>
<tr><td colspan="2">One Major Experiment</td><td>5</td><td>5</td></tr>
<tr><td colspan="2">One Minor Experiment</td><td>2 & 3</td><td>4</td></tr>
<tr><td colspan="2">Slide Preparation</td><td>1 & 4</td><td>5</td></tr>
<tr><td colspan="3">Spotting</td><td>7</td></tr>
<tr><td>Practical Record + Viva Voce</td><td rowspan="2">(Credit to the student's work over the academic session may be given)</td><td></td><td>4</td></tr>
<tr><td>Investigatory Project and its Project Record + Viva Voce</td><td></td><td>5</td></tr>
<tr><td colspan="3">Total</td><td>30</td></tr>
</table>

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, banana 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. Models specimens showing symbiotic association in lichens, root nodules of leguminous plants, and parasitic mode of nutrition shown by Cuscuta on host.
11. Flash cards / models showing examples of homologous and analogous organs.

Practical Examination for Visually Impaired Students of Classes XI and XII

Evaluation Scheme

Time: 02 Hours **Max. Marks: 30**

Topic	Marks
Identification/Familiarity with the apparatus	5
Written test (Based on given / prescribed practicals)	10
Practical Records	5
Viva	10
Total	**30**

General Guidelines

- The practical examination will be of two-hour duration. A separate list of ten experiments is included here.
- The written examination in practicals for these students will be conducted at the time of practical examination of all other students.

- The written test will be of 30 minutes duration.
- The question paper given to the students should be legibly typed. It should contain a total of 15 practical skill based very short answer type questions. A student would be required to answer any 10 questions.
- A writer may be allowed to such students as per CBSE examination rules.
- All questions included in the question paper should be related to the listed practicals. Every question should require about two minutes to be answered.
- These students are also required to maintain a practical file. A student is expected to record at least five of the listed experiments as per the specific instructions for each subject. These practicals should be duly checked and signed by the internal examiner.
- The format of writing any experiment in the practical file should include aim, apparatus required, simple theory, procedure, related practical skills, precautions etc.
- Questions may be generated jointly by the external/internal examiners and used for assessment.
- The viva questions may include questions based on basic theory / principle / concept, apparatus / materials / chemicals required, procedure, precautions, sources of error etc.

Class XII

A. Items for Identification/ familiarity with the apparatus for assessment in practicals (All experiments) Beaker, flask, petriplates, soil from different sites - sandy, clayey, loamy, small potted plants, aluminium foil, paint brush, test tubes, starch solution, iodine, ice cubes, Bunsen burner/spirit lamp/water bath, large flowers, Maize inflorescence, model of developmental stages highlighting morula and blastula of frog, beads/seeds of different shapes/size/texture *Ascaris*, Cactus/*Opuntia* (model).

B. List of Practicals

1. Study of flowers adapted to pollination by different agencies (wind, insects).
2. Identification of T.S of morula or blastula of frog (Model).
3. Study of Mendelian inheritance pattern using beads/seeds of different sizes/texture.
4. Preparation of pedigree charts of genetic traits such as rolling of tongue, colour blindness.
5. Study of emasculation, tagging and bagging by trying out an exercise on controlled pollination.

6. Identify common disease causing organisms like *Ascaris* (model) and learn some common symptoms of the disease that they cause.
7. Comment upon the morphological adaptations of plants found in xerophytic conditions.

Note: The above practicals may be carried out in an experiential manner rather than recording observations.

Prescribed Books:

1. Biology, Class-XII, Published by NCERT.
2. Other related books and manuals brought out by NCERT (consider multimedia also).
3. Biology Supplementary Material (Revised). Available on CBSE website.

Question Paper Design (Theory)

Class XII (2025 -26)

Biology (044)

Competencies	Total
Demonstrate Knowledge and Understanding	50 %
Application of Knowledge / Concepts	30 %
Analyse, Evaluate and Create	20 %

Note:

- Typology of questions: VSA including MCQs, Assertion – Reasoning type questions; SA; LA-I; LA-II; Source-based/ Case-based/ Passage-based/ Integrated assessment questions.
- An internal choice of approximately 33% would be provided.

Suggestive verbs for various competencies

- **Demonstrate, Knowledge and Understanding**
  State, name, list, identify, define, suggest, describe, outline, summarize, etc.
- **Application of Knowledge/Concepts**
  Calculate, illustrate, show, adapt, explain, distinguish, etc.
- **Analyze, Evaluate and Create**
  Interpret, analyse, compare, contrast, examine, evaluate, discuss, construct, etc.

CHEMISTRY
Subject Code: 043
Classes XI-XII (2025-26)

Rationale

The second phase of Secondary stage is the most crucial stage of school education because at this juncture specialized discipline based, content - oriented courses are introduced. Students reach this stage after 10 years of general education and opt for Chemistry with a purpose of pursuing their career in basic sciences or professional courses like medicine, engineering, technology and study courses in applied areas of science and technology at tertiary level. Therefore, there is a need to provide the learners with a sufficient conceptual background of Chemistry, which will make them competent to meet the challenges of academic and professional courses after this stage.

The new and updated curriculum is based on a disciplinary approach with rigor and depth taking care that the syllabus is not heavy and at the same time it is comparable to that at the international level. The pedagogy of Chemistry has undergone tremendous changes in recent times. Many new areas like green chemistry, material science, biomolecules, and industrial chemistry deserve to be an integral part of the chemistry syllabus at this stage. Globally, nomenclature of elements and compounds, symbols and units of physical quantities recommended by scientific bodies like IUPAC and CGPM are of immense importance and also need to be incorporated in the updated syllabus. The proposed syllabus adequately addresses these issues.

Objectives

The curriculum of Chemistry at the second phase of Secondary stage has been designed to:

- equip the learners with tools to understand the working of Chemistry rather than mere facts of it;
- develop the necessary conceptual foundations of chemistry and ability to apply them to real life situations;
- enable the learners to represent chemical phenomena at macroscopic, molecular, and symbolic levels;
- make the learners identify patterns and form connections that underlie various chemical phenomena;
- prepare the learners to contribute to frontier research areas related to climate change, environmental issues, materials science, biology and medicine etc.:
- inculcate problem solving skills in the learners and integrate life skills and values in the context of chemistry; and
- apprise learners of the interface of chemistry with other disciplines of science such as physics, biology, geology, engineering etc.

COURSE STRUCTURE
CLASS XI
THEORY

Time: 3 Hours **Total Marks: 70**

S. No	UNIT	Marks
1	Some Basic Concepts of Chemistry	7
2	Structure of Atom	9
3	Classification of Elements and Periodicity in Properties	6
4	Chemical Bonding and Molecular Structure	7
5	Chemical Thermodynamics	9
6	Equilibrium	7
7	Redox Reactions	4
8	Organic Chemistry: Some basic Principles and Techniques	11
9	Hydrocarbons	10
	TOTAL	**70**

Unit 1: Some Basic Concepts of Chemistry

General Introduction: Importance and scope of Chemistry, Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules, atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.

Unit 2: Structure of Atom

Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals.

Unit 3: Classification of Elements and Periodicity in Properties

Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valiancy, Nomenclature of elements with atomic number greater than 100.

Unit 4: Chemical Bonding and Molecular Structure

Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), Hydrogen bond.

Unit 5: Chemical Thermodynamics

Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions.

First law of thermodynamics -internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH, Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction), Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes, criteria for equilibrium, Third law of thermodynamics (brief introduction).

Unit 6: Equilibrium

Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium – Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion effect (with illustrative examples).

Unit 7: Redox Reactions

Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.

Unit 8: Organic Chemistry – Some Basic Principles and Techniques

General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electrometric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.

Unit 9: Hydrocarbons

Aliphatic Hydrocarbons

Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis.

Alkenes - Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition.

Alkynes - Nomenclature, structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water.

Aromatic Hydrocarbons

Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of functional group in mono substituted benzene, carcinogenicity and toxicity

Note: The following topics are included in the syllabus but will be assessed only formatively to reinforce understanding without adding to summative assessments. This reduces academic stress while ensuring meaningful learning. Schools can integrate these with existing chapters as they align well. Relevant NCERT textual material is enclosed for reference.

1. **s & p Block Elements**
   Electronic configuration, atomic & Ionic radii, Ionization Enthalpy, Hydration Enthalpy and general trends in physical and chemical properties of s and p block elements across the periods and down the groups; unique behavior of the first element in each group.
2. **The Gaseous State**
   Qualitative treatment of Gas laws, Ideal gas equation and deviations from it.

PRACTICAL

Evaluation Scheme for Examination	Marks
Volumetric Analysis	08
Salt Analysis	08
Content Based Experiment	06
Project Work	04
Class record and viva	04
Total	**30**

PRACTICAL SYLLABUS

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

A.Basic Laboratory Techniques

1. Cutting glass tube and glass rod
2. Bending a glass tube
3. Drawing out a glass jet
4. Boring a cork

B.Characterization and Purification of Chemical Substances

1. Determination of melting point of an organic compound.
2. Determination of boiling point of an organic compound.
3. Crystallization of impure sample of any one of the following: Alum, Copper Sulphate, Benzoic Acid.

C.Experiments based on pH

1. Any one of the following experiments:
    - Determination of pH of some solutions obtained from fruit juices, solution of known and varied concentrations of acids, bases and salts using pH paper or universal indicator.
    - Comparing the pH of solutions of strong and weak acids of same concentration.
    - Study the pH change in the titration of a strong base using a universal indicator.
2. Study the pH change by common-ion in case of weak acids and weak bases.

D. Chemical Equilibrium

Any one of the following experiments:

- Study the shift in equilibrium between ferric ions and thiocyanate ions by increasing/decreasing the concentration of either of the ions.
- Study the shift in equilibrium between $[Co(H_2O)_6]^{2+}$ and chloride ions by changing the concentration of either of the ions.

E. Quantitative Estimation

1. Using a mechanical balance/electronic balance.
2. Preparation of standard solution of Oxalic acid.
3. Determination of strength of a given solution of Sodium hydroxide by titrating it against standard solution of Oxalic acid.
4. Preparation of standard solution of Sodium carbonate.
5. Determination of strength of a given solution of hydrochloric acid by titrating it against standard Sodium Carbonate solution.

F. Qualitative Analysis

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

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

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

(Note: Insoluble salts excluded)

2. Detection of -Nitrogen, Sulphur, Chlorine in organic compounds.

PROJECTS

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

A few suggested Projects

a) Checking the bacterial contamination in drinking water by testing sulphide ion

b) Study of the methods of purification of water

c) Testing the hardness, presence of Iron, Fluoride, Chloride, etc., depending upon the regional variation in drinking water and study of causes of presence of these ions above permissible limit (if any).

d) Investigation of the foaming capacity of different washing soaps and the effect of addition of Sodium carbonate on it

e) Study the acidity of different samples of tea leaves.

f) Determination of the rate of evaporation of different liquids

g) Study the effect of acids and bases on the tensile strength of fibers.

h) Study of acidity of fruit and vegetable juices.

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

Practical Examination for Visually Challenged Students Class XI

Note: *Same Evaluation scheme and general guidelines for visually challenged students as given for Class XII may be followed.*

List of apparatus for identification for assessment in practicals (All experiments)

Beaker, tripod stand, wire gauze, glass rod, funnel, filter paper, Bunsen burner, test tube, test tube stands, dropper, test tube holder, ignition tube, china dish, tongs, standard flask, pipette, burette, conical flask, clamp stand, dropper, wash bottle

- Odor detection in qualitative analysis.
- Procedure/Setup of the apparatus.

List of Experiments

A. Characterization and Purification of Chemical Substances

Crystallization of an impure sample of any one of the following:
copper sulphate, benzoic acid.

B. Experiments based on pH

1. Determination of pH of some solutions obtained from fruit juices, solutions of known and varied concentrations of acids, bases and salts using pH paper.
2. Comparing the pH of solutions of strong and weak acids of same concentration.

C. Chemical Equilibrium

1. Study the shift in equilibrium between ferric ions and thiocyanate ions by increasing/decreasing the concentration of either ions.
2. Study the shift in equilibrium between $[Co(H_2O)_6]^{2+}$ and chloride ions by changing the concentration of either of the ions.

D. Quantitative estimation

1. Preparation of standard solution of oxalic acid.

2. Determination of molarity of a given solution of sodium hydroxide by titrating it against standard solution of oxalic acid.

E. Qualitative Analysis

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

   Cations - NH_4^+

   Anions: CO_3^{2-},S^{2-} , SO_3^{2-}, , Cl^-, CH_3COO^-

   (Note: insoluble salts excluded)

2. Detection of Nitrogen in the given organic compound.
3. Detection of Halogen in the given organic compound.

Note: *The above practical may be carried out in an experiential manner rather than recording observations.*

Prescribed Books:

1. Chemistry Part – I, Class-XI, Published by NCERT.
2. Chemistry Part – II, Class-XI, Published by NCERT.
3. Manual of Microscale Chemistry laboratory kit.

Links for NCERT textbooks:

1. **https://ncert.nic.in/textbook.php?kech1=0-6**
2. **https://ncert.nic.in/textbook.php?kech2=0-3**
3. **https://ncert.nic.in/division/dek/pdf/Manual_01.pdf**

COURSE STRUCTURE
CLASS XII
THEORY

Time: 3 Hours **Total Marks: 70**

S. No.	Title	Marks
1	Solutions	7
2	Electrochemistry	9
3	Chemical Kinetics	7
4	d -and f -Block Elements	7
5	Coordination Compounds	7
6	Haloalkanes and Haloarenes	6
7	Alcohols, Phenols and Ethers	6
8	Aldehydes, Ketones and Carboxylic Acids	8
9	Amines	6
10	Biomolecules	7
	Total	**70**

Unit 1: 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 vapor 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 2: 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 3: 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 4: 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 $KMnO_4$.

Lanthanides - Electronic configuration, oxidation states, chemical reactivity and lanthanide contraction and its consequences.

Actinides - Electronic configuration, oxidation states and comparison with lanthanides

Unit 5: 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 6: 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 monosubstituted compounds only).
Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

Unit 7: 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 8: 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 9: Amines

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 10: Biomolecules

Carbohydrates - Classification (aldoses and ketoses), monosaccahrides (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.

PRACTICAL

Evaluation Scheme for Examination	**Marks**
Volumetric Analysis	08
Salt Analysis	08
Content Based Experiment	06
Project Work	04
Class record and viva	04
Total	**30**

PRACTICAL SYLLABUS

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

A. Surface Chemistry

1. Preparation of one lyophilic and one lyophobic sol

Lyophilic sol - starch, egg albumin and gum

Lyophobic sol – aluminum hydroxide, ferric hydroxide, arsenous sulphide.

2. Dialysis of sol-prepared in (a) above.
3. Study of the role of emulsifying agents in stabilizing the emulsion of different oils.

B. Chemical Kinetics

1. Effect of concentration and temperature on the rate of reaction between Sodium Thiosulphate and Hydrochloric acid.
2. Study of reaction rates of any one of the following:
   - Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentration of Iodide ions.
   - Reaction between Potassium Iodate, (KIO_3) and Sodium Sulphate: (Na_2SO_3) using starch solution as indicator (clock reaction).

C. Thermochemistry

Any one of the following experiments

- Enthalpy of dissolution of Copper Sulphate or Potassium Nitrate.
- Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH).
- Determination of enthalpy 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

1. Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rf values.
2. 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

1. Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum.
2. Preparation of Potassium Ferric Oxalate.

G. Preparation of Organic Compounds

Preparation of any one of the following compounds

1. Acetanilide

2. Di -benzalAcetone
3. p-Nitroacetanilide
4. 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 foodstuffs.

J. Determination of concentration/ molarity of KMnO4 solution by titrating it against a standard solution of:

1. Oxalic acid,
2. Ferrous Ammonium Sulphate

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

K. Qualitative analysis

Determination of one anion and one cation in a given salt

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

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

(Note: Insoluble salts excluded)

PROJECTS

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

A few suggested Projects

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

b) Study of quantity of casein present in different samples of milk.

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

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

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

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

g) Extraction of essential oils present in Saunf (aniseed), Ajwain (carom), Illaichi (cardamom).

h) Study of common food adulterants in fat, oil, butter, sugar, turmeric power, chili powder and pepper.

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

Practical Examination for Visually Challenged Learners Classes XI and XII

Evaluation Scheme	**Marks**
Identification/Familiarity with the apparatus	5
Written test (based on given/prescribed practical's)	10
Practical Record	5
Viva	10
Total	**30**

General Guidelines

- The practical examination will be of two-hour duration.
- A separate list of ten experiments is included here.
- The written examination in practicals for these students will be conducted at the time of practical examination of all other students.
- The written test will be of 30 minutes' duration.
- The question paper given to the students should be legibly typed. It should contain a total of 15 practical skill based very short answer type questions. A student would be required to answer any 10 questions.
- A writer may be allowed to such students as per CBSE examination rules.
- All questions included in the question papers should be related to the listed practicals
- Every question should require about two minutes to be answered.
- These students are also required to maintain a practical file. A student is expected to record at least five of the listed experiments as per the specific instructions for each subject. These practicals should be duly checked and signed by the internal examiner.
- The format of writing any experiment in the practical file should include aim, apparatus required, simple theory, procedure, related practical skills, precautions etc.
- Questions may be generated jointly by the external/internal examiners and used

for assessment.

- The viva questions may include questions based on basic theory/principle/concept, apparatus/materials/ chemicals required, procedure, precautions, sources of error etc.

List of apparatus for identification/familiarity for assessment in practical (All experiments)

Beaker, glass rod, tripod stand, wire gauze, Bunsen burner, Whatman filter paper, gas jar, capillary tube, pestle and mortar, test tubes, tongs, test tube holder, test tube stand, burette, pipette, conical flask, standard flask, clamp stand, funnel, filter paper

Hands-on Assessment

- Identification/familiarity with the apparatus
- Odour detection in qualitative analysis

List of Experiments

The experiments have been divided into two sections: Section A and Section B. The experiments mentioned in Section B are mandatory.

SECTION A

A. Surface Chemistry

1. Preparation of one lyophilic and one lyophobic sol
   i. Lyophilic sol - starch, egg albumin and gum
   ii. Lyophobic sol – Ferric hydroxide

B. Chromatography

Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rf values (distance values may be provided).

C. Tests for the functional groups present in organic compounds

1. Alcoholic and Carboxylic groups
2. Aldehyde and Kenotic groups

D. Characteristic tests of carbohydrates and proteins in the given foodstuffs.

E. Preparation of Inorganic Compounds- Potash Alum

SECTION B (Mandatory)

F. Quantitative analysis

1. (a) Preparation of a given volume of the standard solution of Oxalic acid.

   (b) Determination of molarity of $KMnO_4$ solution by titrating it against a standard solution of Oxalic acid.

2. The above exercise [F 1 (a) and (b)] to be conducted using Ferrous ammonium sulphate (Mohr's salt)

G. Qualitative Analysis

Determination of one anion and one cation in a given salt

Cation - $\boldsymbol{NH_4^+}$

Anions: $\boldsymbol{CO_3^{2-}}$**,**$\boldsymbol{S^{2-}}$ **,** $\boldsymbol{SO_3^{2-}}$**, , ** $\boldsymbol{Cl^-}$**,** $\boldsymbol{CH_3COO^-}$

(Note: insoluble salts excluded)

Note: *The above practical may be carried out in an experiential manner rather than recording observations.*

Prescribed Books:

1. Chemistry Part – I, Class-XII, Published by NCERT.
2. Chemistry Part – II, Class-XII, Published by NCERT.
3. Manual of Microscale Chemistry laboratory kit.

Links for NCERT textbooks:

1. **https://ncert.nic.in/textbook.php?lech1=0-5**
2. **https://ncert.nic.in/textbook.php?lech2=0-5**
3. **https://ncert.nic.in/division/dek/pdf/Manual_01.pdf**

QUESTION PAPER DESIGN CLASSES XI & XII

S.No	Domains	Total Marks	%
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.	28	40
2	**Applying:** Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	21	30
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.	21	30

1. No chapter wise weightage is provided, however, care to be taken to cover all the chapters.
2. Suitable internal variations may be made for generating various templates.
3. There will be no overall choice in the question paper.
4. However, 33% internal choices will be given in all the sections.

ECONOMICS (Subject Code 030)
Class XI-XII (2025-26)

Rationale

Economics is one of the social sciences, which has great influence on every human being. As economic life and the economy go through changes, the need to ground education in children's own experience becomes essential. While doing so, it is imperative to provide them opportunities to acquire analytical skills to observe and understand the economic realities.

At senior secondary stage, the learners are in a position to understand abstract ideas, exercise the power of thinking and to develop their own perception. It is at this stage, the learners are exposed to the rigour of the discipline of economics in a systematic way.

The economics courses are introduced in such a way that in the initial stage, the learners are introduced to the economic realities that the nation is facing today along with some basic statistical tools to understand these broader economic realities. In the later stage, the learners are introduced to economics as a theory of abstraction.

The economics courses also contain many projects and activities. These will provide opportunities for the learners to explore various economic issues both from their day-to-day life and also from issues, which are broader and invisible in nature. The academic skills that they learn in these courses would help to develop the projects and activities. The syllabus is also expected to provide opportunities to use information and communication technologies to facilitate their learning process.

Objectives:

- Understanding of some basic economic concepts and development of economic reasoning which the learners can apply in their day-to-day life as citizens, workers and consumers.
- Realisation of learners' role in nation building and sensitivity to the economic issues that the nation is facing today.
- Equipment with basic tools of economics and statistics to analyse economic issues. This is pertinent for even those who may not pursue this course beyond senior secondary stage.
- Development of understanding that there can be more than one view on any economic issue and necessary skills to argue logically with reasoning.

ECONOMICS (Subject Code 030)
CLASS – XI (2025-26)

Theory: 80 Marks **3 Hours**
Project: 20 Marks

Units		Marks
Part A	**Statistics for Economics**	
	Introduction	15
	Collection, Organisation and Presentation of Data	
	Statistical Tools and Interpretation	25
		40
Part B	**Introductory Microeconomics**	
	Introduction	04
	Consumer's Equilibrium and Demand	14
	Producer Behaviour and Supply	14
	Forms of Market and Price Determination under perfect competition with simple applications	08
		40
Part C	**Project Work**	**20**

Part A: Statistics for Economics

In this course, the learners are expected to acquire skills in collection, organisation and presentation of quantitative and qualitative information pertaining to various simple economic aspects systematically. It also intends to provide some basic statistical tools to analyse, and interpret any economic information and draw appropriate inferences. In this process, the learners are also expected to understand the behaviour of various economic data.

Unit 1: Introduction

What is Economics?

Meaning, scope, functions and importance of statistics in Economics

Unit 2: Collection, Organisation and Presentation of data

Collection of data - sources of data - primary and secondary; how basic data is collected with concepts of Sampling; methods of collecting data; some important sources of secondary data: Census of India and National Sample Survey Organisation.

Organisation of Data: Meaning and types of variables; Frequency Distribution.

Presentation of Data: Tabular Presentation and Diagrammatic Presentation of Data: (i) Geometric forms (bar diagrams and pie diagrams), (ii) Frequency diagrams (histogram, polygon and Ogive) and (iii) Arithmetic line graphs (time series graph).

Unit 3: Statistical Tools and Interpretation

For all the numerical problems and solutions, the appropriate economic interpretation may be attempted. This means, the students need to solve the problems and provide interpretation for the results derived.

Measures of Central Tendency- Arithmetic mean, Median and Mode

Correlation – meaning and properties, scatter diagram; measures of correlation - Karl Pearson's method (two variables ungrouped data) Spearman's rank correlation (Non-Repeated Ranks and Repeated Ranks).

Introduction to Index Numbers - meaning, types - Wholesale Price Index, Consumer Price Index and index of industrial production, uses of index numbers; Inflation and Index Numbers, Simple Aggregative Method.

Part B: Introductory Microeconomics

Unit 4: Introduction

Meaning of microeconomics and macroeconomics; positive and normative economics

What is an economy? Central problems of an economy: what, how and for whom to produce; concepts of Production Possibility Frontier and Opportunity Cost.

Unit 5: Consumer's Equilibrium and Demand

Consumer's equilibrium - meaning of Utility, Marginal Utility, Law of Diminishing Marginal Utility, conditions of consumer's equilibrium using marginal utility analysis.

Indifference curve analysis of consumer's equilibrium-the consumer's budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) and conditions of consumer's equilibrium.

Demand, market demand, determinants of demand, demand schedule, demand curve and its slope, movement along and shifts in the demand curve; price elasticity of demand - factors affecting price elasticity of demand; measurement of price elasticity of demand – percentage-change method and total expenditure method.

Unit 6: Producer Behaviour and Supply

Meaning of Production Function – Short-Run and Long-Run

Total Product, Average Product and Marginal Product.

Returns to a Factor

Cost – Short run costs - Total Cost, Total Fixed Cost, Total Variable Cost; Average Cost; Average Fixed Cost, Average Variable Cost and Marginal Cost - meaning and their relationships.

Revenue – Total Revenue, Average Revenue and Marginal Revenue - meaning and their relationship.

Producer's Equilibrium - meaning and its conditions in terms of Marginal Revenue-Marginal Cost.

Supply, market supply, determinants of supply, supply schedule, supply curve and its slope, movements along and shifts in supply curve, price elasticity of supply; measurement of price elasticity of supply - percentage-change method.

Unit 7: Perfect Competition - Price Determination and simple applications.

Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply. (Short Run Only)

Simple Applications of Demand and Supply: Price ceiling, Price floor.

Part C: Project in Economics

Guidelines as given in Class XII curriculum

Suggested Question Paper Design
Economics (Subject Code 030)
Class XI (2025-26)
March 2026 Examination

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	32	40%
2	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	24	30%
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.	24	30%
	Total	**80**	**100%**

ECONOMICS (Subject Code 030)
CLASS - XII (2025-26)

Theory: 80 Marks **3 Hours**
Project: 20 Marks

Units		Marks
Part A	**Introductory Macroeconomics**	
	National Income and Related Aggregates	10
	Money and Banking	06
	Determination of Income and Employment	12
	Government Budget and the Economy	06
	Balance of Payments	06
		40
Part B	**Indian Economic Development**	
	Development Experience (1947-90) and Economic Reforms since 1991	12
	Current Challenges facing Indian Economy	20
	Development Experience of India – A Comparison with Neighbours	08
	Theory Paper (40+40 = 80 Marks)	**40**
Part C	**Project Work**	**20**

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: 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, Cash Reserve Ratio (CRR), Statutory Liquidity Ratio (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 and Deficit Budget – measures of government 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 flexible and fixed exchange rate.
Managed Floating exchange rate system

Part B: Indian Economic Development

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

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

Prescribed Books:
1. Statistics for Economics, NCERT
2. Indian Economic Development, NCERT
3. Introductory Microeconomics, NCERT
4. Macroeconomics, NCERT
5. Supplementary Reading Material in Economics, CBSE

Note: *The above publications are also available in Hindi Medium.*

Suggested Question Paper Design
Economics (Subject Code 030)
Class XII (2025-26)
March 2026 Examination

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	32	40%
2	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	24	30%
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.	24	30%
	Total	**80**	**100%**

Guidelines for Project Work in Economics (Class XI and 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

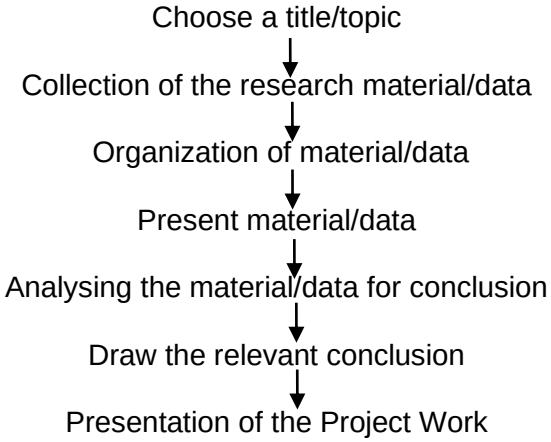
Role of the teacher:

The teacher plays a critical role in developing thinking skills of the learners. A teacher should:

- help each learner select the topic based on recently published extracts from the news media, government policies, RBI bulletin, NITI Aayog reports, IMF/World Bank reports etc., after detailed discussions and deliberations of the topic
- play the role of a facilitator and supervisor to monitor the project work of the learner through periodic discussions
- guide the research work in terms of sources for the relevant data
- educate learner about plagiarism and the importance of quoting the source of the information to ensure authenticity of research work
- prepare the learner for the presentation of the project work
- arrange a presentation of the project file

Scope of the project:

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



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:

Class XI	
• Effect on PPC due to various government policies	• Invisible Hand (Adam Smith)
• Opportunity Cost as an Economic Tool (taking real life situations)	• Effect of Price Change on a Substitute Good (taking prices from real life visiting local market)
• Effect on Equilibrium Prices in Local Market (taking real life situation or recent news)	• Effect of Price Change on a Complementary Good (taking prices from real life visiting local market)
• Solar Energy, a Cost-Effective Comparison with Conventional Energy Sources	• Bumper Production- Boon or Bane for the Farmer
• Any other newspaper article and its evaluation on basis of economic principles	• **Any other topic**

Class XII	
• Micro and Small Scale Industries	• Food Supply Channel in India
• Contemporary Employment situation in India	• Disinvestment policy of the government
• Goods and Services Tax Act and its Impact on GDP	• Health Expenditure (of any state)
• Human Development Index	• Inclusive Growth Strategy
• Self-help group	• Trends in Credit availability in India
• Monetary Policy Committee and its functions	• Role of RBI in Control of Credit
• Government Budget & its Components	• Trends in budgetary condition of India
• Exchange Rate determination – Methods and Techniques	• Currency War – reasons and repercussions
• Livestock – Backbone of Rural India	• Alternate fuel – types and importance
• Sarva Shiksha Abhiyan – Cost Ratio Benefits	• Golden Quadrilateral- Cost ratio benefit
• Minimum Support Prices	• Relation between Stock Price Index and Economic Health of a Nation
• Waste Management in India – Need of the hour	• Minimum Wage Rate – Approach and Application
• Digital India- Step towards the future	• Rain Water Harvesting – A solution to water crisis
• Vertical Farming – An alternate way	• Silk Route- Revival of the past
• Make in India – The way ahead	• Bumper Production- Boon or Bane for the farmer
• Rise of Concrete Jungle- Trend Analysis	• Organic Farming – Back to the Nature
• *Aatmanirbhar* Bharat	• e-Rupee (e- ₹)
• Sri Lanka's Economic Crisis	• Sustainable Development Goals (SDG's)
• Environmental Crisis	• Comparative Study of Economies (Maximum three economies)
• New Education Policy (NEP) 2020: A Promise for a New Education System	• G-20: Inclusive and Action Oriented
• Amrit Kaal: Empowered and Inclusive Economy	• Cashless Economy
• Any other newspaper article and its evaluation on basis of economic principles	• **Any other topic**

ENGLISH CORE

Subject Code-301

Classes-XI- XII (2025-26)

Background

Students are expected to have acquired a reasonable degree of language proficiency in English Language by the time they come to class XI, and the course aims, essentially, at promoting the higher-order language skills.

For a large number of students, the higher secondary stage will be a preparation for the university, where a fairly high degree of proficiency in English may be required. Additionally, for another large group, the higher secondary stage may be a preparation for entry into the professional domain. The Core Course caters to both groups by promoting the language skills required for academic study as well as the language skills required for the workplace.

Competencies to be focused on:

The general objectives at this stage are to:

- listen and comprehend live as well as recorded oral presentations on a variety of topics
- develop greater confidence and proficiency in the use of language skills necessary for social and academic purpose to participate in group discussions and interviews, by making short oral presentation on given topics
- perceive the overall meaning and organisation of the text (i.e., correlation of the vital portions of the text)
- identify the central/main point and supporting details, etc., to build communicative competence in various lexicons of English
- promote advanced language skills with an aim to develop the skills of reasoning, drawing inferences, etc. through meaningful activities
- translate texts from mother tongue(s) into English and vice versa
- develop ability and acquire knowledge required in order to engage in independent reflection and enquiry
- read and comprehend extended texts (prescribed and non-prescribed) in the following genres: science fiction, drama, poetry, biography, autobiography, travel and sports literature, etc.
- text-based writing (i.e., writing in response to questions or tasks based on prescribed or unseen texts), understand and respond to lectures, speeches, etc.
- write expository / argumentative essays, explaining or developing a topic, arguing a case, etc, write formal/informal letters and applications for different purposes

- make use of contextual clues to infer meanings of unfamiliar vocabulary
- select, compile and collate information for an oral presentation
- produce unified paragraphs with adequate details and support
- use grammatical structures accurately and appropriately
- write items related to the workplace (minutes, memoranda, notices, summaries, reports etc.
- filling up of forms, preparing CV, e-mail messages., making notes from reference materials, recorded talks etc.

The core course should draw upon the language items suggested for class IX-X and delve deeper into their usage and functions. Particular attention may, however, be given to the following areas of grammar:

- The use of passive forms in scientific and innovative writings.
- Convert one kind of sentence/clause into a different kind of structure as well as other items to exemplify stylistic variations in different discourses modal auxiliaries- uses based on semantic considerations.

A. Specific Objectives of Reading

Students are expected to develop the following study skills:

- skim for main ideas and scan for details
- refer to dictionaries, encyclopedia, thesaurus and academic reference material in any format
- select and extract relevant information, using reading skills of skimming and scanning
- understand the writer's purpose and tone
- comprehend the difference between the literal and the figurative
- differentiate between claims and realities, facts and opinions, form business opinions on the basis of latest trends available
- comprehend technical language as required in computer related fields, arrive at personal conclusion and logically comment on a given text.
- Specifically develop the ability to be original and creative in interpreting opinion, develop the ability to be logically persuasive in defending one's opinion and making notes based on a text.
- recognize multilingual nature of Indian society by reading different genres.

Develop literary skills as enumerated below:

- respond to literary texts
- appreciate and analyse special features of languages that differentiate literary texts from non-literary ones, explore and evaluate features of character, plot, setting, etc.
- understand and appreciate the oral, mobile and visual elements of drama. Identify the elements of style such as humour, pathos, satire and irony, etc.
- make notes from various resources for the purpose of developing the extracted ideas into sustained pieces of writing

B. Listening and Speaking

Speaking needs a very strong emphasis and is an important objective leading to professional competence. Hence, testing of oral skills must be made an important component of the overall testing pattern. To this end, speaking and listening skills are overtly built into the material to guide the teachers in actualization of the skills.

Specific Objectives of Listening & Speaking

Students are expected to develop the ability to:

- take organized notes on lectures, talks and listening passages
- listen to news bulletins and to develop the ability to discuss informally a wide ranging issues like current national and international affairs, sports, business, etc.
- respond in interviews and to participate in formal group discussions.
- make enquiries meaningfully and adequately and to respond to enquiries for the purpose of travelling within the country and abroad.
- listen to business news and to be able to extract relevant important information.
- to develop public speaking skills.

C. Specific Objectives of Writing

The students will be able to:

- write letters to friends, relatives, etc. to write business and official letters.
- open accounts in post offices and banks. To fill in railway/airline reservation forms both online and offline.
- draft notices, advertisements and design posters effectively and appropriately
- write on various issues to institutions seeking relevant information, lodge complaints, express gratitude or render apology.
- write applications, fill in application forms, prepare a personal bio-data for admission into colleges, universities, entrance tests and jobs.
- write informal reports as part of personal letters on functions, programmes and activities held in school (morning assembly, annual day, sports day, etc.)
- write formal reports for school magazines/events/processes/ or in local newspapers about events or occasions.
- express opinions, facts, arguments in the form of speech or debates, using a variety of accurate sentence structures
- draft papers to be presented in symposia.
- take down notes from talks and lectures.
- write examination answers according to the requirement of various subjects.
- summarise a text.

Note: The creative writing section shall assess the prescribed competencies for writing skills, irrespective of any word limit.

D. More About Reading

Inculcating good reading habits in children has always been a concern for all stakeholders in education. The purpose is to create independent thinking individuals with the ability to not only create their own knowledge but also critically interpret, analyse and evaluate it with objectivity and fairness. This will also help students in learning and acquiring better language skills.

Creating learners for the 21st century involves making them independent learners who can learn, unlearn and relearn. If our children are in the habit of reading, they will learn to reinvent themselves and deal with the many challenges that lie ahead of them.

Reading is not merely decoding information or pronouncing words correctly. It is an interactive dialogue between the author and the reader in which the reader and the author share their experiences and knowledge with each other. Good readers are critical readers with an ability to arrive at a deeper understanding of not only the world presented in the book but also of the real world around them.

Consequently, they become independent thinkers capable of taking their own decisions in life rationally. Hence, a few activities are suggested below which teachers may use as a part of the reading project.

- Short review / dramatization of the story
- Commentary on the characters
- Critical evaluation of the plot, storyline and characters
- Comparing and contrasting the characters within the story, with other characters in stories by the same author or by different authors
- Extrapolating about the story read or life of characters after the story ends defending characters' actions in the story
- Making an audio story out of the novel/text to be read aloud.
- Interacting with the author
- Holding a literature fest where students role-play as various characters to interact with each other
- Role playing as authors/poets/dramatists, to defend their works and characters
- Symposiums and seminars for introducing a book, an author, or a theme
- Creating graphic novels out of novel or short stories they read
- Dramatizing incidents from a novel or a story
- Creating their own stories
- Books of one genre to be read by the whole class.

Teachers may select books and e-books suitable to the age and level of the learners. Care ought to be taken to choose books that are appropriate in terms of language, theme and content and which do not hurt the sensibilities of a child.

Teachers may later suggest books from other languages by dealing with the same themes as an extended activity. The Project should lead to independent learning/reading skills and hence the chosen book should not be taught in class, but may be introduced through activities and be left for the students to read at their own pace. Teachers may, however, choose to assess a student's progress or success in reading the book by asking for verbal or written progress reports, looking at their diary entries, engaging in a discussion about the book, giving a short quiz or a work sheet about the book/short story. A befitting mode of assessment may be chosen by the teacher.

Methods and Techniques

The techniques used for teaching should promote habits of self-learning and reduce dependence on the teacher. In general, we recommend a multi-skill, learner-centred, activity based approach, of which there can be many variations.

- The core classroom activity is likely to be that of silent reading of prescribed/selected texts for comprehension, which can lead to other forms of language learning activities such as role-play, dramatization, group discussion, writing, etc., although many such activities could be carried out without the preliminary use of textual material.
- It is important that students be trained to read independently and intelligently, interacting actively with texts, with the use of reference materials (dictionary, thesaurus, etc.) where necessary.
- Some pre-reading activity will generally be required, and the course books should suggest suitable activities, leaving teachers free to devise other activities when desired. So also, the reading of texts should be followed by post reading activities.
- It is important to remember that students should be encouraged to interpret texts in different ways.
- Group and pair activities can be resorted to, when desired, although many useful language activities can be carried out individually. In general, teachers should encourage students to interact actively with texts and with each other.
- Oral activity (group discussion, etc.) should be encouraged.

ENGLISH CORE

CLASS –XI (2025-26)

Section A
Reading Skills-- 26 Marks

I. Reading Comprehension through Unseen Passages **10+8=18 Marks**

1. One unseen passage to assess comprehension, interpretation, analysis, inference and vocabulary. The passage may be factual, descriptive or literary.
2. One unseen case-based factual passage with verbal/visual inputs like statistical data, charts etc.to assess comprehension, interpretation, analysis, inference and evaluation.

Note*: The combined word limit for both the passages will be 600-750*. Multiple Choice Questions / Objective Type Questions will be asked.

3. Note Making and Summarization based on a passage of approximately 200-250 words.

i.	Note Making:		5 Marks
	• Title:	1	
	• Numbering and indenting:	1	
	• Key/glossary:	1	
	• Notes:	2	
ii.	Summary (up to 50 words):		3 Marks
	• Content:	2	
	• Expression:	1	

Section B
Grammar and Creative Writing Skills– 23 Marks

II. Grammar **7 Marks**

4. Questions on Gap filling (Tenses, Clauses)
5. Questions on re-ordering/transformation of sentences

(Total seven questions to be done out of the eight given).

III. Creative Writing Skills **16 Marks**

6. Short writing task – Classified Advertisements, up to 50 words. One out of the two given questions to be answered (3 Marks: Format: 1 / Content: 1 / Expression: 1)

7. Short writing task –Poster up to 50 words. One out of the two given questions to be answered. (3 marks: Format: 1 / Content: 1 / Expression: 1)

8. Long Writing task: Speech in 120-150 words based on verbal / visual cues related to contemporary / age-appropriate topic. One out of the two given questions to be answered. (5 Marks: Format: 1 / Content: 2 / Expression: 2)

9. Long Writing Task: Debate based on visual/verbal inputs in 120-150 words, thematically related to contemporary, topical issues. One out of the two given questions to be answered. (5 Marks: Format: 1 / Content: 2 / Expression: 2)

Section C
Literature Text Book and Supplementary Reading Text-31 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, interpretation, analysis, evaluation and extrapolation beyond the text.

10. One Poetry extract out of two, from the book Hornbill, to assess comprehension, interpretation, analysis, inference and appreciation. **3x1=3 Marks**

11. One Prose extract out of two, from the book Hornbill, to assess comprehension, interpretation, analysis, evaluation and appreciation. **3x1=3 Marks**

12. One prose extract out of two, from the book Snapshots, to assess comprehension, interpretation, analysis, inference and appreciation. **4x1=4 Marks**

13. Two Short answer type questions (one from Prose and one from Poetry, from the book Hornbill), outof four, to be answered in 40-50 words. Questions should elicit inferential responses through critical thinking. **3x2=6 Marks**

14. One Short answer type question, from the book Snapshots, to be answered in 40- 50 words. Questions should elicit inferential responses through critical thinking. One out of two questions to be done. **3x1=3 Marks**

15. One Long answer type question, from Prose/Poetry of Hornbill, 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 the student. Any one out of two questions to be done. **1x6=6 Marks**

16. One Long answer type question, based on the chapters from the book Snapshots, to be answered in 120-150 words, to assess global comprehension and extrapolation beyond the text. Questions to provide analytical and evaluative responses, using incidents, events, themes, as reference points. Any one out of two questions to be done. **1x6=6 Marks**

Prescribed Books

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

- The Portrait of a Lady (Prose)
- A Photograph (Poem)
- "We're Not Afraid to Die… if We Can Be Together
- Discovering Tut: The Saga Continues
- The Laburnum Top (Poem)
- The Voice of the Rain (Poem)
- Childhood (Poem)
- The Adventure
- Silk Road (Prose)
- Father to Son

2. **Snapshots:** Supplementary Reader published by National Council of Education Research and Training, New Delhi

- The Summer of the Beautiful White Horse (Prose)
- The Address (Prose)
- Mother's Day (Play)
- Birth (Prose)
- The Tale of Melon City

INTERNAL ASSESSMENT

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

ENGLISH CORE
QUESTION PAPER DESIGN
CLASS-XI (2025-26)

Section	Competencies	Total marks
Reading Skills	Conceptual understanding, decoding, Analyzing, inferring, interpreting, appreciating, literary, conventions and vocabulary, summarizing and using appropriate format/s.	26
Grammar and Creative Writing Skills	Conceptual Understanding, application of rules, Analysis, Reasoning, appropriate style and tone, using appropriate format and fluency, inference, analysis, evaluation and creativity.	23
Literature Text Book and Supplementary Reading Text	Recalling, reasoning, appreciating literary convention, inference, analysis, creativity with fluency, Critical Thinking.	31
	TOTAL	**80**
Internal Assessment	Assessment of Listening and Speaking Skills • Listening • Speaking	**10** 5+5
	• Project Work	**10**
	GRAND TOTAL	**100**

ENGLISH CORE
CLASS – XII (2025-26)

Section A
Reading Skills-22 Marks

I. Reading Comprehension through Unseen Passage **12+10 = 22 Marks**

1. One unseen passage to assess comprehension, interpretation, analysis and inference. Vocabulary assessment will also be assessed via inference. The passage may be factual, descriptive or literary.
2. One unseen **case-based factual** passage with verbal/visual inputs like statistical data, charts etc. to assess comprehension, interpretation, analysis, inference and evaluation.

Note: The combined word limit for both the passages will be 700-750 words.

Multiple Choice Questions / Objective Type Questions and Short Answer Type Questions (to be answered in 40-50 words) will be asked.

Section B

Creative Writing Skills-18 Marks

3. Notice, up to 50 words. One out of the two given questions to be answered. **(4 Marks**: Format :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 / 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

Literature Text Book and Supplementary Reading Text- 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, interpretation, analysis, evaluation and extrapolation beyond the text.

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

8. One Prose extract out of two, from the book **Vistas,** to assess comprehension, interpretation, analysis, evaluation and appreciation. **(4x1=4 Marks)**

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

10. Short answer type questions **(from Prose and Poetry from the book Flamingo**), to be answered in 40-50 words each. 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 questions, from **Prose (Vistas)**, to be answered in 40- 50 words each. Questions should elicit inferential responses through critical thinking. Any two out of three 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 the student. Any one out of two 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 analytical and evaluative responses using incidents, events, themes, as reference points. Any one out of two questions to be done. **(1x5=5 Marks)**

Prescribed Books

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

Prose

- The Last Lesson
- Lost Spring
- Deep Water
- The Rattrap
- Indigo
- Poets and Pancakes
- The Interview
- Going Places

Poetry

- My Mother at Sixty-Six
- Keeping Quiet
- A Thing of Beauty
- A Roadside Stand
- Aunt Jennifer's Tigers

2. **Vistas:** Supplementary Reader published by National Council of Education Research and Training, New Delhi
   - The Third Level
   - The Tiger King
   - Journey to the End of the Earth
   - The Enemy
   - On the Face of It
   - Memories of Childhood
     - The Cutting of My Long Hair
     - We Too are Human Beings

INTERNAL ASSESSMENT

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

ENGLISH CORE

QUESTION PAPER DESIGN
CLASS- XII (2025-26)

Section	Competencies	Total marks
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, appropriate style and tone, using appropriate format and fluency, inference, analysis, evaluation and creativity.	18
Literature Text Book and Supplementary Reading Text	Recalling, reasoning, critical thinking, appreciating literary convention, inference, analysis, creativity with fluency.	40
	TOTAL	**80**
Internal Assessment	Assessment of Listening and Speaking Skills • Listening • Speaking	**10** 5+5
	• Project Work	**10**
	GRAND TOTAL	**100**

Annexure I

GUIDELINES FOR INTERNAL ASSESSMENT

Classes XI-XII **Total Marks: 20**

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.

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)

SUGGESTIVE RUBRICS

	1	2	3	4	5
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 to initiate conversation • Needs constant prompting to take turns	• Interaction is adequately initiated and developed • Takes turn but needs some prompting	• Initiates & logically develops simple conversation on familiar topics • Takes turns appropriately
Fluency & Coherence	• Noticeably/ long pauses; rate of speech is slow	• Usually fluent; produces simple speech	• Is willing to speak at length, however repetition is	• Speaks without noticeable effort, with a little repetition	• Speaks fluently almost with no repetition & minimal

	• Frequent repetition and/or self-correction this is all right in informal conversation • Links only basic sentences; breakdown of coherence evident	fluently, but loses coherence in complex communication • Often hesitates and/or resorts to slow speech • Topics partly developed; not always concluded logically	noticeable • Hesitates and/or self corrects; occasionally loses coherence • Topics developed, but usually not logically concluded	• Demonstrates hesitation to find words or use correct grammatical structures and/or self-correction • Topics not fully developed to merit.	hesitation Develops topic fully & coherently
Pronunciation	• Frequent inaccurate pronunciation • Communication is severely affected	• Frequently unintelligible articulation • Frequent phonological errors • Major communication problems	• Largely correct pronunciation &clear articulation except occasional errors	• Mostly correct pronunciation & clear articulation • Is clearly understood most of the time;very few phonological errors	• Pronounces correctly & articulates clearly • Is always comprehensible • uses appropriate intonation
Vocabulary & Grammar	• Demonstrates almost no flexibility, and mostly struggles for appropriate words • Many Grammatical errors impacting communication	• Is able to communicate on some of the topics, with limited vocabulary. • Frequent errors, but self- corrects	• Is able to communicate on most of the topics, with limited vocabulary. A few grammatical errors	• Is able to communicate on most of the topics with appropriate vocabulary • Minor errors that do not hamper communication	• Is able to communicate on most of the topics using a wide range of appropriate vocabulary, using new words and expression • No grammatical errors

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.

II. Suggestions for Project Work:

- The Project can be inter-disciplinary in theme. The ideas/issues highlighted in the chapters/ poems/ drama given the prescribed books can also be developed in the form of a project. Students can also take up any relevant and age-appropriate theme.
- Such topics may be taken up that provide students with opportunities for listening and speaking. Some suggestions are as follows:

a) Interview-Based research:

Example:

- Students can choose a topic on which to do their research/ interview, e.g. a student can choose the topic: “Evolving food tastes in my neighbourhood” or “Corona pandemic and the fallout on families.” Read the available literature.
- The student then conducts interviews with a few neighbours on the topic. For an interview, with the help of the teacher, student will frame questions based on the preliminary research/background.
- The student will then write an essay/ write up / report etc. up to 1000 words on his/her research and submit it. He/ She will then take a viva on the research project. The project can be done in individually or in pairs/ groups

b) Students listen to podcasts/ interviews/radio or TV documentary on a topic and prepare a report countering or agreeing with the speakers. Write an 800 - 1000 words report and submit. Take a viva on the report.

c) Students create their own video/ Audio, after writing a script. Before they decide a format, the following elements can be taken into consideration:

- Theme/topic of the audio / video. Would the child like to pick a current issue or something artistic like theatre?
- What are the elements that need to be part of the script?
- Will the video/audio have an interview with one or more guests?

- Would they prefer to improvise while chatting with guests, or work from a script?
- What would be the duration?
- How would they present the script/report to the teacher? Can it be in the form of a narrative?

d) Students write**, direct and present a theatrical production, /One act play**

This will be a project which will be done as a team. It will involve planning, preparation and presentation. In short, various language skills will be utilised. There will be researching, discussion, writing the script, auditioning and ultimately producing the play. The project will end with a presentation and subsequently a viva. Teachers will be able to assess the core language skills of the students and help them grow as 21st century critical thinkers.

II. Instructions for the Teachers: -

1. Properly orient students about the Project work, as per the present Guidelines.
2. Facilitate the students in the selection of theme and topic.
3. Create a rubric for assessment and share with the students before they start so that they know the parameters of assessment:

- Teachers need to familiarize themselves with the method of assessing students with the rubric-- a table with different criteria and a grading scale.
- Choose the criteria on which you will grade students and list them along the left side of the page.
- Create an even number of columns along the top of the page. These columns will represent potential skill levels of the students.
- Assessing students on four/five criteria is an easy way to begin. For each criterion, define the ability that student would exhibit at each of the levels.
- The more detailed you make your criteria, the easier it will be to evaluate each student and define the level at which the student is presenting**.**
  {Sample Rubric is attached at the end for reference}

III. Parameters for Overall Assessment: -

1. Pronunciation:

- When evaluating the pronunciation of the students, teachers must listen for clearly articulated words, pronunciation of unusual spellings and intonation.
- Assess the students for the pronunciation skills and determine at which level the student needs improvement.

2. Vocabulary:

After noting their pronunciation levels, evaluate the students on the use of extensive and appropriate **vocabulary** during the viva. Check if students are using vocabulary appropriate to the context about which they are speaking.

3. **Accuracy**:

   Grammar has always been an important component of language skills. As students speak/ answer the questions during the viva, listen to their **grammatical structures**. *Are they competent enough to use multiple tenses? Is their word order correct in a given sentence?* An effective speaker will automatically use the correct grammatical structures of his language.

4. **Communication**:

   Assessing the **communication skills** of the students means looking at more than language. Look at how creatively students use the language to make their points understood. Students with a low level of vocabulary and grammar may still have good communication skills if they are able to make the teacher understand their point of view.

5. **Interaction**:

   - During the viva teachers need to ask the students some questions. Questions need to be based on the projects that have been suggested or chosen by the students.
   - It is imperative for a teacher to read the essays/project reports before they can be ready to ask questions.
   - Teachers need to observe how students answer the questions that are posed to them: *Are they able to understand and answer questions independently or can they answer only when the questions are translated into simpler words or repeated? Are they able to give appropriate responses in a conversation*?
   - These elements of **interaction** are necessary for clear and effective communication. A student with effective interaction skills will be able to answer questions with relative ease and follow the flow of conversation.

6. **Fluency**:

   - Fluency may be the easiest quality to judge in the students' speech: *How comfortable are they as they speak and express themselves? How easily do the words come out? Are there inappropriate pauses and gaps in the way a student speaks?*
   - **Fluency** is a judgement of this communication and is an important criterion when evaluating speaking skills. These criteria: pronunciation, vocabulary, accuracy, interaction and fluency are all the hallmarks of a student's overall speaking abilities.
   - Teachers must also remember that some **students may excel in one area and struggle in another**. Helping the students understand these issues will enable them to become effective speakers in future. Let your students know that you will be assessing them in these various areas when you evaluate their progress and encourage them to work and improve in these areas.
   - **Finally,** teachers must remember that a proper evaluation of the students will take into consideration **more than just one oral interview on the final ASL** project. Teachers must take note of a student's progress throughout the academic year.

IV. Project-Portfolio/ Project Report

The **Project-Portfolio/Project Report** is a compilation of the work that the students produce during the process of working on their ALS Project.

The Project-Portfolio may include the following:

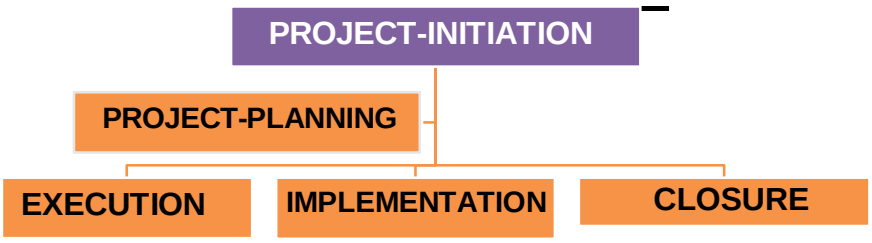
- Cover page, with title of project, school details/details of students.
- Statement of purpose/objectives/goals
- Certificate of completion under the guidance of the teacher.
- Students Action Plan for the completion of assigned tasks.
- Materials such as scripts for the theatre/role play, questionnaires for interview, written assignments, essays, survey-reports and other material evidence of learning progress and academic accomplishment.
- The 800-1000 words essay/Script/Report.
- Student/group reflections.
- If possible, Photographs that capture the positive learning experiences of the student(s).
- List of resources/bibliography

The following points must be kept for consideration while assessing the project portfolios:

- Quality of content of the project
- Accuracy of information
- Adherence to the specified timeline
- Content in respect of (spellings, grammar, punctuation)
- Clarity of thoughts and ideas
- Creativity
- Contributions by group members
- Knowledge and experience gained

V. Suggestive Timeline:

The FIVE Steps in Project Plan



Month	Objectives
Planning and Research for the Project Work **Preferably till November-December**	• Teachers plan a day to orient students about the ALS projects, details are shared with all stakeholders. • Students choose a project, select team members and develop project- plan. • Group meets (preferably online) and reports to the team leader about the progress: shortfalls and successes are detailed. • Team leader apprises teacher-mentor. • Students working individually or in pairs also update the teachers. • A logical, deliverable and practical plan is drafted by the team/ pair/individual. Goals/objectives are clearly defined for all. • Work is delegated to team members by the team leader. Students wishing to work alone develop their own plan of Action. • Detailed project schedules are shared with the teacher.
December- January	• Suggestions and improvements are shared by the teacher, wherever necessary. • Group members coordinate and keep communication channels open for interaction. • Gaps (if any) are filled with the right skill sets by the Team Leader/ individual student. • The final draft of the project portfolio/ report is prepared and submitted for evaluation.
January-February	• Students are assessed on their group/pair/individual presentations on allotted days. Final Viva is conducted by the External/Internal examiner.
February-March or as per the timelines given by the Board	• Marks are uploaded on the CBSE website.

SAMPLE RUBRIC FOR ALS Project Work (For Theatre/Role Play/Oral presentation/ Interview/ Podcast)

CATEGORY	1	2	3	4	5
TIME LIMIT	Presentation is less than or more than 5 minutes long	Presentation exceeded or less than specified time limit by 4 to 5 minutes	Presentation exceeded or less than specified time limit by 3 to 4 minutes	Presentation exceeded or less than specified time limit by 2 to 3 mins	Student/ group adhered to the given time limit
CONTENT/ SCRIPT/ QUESTIONNAIRE	Script is not related to topic or issue	Well written script/content shows little understanding of parts of topic	Well written script/content shows good understanding of parts of topic	Well written script/content shows a good understanding of subject topic	Well written script/content shows full understanding of subject topic
CREATIVITY	No props/ costumes/ stage presentation lack-lustre	Some work done, average stage set-up and costumes	Well organized presentation, could have improved	Logical use of props, reasonable work done, creative	Suitable props /effort seen/ considerable work done/ Creative and relevant costumes
PREPAREDNESS	Student/ group seems to be unprepared	Some visible preparedness but Rehearsal is lacking	Somewhat prepared, rehearsal is lacking	Good preparedness but need better rehearsal	Complete Preparedness /rehearsed presentation
CLARITY OF SPEECH	Lack of clarity in presentation many words mis-pronounced	Speaks clearly some words are mis-pronounced	Speaks clearly 90% of the time/ a few mis-pronounced words	Speaks clearly and distinctly 95% of time/ Few mis-pronounced words	Speaks clearly distinctly 95% of time/ fluency in pronunciation
USE OF PROPS (Theatre/Role Play)	Only 1/no relevant props used Very little use of facial expressions /body language, Does not generate much interest	1 to 2 relevant props used Little Use of facial expressions and body language	2 to 3 relevant props used Facial expressions and body language is used to try to generate some enthusiasm	3 to 4 relevant props used Facial expression and body language sometimes generate enthusiasm with the topic	4 to 5 relevant props used Facial expression and body language generate enthusiasm with the topic
PORTFOLIO-PRESENTATION	Inadequate & unimpressive	Somewhat suitable & convincing	Adequate & relevant	Interesting, enjoyable & relevant	Brilliant, creative& exceptional

हिंदी (आधार)
विषय कोड – 302
कक्षा 11वीं–12वीं (2025 -26)

दसवीं कक्षा तक हिंदी का अध्ययन करने वाला शिक्षार्थी समझते हुए पढ़ने व सुनने के साथ-साथ हिंदी में सोचने और उसे मौखिक एवं लिखित रूप में व्यक्त कर पाने की सामान्य दक्षता अर्जित कर चुका होता है। उच्चतर माध्यमिक स्तर पर आने के बाद इन सभी दक्षताओं को उस स्तर तक ले जाने की आवश्यकता होती है, जहाँ भाषा का प्रयोग भिन्न-भिन्न व्यवहार-क्षेत्रों की माँगों के अनुरूप किया जा सके। आधार पाठ्यक्रम, साहित्यिक बोध के साथ-साथ भाषायी दक्षता के विकास को ज्यादा महत्त्व देता है। यह पाठ्यक्रम उन शिक्षार्थियों के लिए उपयोगी साबित होगा, जो आगे विश्वविद्यालय में अध्ययन करते हुए हिंदी को एक विषय के रूप में पढ़ेंगे या विज्ञान/सामाजिक विज्ञान के किसी विषय को हिंदी माध्यम से पढ़ना चाहेंगे। यह उनके लिए भी उपयोगी साबित होगा, जो उच्चतर माध्यमिक स्तर की शिक्षा के बाद किसी तरह के रोजगार में लग जाएंगे। वहाँ कामकाजी हिंदी का आधारभूत अध्ययन काम आएगा। जिन शिक्षार्थियों की रुचि जनसंचार माध्यमों में होगी, उनके लिए यह पाठ्यक्रम एक आरंभिक पृष्ठभूमि निर्मित करेगा। इसके साथ ही यह पाठ्यक्रम सामान्य रूप से तरह-तरह के साहित्य के साथ शिक्षार्थियों के संबंध को सहज बनाएगा। शिक्षार्थी भाषिक अभिव्यक्ति के सूक्ष्म एवं जटिल रूपों से परिचित हो सकेंगे। वे यथार्थ को अपने विचारों में व्यवस्थित करने के साधन के तौर पर भाषा का अधिक सार्थक उपयोग कर पाएँगे और उनमें जीवन के प्रति मानवीय संवेदना एवं सम्यक दृष्टि का विकास हो सकेगा।

राष्ट्रीय शिक्षा नीति 2020 तथा केंद्रीय माध्यमिक शिक्षा बोर्ड द्वारा समय-समय पर दक्षता आधारित शिक्षा, कला समेकित अधिगम, अनुभवात्मक अधिगम को अपनाने की बात की गई है जो शिक्षार्थियों की प्रतिभा को उजागर करने, खेल-खेल में सीखने पर बल देने,आनंदपूर्ण ज्ञानार्जन और विद्यार्जन के विविध तरीकों को अपनाने तथा अनुभव के द्वारा सीखने पर बल देती है।

दक्षता आधारित शिक्षा से तात्पर्य है सीखने और मूल्यांकन करने का एक ऐसा दृष्टिकोण जो शिक्षार्थी के सीखने के प्रतिफल और विषय में विशेष दक्षता को प्राप्त करने पर बल देता है। दक्षता वह क्षमता, कौशल, ज्ञान और दृष्टिकोण है जो व्यक्ति को वास्तविक जीवन में कार्य करने में सहायता करती है। इससे शिक्षार्थी यह सीख सकते हैं कि ज्ञान और कौशल को किस प्रकार प्राप्त किया जाए तथा उन्हें वास्तविक जीवन की समस्याओं पर कैसे लागू किया जाए। प्रत्येक विषय, प्रत्येक पाठ को जीवनोपयोगी बनाकर प्रयोग में लाना ही दक्षता आधारित शिक्षा है। इसके लिए उच्च स्तरीय चिंतन कौशल पर विशेष बल देने की आवश्यकता है।

कला समेकित अधिगम को शिक्षण-अधिगम प्रक्रिया में सुनिश्चित करना अत्यधिक आवश्यक है। कला के संसार में कल्पना की एक अलग ही उड़ान होती है। कला एक व्यक्ति की रचनात्मक अभिव्यक्ति है। कला समेकित अधिगम से तात्पर्य है कला के विविध रूपों यथा संगीत, नृत्य, नाटक, कविता, रंगशाला, यात्रा, मूर्तिकला, आभूषण बनाना, गीत लिखना, नुक्कड़ नाटक, कोलाज, पोस्टर, कला प्रदर्शनी को शिक्षण अधिगम की प्रक्रिया का अभिन्न हिस्सा बनाना। किसी विषय को आरंभ करने के लिए आइस ब्रेकिंग गतिविधि के रूप में तथा सामंजस्यपूर्ण समझ पैदा करने के लिए अंतरविषयक या बहुविषयक परियोजनाओं के रूप में कला समेकित अधिगम का प्रयोग किया जाना चाहिए। इससे पाठ अधिक रोचक एवं ग्राह्य हो जाएगा।

अनुभवात्मक अधिगम या आनुभविक ज्ञानार्जन का उद्देश्य शैक्षिक वातावरण को शिक्षार्थी केंद्रित बनाने के साथ-साथ स्वयं मूल्यांकन करने, आलोचनात्मक रूप से सोचने, निर्णय लेने तथा ज्ञान का निर्माण कर उसमें पारंगत होने से है। यहाँ शिक्षक की भूमिका मार्गदर्शक की रहती है। ज्ञानार्जन अनुभव सहयोगात्मक अथवा

स्वतंत्र होता है और यह शिक्षार्थी को एक साथ कार्य करने तथा स्वयं के अनुभव द्वारा सीखने पर बल देता है। यह सिद्धांत और व्यवहार के बीच की दूरी को कम करता है।

इस पाठ्यक्रम के अध्ययन से:

1. शिक्षार्थी अपनी रुचि और आवश्यकता के अनुरूप साहित्य का गहन और विशेष अध्ययन जारी रख सकेंगे।
2. विश्वविद्यालय स्तर पर निर्धारित हिंदी-साहित्य से संबंधित पाठ्यक्रम के साथ सहज संबंध स्थापित कर सकेंगे।
3. लेखन-कौशल के व्यावहारिक और सृजनात्मक रूपों की अभिव्यक्ति में सक्षम हो सकेंगे।
4. रोज़गार के किसी भी क्षेत्र में जाने पर भाषा का प्रयोग प्रभावी ढंग से कर सकेंगे।
5. यह पाठ्यक्रम शिक्षार्थी को जनसंचार तथा प्रकाशन जैसे विभिन्न-क्षेत्रों में अपनी क्षमता व्यक्त करने का अवसर प्रदान कर सकता है।
6. शिक्षार्थी दो भिन्न पाठों की पाठ्यवस्तु पर चिंतन करके उनके मध्य की संबद्धता पर अपने विचार अभिव्यक्त करने में सक्षम हो सकेंगे।
7. शिक्षार्थी रटे-रटाए वाक्यों के स्थान पर अभिव्यक्तिपरक/ स्थिति आधारित/ उच्च चिंतन क्षमता के प्रश्नों पर सहजता से अपने विचार प्रकट कर सकेंगे।

उद्देश्य :

- संप्रेषण के माध्यम और विधाओं के लिए उपयुक्त भाषा प्रयोग की इतनी क्षमता उनमें आ चुकी होगी कि वे स्वयं इससे जुड़े उच्चतर पाठ्यक्रमों को समझ सकेंगे।
- भाषा के अंदर सक्रिय सत्ता संबंध की समझ।
- सृजनात्मक साहित्य की समझ और आलोचनात्मक दृष्टि का विकास।
- शिक्षार्थियों के भीतर सभी प्रकार की विविधताओं (धर्म, जाति, लिंग, क्षेत्र एवं भाषा संबंधी) के प्रति सकारात्मक एवं विवेकपूर्ण रवैये का विकास।
- पठन-सामग्री को भिन्न-भिन्न कोणों से अलग-अलग सामाजिक, सांस्कृतिक चिंताओं के परिप्रेक्ष्य में देखने का अभ्यास करवाना तथा आलोचनात्मक दृष्टि का विकास करना।
- शिक्षार्थी में स्तरीय साहित्य की समझ और उसका आनंद उठाने की क्षमता तथा साहित्य को श्रेष्ठ बनाने वाले तत्वों की संवेदना का विकास।
- विभिन्न ज्ञानानु शासनों के विमर्श की भाषा के रूप में हिंदी की विशिष्ट प्रकृति और उसकी क्षमताओं का बोध।
- कामकाजी हिंदी के उपयोग के कौशल का विकास।
- जनसंचार माध्यमों (प्रिंट और इलेक्ट्रॉनिक) में प्रयुक्त हिंदी की प्रकृति से परिचय और इन माध्यमों की आवश्यकता के अनुरूप मौखिक एवं लिखित अभिव्यक्ति का विकास।
- शिक्षार्थी में किसी भी अपरिचित विषय से संबंधित प्रासंगिक जानकारी के स्रोतों का अनुसंधान और व्यवस्थित ढंग से उनकी मौखिक और लिखित प्रस्तुति की क्षमता का विकास।

शिक्षण-युक्तियाँ

- कुछ बातें इस स्तर पर हिंदी शिक्षण के लक्ष्यों के संदर्भ में सामान्य रूप से कही जा सकती हैं। एक तो यह है कि कक्षा में दबाव एवं तनाव मुक्त माहौल होने की स्थिति में ये लक्ष्य हासिल किए जा सकते हैं। चूँकि इस पाठ्यक्रम में तैयारशुदा उत्तरों को कंठस्थ कर लेने की कोई अपेक्षा नहीं है, इसलिए विषय को समझने और उस समझ के आधार पर उत्तर को शब्दबद्ध करने की योग्यता विकसित करना शिक्षक का काम है। इस योग्यता के विकास के लिए कक्षा में शिक्षार्थियों और शिक्षिका के

बीच निर्बाध संवाद जरूरी है। शिक्षार्थी अपनी शंकाओं और उलझनों को जितना अधिक व्यक्त करेंगे, उनमे उतनी स्पष्टता आ पाएगी।

- भाषा की कक्षा से समाज में मौजूद विभिन्न प्रकार के द्वंद्वों पर बातचीत का मंच बनाना चाहिए। उदाहरण के लिए संविधान में किसी शब्द विशेष के प्रयोग पर निषेध को चर्चा का विषय बनाया जा सकता है। यह समझ ज़रूरी है कि शिक्षार्थियों को सिर्फ़ सकारात्मक पाठ देने से काम नहीं चलेगा बल्कि उन्हें समझाकर भाषिक यथार्थ का सीधे सामना करवाने वाले पाठों से परिचय होना जरूरी है।
- शंकाओं और उलझनों को रखने के अलावा भी कक्षा में शिक्षार्थियों को अधिक-से-अधिक बोलने के लिए प्रेरित किया जाना जरूरी है। उन्हें यह अहसास कराया जाना चाहिए कि वे पठित सामग्री पर राय देने का अधिकार और ज्ञान रखते हैं। उनकी राय को प्राथमिकता देने और उसे बेहतर तरीके से पुनः प्रस्तुत करने की अध्यापकीय शैली यहाँ बहुत उपयोगी होगी।
- शिक्षार्थियों को संवाद में शामिल करने के लिए यह ज़रूरी होगा कि उन्हें एक नामहीन समूह न मानकर अलग-अलग व्यक्तियों के रूप में अहमियत दी जाए। शिक्षकों को अक्सर एक कुशल संयोजक की भूमिका में स्वयं देखना होगा, जो किसी भी इच्छुक व्यक्ति को संवाद का भागीदार बनने से वंचित नहीं रखते, उसके कच्चे-पक्के वक्तव्य को मानक भाषा-शैली में ढाल कर उसे एक आभा दे देते हैं और मौन को अभिव्यंजना मान बैठे लोगों को मुखर होने पर बाध्य कर देते हैं।
- अप्रत्याशित विषयों पर चिंतन तथा उसकी मौखिक व लिखित अभिव्यक्ति की योग्यता का विकास शिक्षकों के सचेत प्रयास से ही संभव है। इसके लिए शिक्षकों को एक निश्चित अंतराल पर नए-नए विषय प्रस्तावित कर उन पर लिखने तथा संभाषण करने के लिए पूरी कक्षा को प्रेरित करना होगा। यह अभ्यास ऐसा है, जिसमें विषयों की कोई सीमा तय नहीं की जा सकती। विषय की असीम संभावना के बीच शिक्षक यह सुनिश्चित कर सकते हैं कि उसके शिक्षार्थी किसी निबंध-संकलन या कुंजी से तैयारशुदा सामग्री उतार भर न ले। तैयार शुदा सामग्री के लोभ से, बाध्यतावश ही सही मुक्ति पाकर शिक्षार्थी नये तरीके से सोचने और उसे शब्दबद्ध करने के लिए तैयार होंगे। मौखिक अभिव्यक्ति पर भी विशेष ध्यान देने की ज़रूरत है, क्योंकि भविष्य में साक्षात्कार, संगोष्ठी जैसे मौकों पर यही योग्यता शिक्षार्थी के काम आती है। इसके अभ्यास के सिलसिले में शिक्षकों को उचित हावभाव, मानक उच्चारण, पॉज, बलाघात, हाजिरजवाबी इत्यादि पर खास बल देना होगा।
- काव्य की भाषा के मर्म से शिक्षार्थी का परिचय कराने के लिए ज़रूरी होगा कि किताबों में आए काव्यांशों की लयबद्ध प्रस्तुतियों के ऑडियो-वीडियो कैसेट तैयार किए जाएँ। अगर आसानी से कोई गायक/गायिका मिले तो कक्षा में मध्यकालीन साहित्य के शिक्षण में उससे मदद ली जानी चाहिए।
- एन सी ई आर टी, शिक्षा मंत्रालय के विभिन्न संगठनों तथा स्वतंत्र निर्माताओं द्वारा उपलब्ध कराए गए कार्यक्रम/ ई-सामग्री, वृत्तचित्रों और सिनेमा को शिक्षण सामग्री के तौर पर इस्तेमाल करने की ज़रूरत है। इनके प्रदर्शन के क्रम में इन पर लगातार बातचीत के ज़रिए सिनेमा के माध्यम से भाषा के प्रयोग की विशिष्टता की पहचान कराई जा सकती है और हिंदी की अलग-अलग छटा दिखाई जा सकती है। शिक्षार्थियों को स्तरीय परीक्षा करने को भी कहा जा सकता है।
- कक्षा में सिर्फ़ एक पाठ्यपुस्तक की उपस्थिति से बेहतर यह है कि शिक्षक के हाथ में तरह-तरह की पाठ्यसामग्री को शिक्षार्थी देख सकें और शिक्षक उनका कक्षा में अलग-अलग मौकों पर इस्तेमाल कर सके।
- भाषा लगातार ग्रहण करने की क्रिया में बनती है, इसे प्रदर्शित करने का एक तरीका यह भी है कि शिक्षक खुद यह सिखा सकें कि वे भी शब्दकोश, साहित्यकोश, संदर्भग्रंथ की लगातार मदद ले रहे हैं। इससे शिक्षार्थियों में इसका इस्तेमाल करने को लेकर तत्परता बढ़ेगी। अनुमान के आधार पर निकटतम अर्थ तक पहुँचकर संतुष्ट होने की जगह वे सही अर्थ की खोज करने के लिए प्रेरित होंगे। इससे शब्दों की अलग-अलग रंगत का पता चलेगा और उनमें संवेदनशीलता बढ़ेगी। वे शब्दों के बारीक अंतर के प्रति और सजग हो पाएँगे।

- कक्षा-अध्यापन के पूरक कार्य के रूप में सेमिनार, ट्यूटोरियल कार्य, समस्या-समाधान कार्य, समूहचर्चा, परियोजनाकार्य, स्वाध्याय आदि पर बल दिया जाना चाहिए। पाठ्यक्रम में जनसंचार माध्यमों से संबंधित अंशों को देखते हुए यह ज़रूरी है कि समय-समय पर इन माध्यमों से जुड़े व्यक्तियों और विशेषज्ञों को भी विद्यालय में बुलाया जाए तथा उनकी देख-रेख में कार्यशालाएँ आयोजित की जाएं।
- भिन्न क्षमता वाले शिक्षार्थियों के लिए उपयुक्त शिक्षण सामग्री का इस्तेमाल किया जाए तथा उन्हें किसी भी प्रकार से अन्य शिक्षार्थियों से कमतर या अलग न समझा जाए।
- कक्षा में शिक्षक को हर प्रकार की विविधताओं (लिंग जाति, धर्म, वर्ग आदि) के प्रति सकारात्मक और संवेदनशील वातावरण निर्मित करना चाहिए।

श्रवण तथा वाचन परीक्षा हेतु दिशा-निर्देश

श्रवण (सुनना) (5 अंक) : वर्णित या पठित सामग्री को सुनकर अर्थग्रहण करना, वार्तालाप करना, वाद-विवाद, भाषण, कविता पाठ आदि को सुनकर समझना, मूल्यांकन करना और अभिव्यक्ति के ढंग को समझना।

वाचन (बोलना) (5 अंक): भाषण, सस्वर कविता-पाठ, वार्तालाप और उसकी औपचारिकता, कार्यक्रम-प्रस्तुति, कथा-कहानी अथवा घटना सुनाना, परिचय देना, भावानुकूल संवाद-वाचन।

टिप्पणी: वार्तालाप की दक्षताओं का मूल्यांकन निरंतरता के आधार पर परीक्षा के समय ही होगा। निर्धारित 10 अंकों में से 5 श्रवण (सुनना) कौशल के मूल्यांकन के लिए और 5 वाचन (बोलना) कौशल के मूल्यांकन के लिए होंगे।

वाचन (बोलना) एवं श्रवण (सुनना) कौशल का मूल्यांकन:

- परीक्षक किसी प्रासंगिक विषय पर एक अनुच्छेद का स्पष्ट वाचन करेगा। अनुच्छेद तथ्यात्मक या सुझावात्मक हो सकता है। अनुच्छेद लगभग 250 शब्दों का होना चाहिए।

  या

  परीक्षक 2-3 मिनट का श्रव्य अंश (ऑडियो क्लिप) सुनवाएगा। अंश रोचक होना चाहिए। कथ्य /घटना पूर्ण एवं स्पष्ट होनी चाहिए। वाचक का उच्चारण शुद्ध, स्पष्ट एवं विराम चिह्नों के उचित प्रयोग सहित होना चाहिए।
- परीक्षार्थी ध्यानपूर्वक परीक्षक/ऑडियो क्लिप को सुनने के पश्चात परीक्षक द्वारा पूछे गए प्रश्नों का अपनी समझ से मौखिक उत्तर देंगे। (1x5 =5)
- किसी निर्धारित विषय पर बोलना : जिससे शिक्षार्थी अपने व्यक्तिगत अनुभवों का प्रत्यास्मरण कर सकें।
- कोई कहानी सुनाना या किसी घटना का वर्णन करना।
- परिचय देना।
  (स्व/ परिवार/ वातावरण/ वस्तु/ व्यक्ति/ पर्यावरण/ कवि /लेखक आदि)

परीक्षकों के लिए अनुदेश :-

- परीक्षण से पूर्व परीक्षार्थी को तैयारी के लिए कुछ समय दिया जाए।
- विवरणात्मक भाषा में वर्तमान काल का प्रयोग अपेक्षित है।
- निर्धारित विषय परीक्षार्थी के अनुभव-जगत के हों।
- जब परीक्षार्थी बोलना आरंभ करें तो परीक्षक कम से कम हस्तक्षेप करें।

कौशलों के अंतरण का मूल्यांकन

(इस बात का निश्चय करना कि क्या शिक्षार्थी में श्रवण और वाचन की निम्नलिखित योग्यताएँ हैं)

क्र.	श्रवण (सुनना)		वाचन (बोलना)
1	परिचित संदर्भों में प्रयुक्त शब्दों और पदों को समझने की सामान्य योग्यता है।	1	केवल अलग-अलग शब्दों और पदों के प्रयोग की योग्यता प्रदर्शित करता है।
2	छोटे सुसंबद्ध कथनों को परिचित संदर्भों में समझने की योग्यता है।	2	परिचित संदर्भों में केवल छोटे संबद्ध कथनों का सीमित शुद्धता से प्रयोग करता है।
3	परिचित या अपरिचित दोनों संदर्भों में कथित सूचना को स्पष्ट समझने की योग्यता है।	3	अपेक्षाकृत दीर्घ भाषण में जटिल कथनों के प्रयोग की योग्यता प्रदर्शित करता है।
4	दीर्घ कथनों की श्रृंखला को पर्याप्त शुद्धता से समझने के ढंग और निष्कर्ष निकाल सकने की योग्यता है।	4	अपरिचित स्थितियों में विचारों को तार्किक ढंग से संगठित कर धारा-प्रवाह रूप में प्रस्तुत करता है।
5	जटिल कथनों के विचार-बिंदुओं को समझने की योग्यता प्रदर्शित करने की क्षमता है।	5	उद्देश्य और श्रोता के लिए उपयुक्त शैली को अपना सकता है।

परियोजना कार्य - कुल अंक 10

विषय वस्तु - 5 अंक

भाषा एवं प्रस्तुति - 3 अंक

शोध एवं मौलिकता - 2 अंक

- हिन्दी भाषा और साहित्य से जुड़े विविध विषयों/ विधाओं / साहित्यकारों / समकालीन लेखन / साहित्यिक वादों / भाषा के तकनीकी पक्ष / प्रभाव / अनुप्रयोग / साहित्य के सामाजिक संदर्भो एवं जीवन मूल्य संबंधी प्रभावों आदि पर परियोजना कार्य दिए जाने चाहिए।
- सत्र के प्रारंभ में ही शिक्षार्थी को विषय चुनने का अवसर मिले ताकि उसे शोध, तैयारी और लेखन के लिए पर्याप्त समय मिल सके ।

परियोजना-कार्य

'परियोजना' शब्द योजना में 'परि' उपसर्ग लगने से बना है। 'परि' का अर्थ है 'पूर्णता' अर्थात ऐसी योजना जो अपने आप में पूर्ण हो परियोजना कहलाती है। किसी विशेष लक्ष्य की प्राप्ति हेतु जो योजना बनाई और कार्यान्वित की जाती है, उसे परियोजना कहते हैं। यह किसी समस्या के निदान या किसी विषय के तथ्यों को प्रकाशित करने के लिए तैयार की गई एक पूर्ण विचार योजना होती है।

राष्ट्रीय पाठ्यचर्चा की रूपरेखा, राष्ट्रीय शिक्षा नीति 2020 तथा केन्द्रीय माध्यमिक शिक्षा बोर्ड द्वारा समय-समय पर अनुभवात्मक अधिगम, आनंदपूर्ण अधिगम की बात कही गई है। उच्चतर माध्यमिक स्तर पर शिक्षार्थियों के लिए हिंदी का अध्ययन एक सृजनात्मक, साहित्यिक, सांस्कृतिक और विभिन्न प्रयुक्तियों की भाषा के रूप में प्रयोग करने और करवाने के लिए परियोजना कार्य अत्यंत महत्वपूर्ण व लाभदायक सिद्ध होता है।

परियोजना का महत्व

- व्यक्तिगत स्तर पर खोज, कार्यवाही और ग्यारहवीं - बारहवीं कक्षा के दौरान अर्जित ज्ञान और कौशल, विचारों आदि पर चिंतन का उपयोग ।

- सैद्धांतिक निर्माणों और तर्कों का उपयोग करके वास्तविक दुनिया के परिदृश्यों का विश्लेषण और मूल्यांकन
- एक स्वतंत्र और विस्तारित कार्य का निर्माण करने के लिए महत्वपूर्ण और रचनात्मक चिंतन, कौशल और क्षमताओं के अनुप्रयोग का प्रदर्शन
- उन विषयों पर कार्य करने का अवसर जिनमें शिक्षार्थियों की रुचि है।
- नए ज्ञान की ओर अग्रसर
- खोजी प्रवृत्ति में वृद्धि
- भाषा ज्ञान समृद्ध एवं व्यावहारिक
- समस्या समाधान की क्षमता का विकास

परियोजना कार्य निर्धारित करते समय ध्यान देने योग्य बातें

- परियोजना कार्य शिक्षार्थियों में योग्यता आधारित क्षमता को ध्यान में रखकर दिए जाएँ जिससे वे विषय के साथ जुड़ते हुए उसके व्यावहारिक पक्ष को समझ सकें। वर्तमान समय में उसकी प्रासंगिकता पर भी ध्यान दिया जाए।
- सत्र के प्रारम्भ में ही शिक्षार्थियों को विषय चुनने का अवसर मिले ताकि उसे शोध, तैयारी और लेखन के लिए पर्याप्त समय मिल सके।
- अध्यापिका/अध्यापक द्वारा कक्षा में परियोजना-कार्य को लेकर विस्तारपूर्वक चर्चा की जाए जिससे शिक्षार्थी उसके अर्थ, महत्व व प्रक्रिया को भली-भाँति समझने में सक्षम हो सकें ।
- हिंदी भाषा और साहित्य से जुड़े विविध विषयों/ विधाओं/ साहित्यकारों/ समकालीन लेखन/ भाषा के तकनीकी पक्ष/ प्रभाव/ अनुप्रयोग/ साहित्य के सामाजिक संदर्भों एवं जीवन-मूल्य संबंधी प्रभावों आदि पर परियोजना कार्य दिए जाने चाहिए।
- शिक्षार्थी को उसकी रुचि के अनुसार विषय का चयन करने के छूट दी जानी चाहिए तथा अध्यापक/ अध्यापिका को मार्गदर्शक के रूप में उसकी सहायता करनी चाहिए।
- परियोजना – कार्य करते समय निम्नलिखित आधार को अपनाया जा सकता है-
    1. प्रमाण – पत्र
    2. आभार ज्ञापन
    3. विषय-सूची
    4. उद्देश्य
    5. समस्या का बयान
    6. परिकल्पना
    7. प्रक्रिया (साक्ष्य संग्रह, साक्ष्य का विश्लेषण)
    8. प्रस्तुतीकरण (विषय का विस्तार)
    9. अध्ययन का परिणाम
    10. अध्ययन की सीमाएँ
    11. स्रोत
    12. अध्यापक टिप्पणी
- परियोजना – कार्य में शोध के दौरान सम्मिलित किए गए चित्रों और संदर्भों के विषय में उचित जानकारी दी जानी चाहिए। उनके स्रोत को अवश्य अंकित करना चाहिए।
- चित्र, रेखाचित्र, विज्ञापन, ग्राफ, विषय से संबंधित आँकड़े, विषय से संबंधित समाचार की कतरनें एकत्रित की जानी चाहिए।

- प्रमाणस्वरूप सम्मिलित किए गए आँकड़े, चित्र, विज्ञापन आदि के स्रोत अंकित करने के साथ-साथ समाचार-पत्र, पत्रिकाओं के नाम एवं दिनांक भी लिखना चाहिए।
- साहित्यकोश, संदर्भ-ग्रंथ, शब्दकोश की सहायता लेनी चाहिए।
- परियोजना-कार्य में शिक्षार्थियों के लिए अनेक संभावनाएँ हैं। उनके व्यक्तिगत विचार तथा उनकी कल्पना के विस्तृत संसार को अवश्य सम्मिलित किया जाए।

परियोजना – कार्य के कुछ विषय सुझावात्मक रूप में दिए जा रहे हैं।

भाषा और साहित्य से जुड़े विविध विषयों/ विधाओं/ साहित्यकारों/ समकालीन लेखन के आधार पर

- **हिंदी कविता में प्रकृति चित्रण (पाठ – उषा / बगुलों के पंख कविता)**
- विभिन्न कवियों की कविताओं का तुलनात्मक अध्ययन,
- भाषा शैली, विशेषताएँ
- वर्तमान के साथ प्रासंगिकता इत्यादि।
- **भारतीय ग्रामीण का जीवन (पाठ – पहलवान की ढोलक)**
    - आज़ादी से पहले, बाद में तथा वर्तमान में स्थिति
    - सुधार की आवश्यकताएँ
    - आपकी भूमिका/ योगदान/ सुझाव
- **समकालीन,सांस्कृतिक एवं साहित्यिक विषयों से संबंधित**
- भूमिका – क्या है, क्यों है आदि का विवरण
- विभिन्न देशों में प्रभाव
- भारत के साथ तुलनात्मक अध्ययन
- कारण और निवारण
- आपकी भूमिका/ योगदान/ सुझाव

उपर्युक्त विषय सुझाव के रूप में प्रस्तुत किए गए हैं। आप दिशानिर्देशों के आधार पर अन्य विषयों का चयन कर सकते हैं।

श्रवण कौशल एवं परियोजना कार्य का मूल्यांकन विद्यालय स्तर पर आंतरिक परीक्षक (विषय अध्यापक) द्वारा ही किया जाएगा।

हिंदी (आधार)
विषय कोड – 302
कक्षा 11वीं (2025 -26)
परीक्षा हेतु पाठ्यक्रम विनिर्देशन

- **प्रश्न -पत्र तीन खण्डों – खंड- क, ख और ग में होगा।**
- **खंड- क में अपठित बोध पर आधारित प्रश्न पूछे जाएँगे I सभी प्रश्नों के उत्तर देने होंगे।**
- **खंड- ख में अभिव्यक्ति और माध्यम पाठ्यपुस्तक के आधार पर प्रश्न पूछे जाएँगे। प्रश्नों में आंतरिक विकल्प दिए जाएँगे ।**
- **खंड- ग में आरोह भाग – 1 एवं वितान भाग – 1 पाठ्यपुस्तकों के आधार पर प्रश्न पूछे जाएँगे। प्रश्नों में आंतरिक विकल्प दिए जाएँगे ।**

भारांक-80 **निर्धारित समय - 03 घंटे**

वार्षिक परीक्षा हेतु भार विभाजन

	खंड-क (अपठित बोध)	18 अंक
1	01 अपठित गद्यांश (लगभग 250 शब्दों का) पर आधारित बोध, चिंतन, विश्लेषण पर बहुविकल्पीय प्रश्न, अतिलघूत्तरात्मक प्रश्न, लघूत्तरात्मक प्रश्न पूछे जाएँगे I (बहुविकल्पीय प्रश्न 01 अंक x 03 प्रश्न = 03 अंक, अतिलघूत्तरात्मक प्रश्न 01 अंक x 01 प्रश्न = 1 अंक, लघूत्तरात्मक प्रश्न 02 अंक x 3 प्रश्न = 6 अंक)	10 अंक
2	01 अपठित पद्यांश (लगभग 100 शब्दों का) पर आधारित बोध, सराहना, सौंदर्य, चिंतन, विश्लेषण आदि पर बहुविकल्पीय प्रश्न, अतिलघूत्तरात्मक प्रश्न, लघूत्तरात्मक प्रश्न पूछे जाएँगे I (बहुविकल्पीय प्रश्न 01 अंक x 03 प्रश्न = 03 अंक, अतिलघूत्तरात्मक प्रश्न 01 अंक x 01 प्रश्न = 01 अंक, लघूत्तरात्मक प्रश्न 02 अंक x 02 प्रश्न = 04 अंक)	08 अंक
	खंड- ख (अभिव्यक्ति और माध्यम पाठ्यपुस्तक के आधार पर) पाठ संख्या 1, 2, 9, 10, 14, 15 तथा 16 पर आधारित	22 अंक
3	दिए गए 03 अप्रत्याशित विषयों में से किसी 01 विषय पर **आधारित** लगभग 120 शब्दों में रचनात्मक लेखन (06 अंक x 01 प्रश्न)	06 अंक
4	औपचारिक पत्र लेखन। (विकल्प सहित) (05 अंक x 01 प्रश्न)	05 अंक
5	**पाठ संख्या 1, 2, 9, 10, 14, 15 तथा 16 पर आधारित** 04 प्रश्न (विकल्प सहित) (02 अंक x 04 प्रश्न= 8 अंक) (लगभग 40 शब्दों में), (03 अंक x 01 प्रश्न = 3 अंक) (लगभग 60 शब्दों में)	11 अंक

	खंड- ग (आरोह भाग – 1 एवं वितान भाग-1 पाठ्य पुस्तकों के आधार पर)	40 अंक
6	पठित काव्यांश पर आधारित 05 बहुविकल्पी प्रश्न (01 अंक x 05 प्रश्न)	05 अंक
7	काव्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 60 शब्दों में) (03 अंक x 02 प्रश्न)	06 अंक
8	काव्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 40 शब्दों में) (02 अंक x 02 प्रश्न)	04 अंक
9	पठित गद्यांश पर आधारित 05 बहुविकल्पी प्रश्न (01 अंक x 05 प्रश्न)	05 अंक
10	गद्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 60 शब्दों में) (03 अंक x 02 प्रश्न)	06 अंक
11	गद्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 40 शब्दों में) (02 अंक x 02 प्रश्न)	04 अंक
12	वितान के पाठों पर आधारित 03 में से 02 प्रश्नों के उत्तर (लगभग 60 शब्दों में) (05 अंक x 02 प्रश्न)	10 अंक
13	**(अ) श्रवण तथा वाचन** **(ब) परियोजना कार्य**	10+10 = 20 अंक
कुल अंक		**100** अंक

निर्धारित पाठ्यपुस्तकें :

1. **आरोह, भाग-1**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित
2. **वितान भाग–1**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित
3. **अभिव्यक्ति और माध्यम**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित

नोट – पाठ्यक्रम के निम्नलिखित पाठ हटा दिए गए हैं I

आरोह भाग - 1	काव्य खंड	• कबीर (पद 2) - संतो देखत जग बौराना • मीरा (पद 2) - पग घुंगरू बांधि मीरा नाची • रामनरेश त्रिपाठी - पथिक (पूरा पाठ) • सुमित्रानंदन पंत - वे आँखें (पूरा पाठ)
	गद्य खंड	• कृष्णनाथ - स्पीति में बारिश (पूरा पाठ) • सैयद हैदर रज़ा - आत्मा का ताप (पूरा पाठ)

हिंदी (आधार)
विषय कोड – 302
कक्षा 12वीं (2025 -26)
परीक्षा हेतु पाठ्यक्रम विनिर्देशन

- **प्रश्न -पत्र तीन खण्डों – खंड- क, ख और ग में होगा।**
- **खंड- क में अपठित बोध पर आधारित प्रश्न पूछे जाएँगे I सभी प्रश्नों के उत्तर देने होंगे।**
- **खंड- ख में अभिव्यक्ति और माध्यम पाठ्यपुस्तक के आधार पर प्रश्न पूछे जाएँगे। प्रश्नों में आंतरिक विकल्प दिए जाएँगे ।**
- **खंड- ग में आरोह भाग – 2 एवं वितान भाग – 2 पाठ्यपुस्तकों के आधार पर प्रश्न पूछे जाएँगे। प्रश्नों में आंतरिक विकल्प दिए जाएँगे ।**

भारांक-80 **निर्धारित समय - 03 घंटे**

वार्षिक परीक्षा हेतु भार विभाजन

	खंड-क (अपठित बोध)	18 अंक
1	01 अपठित गद्यांश (लगभग 250 शब्दों का) पर आधारित बोध, चिंतन, विश्लेषण पर बहुविकल्पीय प्रश्न, अतिलघूत्तरात्मक प्रश्न, लघूत्तरात्मक प्रश्न पूछे जाएँगे I (बहुविकल्पीय प्रश्न 01 अंक x 03 प्रश्न = 03 अंक, अतिलघूत्तरात्मक प्रश्न 01 अंक x 01 प्रश्न = 01 अंक, लघूत्तरात्मक प्रश्न 02 अंक x 03 प्रश्न = 06 अंक)	10 अंक
2	01 अपठित पद्यांश (लगभग 100 शब्दों का) पर आधारित बोध, सराहना, सौंदर्य, चिंतन, विश्लेषण आदि पर बहुविकल्पीय प्रश्न, अतिलघूत्तरात्मक प्रश्न लघूत्तरात्मक प्रश्न पूछे जाएँगे I (बहुविकल्पीय प्रश्न 01 अंक x 03 प्रश्न = 03 अंक, अतिलघूत्तरात्मक प्रश्न 01 अंक x 01 प्रश्न = 01 अंक, लघूत्तरात्मक प्रश्न 02 अंक x 02 प्रश्न = 04 अंक)	08 अंक
	खंड- ख (अभिव्यक्ति और माध्यम पाठ्यपुस्तक के आधार पर) पाठ संख्या 3, 4, 5, 11, 12 तथा 13 पर आधारित	22 अंक
3	दिए गए 03 अप्रत्याशित विषयों में से किसी 01 विषय पर **आधारित** लगभग 120 शब्दों में रचनात्मक लेखन (06 अंक x 01 प्रश्न)	06 अंक
4	**पाठ संख्या 3, 4, 5, 11 तथा 13 पर आधारित** (02 अंक x 04 प्रश्न= 08 अंक) (लगभग 40 शब्दों में), (04 अंक x 02 प्रश्न = 08 अंक) (लगभग 80 शब्दों में) (विकल्प सहित)	16 अंक
	खंड- ग (आरोह भाग – 2 एवं वितान भाग-2 पाठ्यपुस्तकों के आधार पर)	40 अंक
5	पठित काव्यांश पर आधारित 05 बहुविकल्पी प्रश्न (01 अंक x 05 प्रश्न)	05 अंक
6	काव्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 60 शब्दों में)	06 अंक

	(03 अंक x 02 प्रश्न)	
7	काव्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 40 शब्दों में) (02 अंक x 02 प्रश्न)	04 अंक
8	पठित गद्यांश पर आधारित 05 बहुविकल्पी प्रश्न (01 अंक x 05 प्रश्न)	05 अंक
9	गद्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 60 शब्दों में) (03 अंक x 02 प्रश्न)	06 अंक
10	गद्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 40 शब्दों में) (02 अंक x 02 प्रश्न)	04 अंक
11	वितान के पाठों पर आधारित 03 में से 02 प्रश्नों के उत्तर (लगभग 60 शब्दों में) (05 अंक x 02 प्रश्न)	10 अंक
13	**(अ) श्रवण तथा वाचन** **(ब) परियोजना कार्य**	10+10 = 20 अंक
कुल अंक		**100 अंक**

निर्धारित पुस्तकें :

1. **आरोह, भाग–2**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित
2. **वितान, भाग–2**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित
3. **'अभिव्यक्ति और माध्यम'**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित

नोट – पाठ्यक्रम के निम्नलिखित पाठ हटा दिए गए हैं

आरोह भाग - 2	काव्य खंड	• गजानन माधव मुक्तिबोध – सहर्ष स्वीकारा है (पूरा पाठ) • फ़िराक गोरखपुरी – गज़ल
	गद्य खंड	• विष्णु खरे – चार्ली चैप्लिन यानी हम सब (पूरा पाठ) • रज़िया सज्जाद ज़हीर - नमक (पूरा पाठ)
वितान भाग - 2		• एन फ्रैंक - डायरी के पन्ने

कक्षा बारहवीं हेतु प्रश्नपत्र का विस्तृत प्रारूप जानने के लिए कृपया बोर्ड द्वारा जारी प्रतिदर्श प्रश्नपत्र देखें।

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HISTORY
SUBJECT CODE: 027
CLASSES: XI-XII (2025-26)

RATIONALE

The History curriculum introduces the students to a set of important historical events and processes through a focus on a series of historical issues, debates and through various sources. Discussion of these themes would allow students not only to know about the events and processes, but also to discover the excitement of reading history. However, practical way of assessing whether the learning objectives have been actualised or not, can be ensure d by the way of having stated outcomes. These outcomes have been enumerated against the learning objectives so that the concerned teachers and their students can adopt different kinds of constructive strategies and competency-based assessment techniques. It is also to be understood that the learning objectives and their outcomes are essentially linked and complementary to each other.

AIMS & OBJECTIVES

History gives us the tools to analyse and explain problems in the past, it helps us to see the patterns that might otherwise be not known in the present. It provides a crucial perspective for understanding and solving the current and future problems.

Studying the diversity of human experience helps us appreciate cultures, ideas, and traditions and to recognise them as meaningful outcomes of specific times and places. History helps us realise how different is our life from that of our ancestors, yet how similar we are in our goals and values. With lessons from the past, we not only learn about ourselves and how we came to be, but also develop the ability to avoid mistakes and create better paths for our societies.

The subject emphasises 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 would help them to understand the process through which historians write history, by choosing and assembling different types of evidence, and by reading their sources critically. They will appreciate how historians follow the trails that lead to the past, and how historical knowledge develops.

The syllabus would also enable students to store/relate/compare developments in different situations, analyse connections between similar processes located in different time periods, and discover the relationship between different methods of enquiry within history and the allied disciplines.

THEMES IN CLASS XI

The syllabus in class XI is organised around some major themes in the world history.

1. Focus on some important developments in different spheres-political, social, cultural, and economic.

2. Study not only the grand narratives of development-urbanisation, industrialisation, and modernisation-but also to know about the processes of displacements and marginalisation. Through the study of these themes' students will acquire a sense of the wider historical processes as well as an idea of the specific debates around them.

   The treatment of each theme in class XI would include an overview of the theme under discussion, a more detailed focus on one region of study and an introduction to a critical debate associated with the issue.

   Many of the themes will introduce to the debates in the field and show how historians continuously rethink old issues.

THEMES IN CLASS XII

In class XII the focus will shift to a detailed study of some themes in ancient, medieval, and modern Indian history although the attempt is to soften the distinction between what is conventionally termed as ancient, medieval and modern. The object would be to study a set of these themes in some detail and depth rather than survey the entire chronological span of Indian history. In this sense the course will be built on the knowledge that the students have acquired in the earlier classes.

Each theme in class XII will also introduce the students to one type of source for the study of history. Through such a study, students would begin to see what different types of sources can reveal and what they cannot tell. They would come to know how historians analyse these sources, the problems, and difficulties of interpreting each type of source, and the way a larger picture of an event, a historical process, or a historical figure, is built by looking at different types of sources.

Each theme for class XII will be organised around four sub heads:

1. A detailed overview of the events, issues, and processes under discussion.
2. A summary of the present state of research on the theme.
3. An account of how knowledge about the theme has been acquired.
4. An excerpt from a primary source related to the theme, explaining how it has been said by historians.

While the themes in both the classes (XI and XII) are arranged in a broad chronological sequence, there are overlaps between them. This is intended to convey a sense that chronological divides and periodization do not always operate in a neat fashion. In the textbooks each theme would be located in a specific time and place. But these discussions would be situated within a wider context by……

- Plotting the specific event within timelines.
- Discussing the event or process in relation to the developments in other places and other times.

COURSE STRUCTURE
Class XI

Section Title	Theme No.	Theme Title	Marks
Reading of World History		Introduction of World History	
I EARLY SOCIETIES		Introduction Timeline I (6 MYA TO 1 BCE)	
	1	Writing and City Life	10
II EMPIRES		Introduction Timeline II (C. 100 BCE TO 1300 CE)	
	2	An Empire Across Three Continents	10
	3	Nomadic Empires	10
III CHANGING TRADITIONS		Introduction Timeline III (C. 1300 TO 1700)	
	4	The Three orders	10
	5	Changing Cultural Traditions	10
IV TOWARDS MODERNISATION		Introduction Timeline IV (C. 1700 TO 2000)	
	6	Displacing Indigenous Peoples	10
	7	Paths to Modernisation	15
	Map	Map work of the related Themes	05
		Theory Total	80
		Project work	20
		TOTAL	**100**

Note-The Maps available in the official website of Govt., of India may be used

COURSE CONTENT
CLASS XI

Section	Theme	Learning outcome with specific competencies
I EARLY SOCIETIES	**Timeline I (6 MYA TO 1 BCE)**	❖ Understanding the concept of chronology
	Theme 1 Writing and City Life Focus: Iraq, 3rd millennium BCE a. Growth of towns b. Nature of early urban societies c. Historians 'Debate on uses of writing.	❖ Elucidate the interwoven social and cultural aspects of civilization in order to understand the connection between city life and culture of contemporary civilizations through their writings. ❖ Analyse the outcomes of a sustained tradition of writing. ❖ Explain the connection between the growth of human civilisation and the tradition of writing.
	Timeline II (C.100 BCE TO 1300 CE)	❖ Understanding the periods in order of time.
II EMPIRES	**Theme 2** **An Empire across Three Continents**	❖ Explain and relate the dynamics of the Roman Empire in order to understand their polity, economy, society and culture. ❖ Analyse the implications of Roman's contacts with the subcontinent empires and discuss about slavery. ❖ Examine the domains of cultural transformation in that period & the impact of slavery.
	Theme 3 **NOMADIC EMPIRES**	❖ Identify the living patterns of nomadic pastoralist society. ❖ Trace the rise and growth of Genghis Khan in order to understand him as an oceanic ruler. ❖ Analyse socio-political and economic changes during the period of the descendants of Genghis khan ❖ Distinguish between the Mongolian people's perspective and the world's opinion about Genghis Khan
III CHANGING TRADITIONS	**Timeline III (C. 1300 TO 1700)** **Theme 4 The Three Orders**	❖ Explain the myriad aspects of feudalism with reference to first, second, third and fourth order of the society. ❖ Relate between ancient slavery and serfdom. ❖ Assess the 14th century crisis and rise of the nation states.

	Theme 5 **Changing Cultural Traditions**	❖ Analyse the causes, events, and effects of the Renaissance, Reformation, Scientific Revolution, and Age of Exploration. ❖ Relate the different facets of Italian cities to understand the characteristics of Renaissance, Humanism and Realism. ❖ Compare and contrast the condition of women in the Renaissance period. ❖ Recognise major influences on the architectural, artistic, and literary developments to understand the facades of Renaissance. ❖ Critically analyse the impact on later reforms. ❖ Evaluate the Roman Catholic Church's response to the Protestant Reformation.
IV **TOWARDS MODERNISATION**	**Timeline IV** **(C. 1700 to 2000)**	❖ Remember and understand the time frame.
	Theme 6 **Displacing Indigenous People**	❖ Evaluate the process of displacements of the native people which led to the development of America and Australia to understand their condition. ❖ Analyse the realms of settlement of Europeans in Australia and America. ❖ Compare and contrast the lives and roles of indigenous people in these continents ❖ Analyse the domains of Japanese nationalism prior and after the Second World War.
	Theme 7 **Paths to Modernization** (NOTE- Keeping in view the importance of the themes i.e. Japan, china and Korea; it is advised that all must be taught in the schools.	❖ Summarise the nationalist upsurge in China from Dr Sun Yat Sen to Mao Zedong to understand the era of Communism. ❖ Analyse the Chinese path to modernization under Deng Xioping and Zhou enlai in order to understand the transformation from rigid communism to liberal socialism. ❖ Deduce the histories of China and Japan from the phase of imperialism to modernization. ❖ Analyse the domains of Japanese nationalism prior and after the Second World War.

QUESTION PAPER DESIGN
CLASS XI

Section	Theme	MCQ MM-1	SA MM-3	LA MM-8	Source based MM-4	Total
I- EARLY SOCIETIES	Theme 1	3	1	0	1	10
II -EMPIRES	Theme 2-3	4	0	2	0	20
III-CHANGING TRADITIONS	Theme 4-5	6	2	0	2	20
IV- TOWARDS MODERNISATION	Theme 6-7	8	3	1	0	25
MAP						**05**
Total		**21x1=21**	**6x3=18**	**8x3=24**	**4x3=12**	**80**

CLASS XI
INTERNAL ASSESSMENT

PROJECT WORK **MM- 20**

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, scrutinises, and assembles different types of evidence to write history. The syllabus in class-XI is organised 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 them a 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.
- develop skill to comprehend, analyse, interpret, evaluate historical evidence, and understand the limitation of historical evidence.
- develop 21st century managerial skills of co-ordination, self-direction, and time management
- learn to work on diverse cultures, races, religions, and lifestyles.
- learn through constructivism-a theory based on observation and scientific study.
- inculcate a spirit of inquiry and research.
- communicate data in the most appropriate form using a variety of techniques.
- provide greater opportunity for interaction and exploration.
- understand contemporary issues in context to our past.
- develop a global perspective and an international outlook.
- grow into caring, sensitive individuals capable of making informed, intelligent, and independent choices.
- develop lasting interest in history discipline.

GUIDELINES FOR 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:

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

- ❖ 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. to enrich the subject content.
- ❖ 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.
- ❖ 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.
- ❖ Evaluation will be done by external examiner appointed by the Board in class XII and internal class XI.

SUGGESTIVE TOPICS FOR PROJECTS - CLASS XI

1. Facets of the Industrialization in sixteenth- eighteenth centuries.
2. Crusades: causes; rationale; events; outcomes; Holy Alliance
3. Ancient History in depth: Mesopotamia
4. Greek Philosophy and City States
5. Contributions of Roman Civilization
6. The spirit of Renaissance: Manifestation in art; Literature; Sculpture; Influence on Trading Community; Social Fabric; Philosophy; Political Values; Rational Thinking; Existentialism
7. Aspects of Development -South American States /Central American States
8. Different schools of thoughts- Realism: Humanism: Romanticism
9. Piecing together the past of Genghis Khan
10. Myriad Realms of Slavery in ancient, medieval, and modern world
11. History of Aborigines – America /Australia
12. Facets of Modernization – China /Japan/Korea

(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 conceptualise 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.)

CLASS XII
COURSE STRUCTURE

Theory Paper

S.No.	Part	Marks
1	Themes in Indian History Part--I	25
2	Themes in Indian History Part—II	25
3	Themes in Indian History Part—III	25
4	Map	05
	Total	80

Note-The Maps available in the website of Survey of India may be used.(https://surveyofindia.gov.in/)

Themes in Indian History	**Part-I**	**25 Marks**
Sr No.	**Theme Title**	**Marks**
1	Bricks, Beads and Bones The Harappa Civilisation	25
2	Kings, Farmers and Towns Early States and Economies (*c*.600 BCE 600 CE)	
3	Kingship, Caste and class Early Societies (c. 600 BCE600 CE)	
4	Thinkers, Beliefs and Buildings Cultural Developments (c. 600 BCE 600 CE)	
Themes in Indian History	**Part-II**	**25 marks**
5	Through the eyes of Travellers Perceptions of Society (c. tenth to seventeenth centuries)	
6	Bhakti-Sufi Traditions Changes in Religious Beliefs and Devotional Texts (c. eighth to eighteenth centuries)	25
7	An Imperial Capital – Vijayanagar (c. fourteenth to sixteenth centuries)	
8	Peasants, zamindars and the States Agrarian Society and the Mughal Empire (c. sixteenth-seventeenth centuries)	

Themes in Indian History	Part-III	25 marks
09	Colonialism and The Countryside Exploring Official Archives	25
10	Rebels and Raj 1857 Revolt and its Representations	
11	Mahatma Gandhi and the National Movement Civil Disobedience and Beyond	
12	Framing of the Constitution The Beginning of a New Era	
	Including Map work of the related Themes	05
	Theory Total	80
	Project Work	20
	TOTAL	**100**

Note-The Maps available in the official website of Govt., of India may be used

CLASS XII
COURSE CONTENT

Theme No. and Title	Learning outcome with specific competencies
Themes in Indian History Part – I	
1 **BRICKS, BEADS AND BONES The Harappan Civilisation**	❖ Investigate, explore and interpret the early urban centres and social institutions. ❖ State and deduce the multi-lateral aspects of Harappan civilisation to understand the first civilization of the world. ❖ 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)**	❖ Critically evaluate and interpret major trends in the political and economic history of the subcontinent. ❖ Decode inscriptional evidence. ❖ Analyse inscriptional evidences and the ways in which these have shaped the understanding of political and economic processes.

3 **KINSHIP, CASTE AND CLASS** **Early Societies** **(c. 600 BCE 600 CE)**	❖ Examine, analyse the issues of social history. ❖ Analyse 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)**	❖ Infer and compare the major religious developments in early India. ❖ Elucidate the rich religious sculpture and infer the stories hidden in it. ❖ Create a picture album of the Buddhist Sculpture.
Themes in Indian History Part—II	
5 **THROUGH THE EYES OF TRAVELLERS** **Perceptions of Society** **(c. tenth to seventeenth centuries)**	❖ Understand salient features of social histories described by the travellers and apply the learning in real life. ❖ Elucidating 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.
6 **BHAKTI –SUFI TRADITIONS** **Changes in Religious Beliefs and Devotional Texts** **(c. eighth to eighteenth centuries)**	❖ Understand the religious developments. ❖ Summarise 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)**	❖ Students will be able to Classify the distinctive architectural contributions of the Vijayanagar empire to comprehend the richness of mingled cultures of deccan India. ❖ Analyse accounts of foreign traveller's on Vijayanagar in order to interpret political, social and cultural life of the city. ❖ Assess and appreciate the city planning, water management system, administration of the rulers.

8 **PEASANTS, ZAMINDARS AND THE STATE** **Agrarian Society and the Mughal Empire (c. sixteenth seventeenth centuries)**	❖ 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. ❖ Make a table and bring out the differences in the agrarian sector.
Themes in Indian History Part—III	
9 **COLONIALISM AND THE COUNTRYSIDE** **Exploring Official Archives**	❖ Evaluate the revenue systems introduced by the British to understand the economic aspects of colonization in India. ❖ Analyse the colonial official records& reports to understand the divergent interest of British and Indians. ❖ Find solution to be taken to protect the peasants and artisans in this century.
10 **REBELS AND THE RAJ** **1857 Revolt and its Representations**	❖ Examine the events of 1857. ❖ 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. ❖ Analyse how revolt created vision of unity amongst Indians. ❖ Interpret visual images to understand the emotions portrayed by the nationalist and British.
11 **MAHATMA GANDHI AND THE NATIONALIST MOVEMENT** **Civil Disobedience and Beyond**	❖ Understand the nationalist movement in chronological order. ❖ Correlate the significant elements of the nationalist movement and the nature of ideas, individuals, and institutions under the Gandhian leadership. ❖ Debate on the significant contributions of Gandhi to understand his mass appeal for nationalism. ❖ Explore the ways of interpreting historical source such as newspapers, biographies and autobiographies diaries, letters
12 **FRAMING THE CONSTITUTION** **The Beginning of a New Era**	❖ Highlight the role of Constituent Assembly to understand functionaries in framing the constitution of India. ❖ Analyse how debates and discussions around important issues in the Constituent Assembly shaped our Constitution

Note: This is not an exhaustive list. For reflective teaching- learning process, explicit Learning Objectives and Outcomes can be added by teachers during the course-delivery for student's real learning.

S. No	Page No.	Part – I Maps
1	2	**Mature Harappan sites:** Harappa, Banawali, Kalibangan, Balakot, Rakhigarhi, Dholavira, Nageshwar, Lothal, Mohenjodaro, Chanhudaro, Kot Diji.
2	3	**Mahajanapada and cities:** Vajji, Magadha, Kosala, Kuru, Panchala, Gandhara, Avanti, Rajgir, Ujjain, Taxila, Varanasi.
3	33	**Distribution of Ashokan inscriptions:** • Pillar inscriptions – Sanchi, Topra, Meerut Pillar and Kaushambi. • Kingdom of Cholas, Cheras and Pandyas.
4	43	**Important kingdoms and towns:** • Kushanas, Shakas, Satavahanas, Vakatakas, Guptas • Cities/towns: Mathura, Kanauj, Puhar, Braghukachchha, Shravasti, Rajgir, Vaishali, Varanasi, Vidisha
5	95	**Major Buddhist Sites:** Nagarjunakonda, Sanchi, Amaravati, Lumbini, Bharhut, Bodh Gaya, Ajanta
S. No	**Page No.**	**Part II - Maps**
6	174	Bidar, Golconda, Bijapur, Vijayanagar, Chandragiri, Kanchipuram, Mysore, Thanjavur, Kolar, Tirunelveli
7	214	**Territories under Babur, Akbar and Aurangzeb:** • Delhi, Agra, Panipat, Amber, Ajmer, Lahore, Goa.
S. No	**Page No.**	**Part III - Maps**
8	287	**Territories/cities under British Control in1857**: Punjab, Sindh, Bombay, Madras Berar, Bengal, Bihar, Orissa, Surat, Calcutta, Patna, Allahabad
9	260	**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

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CLASS XII
QUESTION PAPER DESIGN

Book	MCQ		SA		LA		Source Based		Map	Total	
	No of questions	MM	No of questions	MM	No of questions	MM	No of questions	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										80	20
Total	**7x3=21**		**6x3=18**		**3x8=24**		**3x4=12**		**1x5=5**	**100 Marks**	

WEIGHTAGE BASED ON COMPETENCIES

Competencies	Marks	%
Knowledge Remembering previously learned material by recalling facts, terms, basic concepts, and answers.	21	26.25
Understanding demonstrating understanding of facts and ideas by organizing, translating, interpreting, giving descriptions and stating main ideas.	18	22.50
Applying and Analyzing: applying acquired knowledge, facts, techniques and rules and solving the problems.	24	30
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
Map skills	05	6.25

Note-The Maps available in the official website of Govt., of India may be used

INTERNAL ASSESSMENT

PROJECT WORK **MM-20**

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- 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 FOR 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. 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 and internal in class XI.

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

A FEW SUGGESTIVE TOPICS FOR CLASS XII PROJECTS

1. The Indus Valley Civilization-Archaeological 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 conceptualise under the embedded themes. Forms of rubrics are a significant aspect and to be discussed in the classroom itself for clear understanding of concept & for assessment.

Note: Please refer Circular No. Acad.16/2013 dated 17.04.2013 for complete guidelines.

Kindly refer to the guidelines on project work for classes XI and XII given below: - 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 suggested**:**

1. Choose a Title/Topic
2. Need of the Study, Objective of the Study
3. Hypothesis
4. Content -Timeline, Maps, Mind maps, Pictures, etc. (Organization of Material/Data Present Material/Data)
5. Analysing the Material/Data for Conclusion
6. Draw the Relevant Conclusion
7. Bibliography

2. Expected Checklist for the Project Work:

1. Introduction of topic/ title
2. Identifying the causes, events, consequences and/or remedies
3. Various stakeholders and effect on each of them
4. Advantages and disadvantages of situations or issues identified
5. Short-term and long-term implications of strategies suggested during research
6. Validity, reliability, appropriateness, and relevance of data used for research work and for presentation in the project file
7. Presentation and writing that is succinct and coherent in project file
8. Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.

3. Assessment of Project Work:

1. Project Work has broadly the following phases: Synopsis/ Initiation, Data Collection, Data Analysis and Interpretation, Conclusion.
2. The aspects of the project work to be covered by students can be assessed during the academic year.
3. 20 marks assigned for Project Work can be divided in the following manner:

Month	Periodic Work	Assessment Rubrics	Marks
April-July	Instructions about Project Guidelines, Background reading Discussions on Theme and Selection of the Final Topic, Initiation/ Synopsis	Introduction, Statement of Purpose/ Need and objectives of the study, Hypothesis/ Research Question, Review of Literature, Presentation of Evidence, Methodology, Questionnaire, Data	6
August - October	Planning and organization: forming an action plan, feasibility, or baseline study, Updating/ modifying the action plan, Data Collection	Significance and relevance of the topic; challenges encountered while conducting the research.	5
November-January	Content/data analysis and interpretation. Conclusion, Limitations, Suggestions, Bibliography, Annexures and overall presentation of the project	Content analysis and its relevance in the current scenario. Conclusion, Limitations, Bibliography, Annexures and Overall P resentation.	5
January - February	Final Assessment and VIVA by both Internal and External Examiners	External/ Internal Viva based on the project	4
TOTAL			**20**

4. Viva-Voce

1. At the end, each learner will present the research work in the Project File to the External and Internal examiner.
2. The questions should be asked from the Research Work/ Project File of the learner.
3. 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.

INFORMATICS PRACTICES
Subject Code - 065
Class XI (2025-26)

1. **Prerequisite.** None

2**. Learning Outcomes**

At the end of this course, students will be able to:

- Identify the components of computer system.
- Create Python programs using different data types, lists and dictionaries.
- Understand database concepts and Relational Database Management Systems.
- Retrieve and manipulate data in RDBMS using Structured Query Language
- Identify the Emerging trends in the fields of Information Technology.

3. Distribution of Marks and Periods

Unit No	Unit Name	Marks
1	Introduction to computer system	10
2	Introduction to Python	25
3	Database concepts and the Structured Query Language	30
4	Introduction to Emerging Trends	5
	Practical	30
	Total	**100**

4. Unit Wise syllabus

Unit 1: Introduction to Computer System

Introduction to computer and computing: evolution of computing devices, components of a computer system and their interconnections, Input/output devices.

Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns.

Software: purpose and types – system and application software, generic and specific purpose software.

Unit 2: Introduction to Python

Basics of Python programming, execution modes: - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operator, precedence of operators, data types, mutable and immutable data types, statements, expression evaluation, comments, input and output statements, data type conversion, debugging.
Control Statements: if-else, if-elif-else, while loop, for loop
Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions – len(),list(),append(),insert(), count(),index(),remove(), pop(), reverse(), sort(), min(),max(),sum()
Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions – dict(), len(), keys(), values(), items(), update(), del(), clear()
Introduction to NumPy: Introduction, Creation of NumPy Arrays from List

Unit 3: Database concepts and the Structured Query Language

Database Concepts: Introduction to database concepts and its need, Database Management System.
Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key
Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types
Data Definition: CREATE DATABASE, CREATE TABLE, DROP, ALTER
Data Query: SELECT, FROM, WHERE with relational operators, BETWEEN, logical operators, IS NULL, IS NOT NULL
Data Manipulation: INSERT, DELETE,UPDATE

Unit 4: Introduction to the Emerging Trends

Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics, Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.

Practical Marks Distribution

S.No.	Unit Name	Marks
1	Problem solving using Python programming language	11
2	Creating database using MySQL and performing Queries	7
3	Practical file (minimum of 14 python programs, and 14 SQL queries)	7
4	Viva-Voce	5
	Total	**30**

5. Suggested Practical List

5.1 Programming in Python

1. To find average and grade for given marks.
2. To find sale price of an item with given cost and discount (%).
3. To calculate perimeter/circumference and area of shapes such as triangle, rectangle, square and circle.
4. To calculate Simple and Compound interest.
5. To calculate profit-loss for given Cost and Sell Price.
6. To calculate EMI for Amount, Period and Interest.
7. To calculate tax - GST / Income Tax.
8. To find the largest and smallest numbers in a list.
9. To find the third largest/smallest number in a list.
10. To find the sum of squares of the first 100 natural numbers.
11. To print the first 'n' multiples of given number.
12. To count the number of vowels in user entered string.
13. To print the words starting with an alphabet in a user entered string.
14. To print number of occurrences of a given alphabet in each string.
15. Create a dictionary to store names of states and their capitals.
16. Create a dictionary of students to store names and marks obtained in 5 subjects.
17. To print the highest and lowest values in the dictionary.

5.2 Data Management: SQL Commands

1. To create a database

2. To create student table with the student id, class, section, gender, name, dob, and marks as attributes where the student id is the primary key.

3. To insert the details of at least 10 students in the above table.
4. To display the entire content of table.
5. To display Rno, Name and Marks of those students who are scoring marks more than 50.
6. To display Rno, Name, DOB of those students who are born between ‘2005- 01-01’ and ‘2005-12-31’.

Suggested material

NCERT Informatics Practices - Text book for class - XI (ISBN- 978-93-5292-148-5)

INFORMATICS PRACTICES
Subject Code - 065
Class XII (2025-26)

1. **Prerequisite:** Informatics Practices – Class XI

2. **Learning Outcomes**

   At the end of this course, students will be able to:

   - Create Series, Data frames and apply various operations.
   - Visualize data using relevant graphs.
   - Design SQL queries using aggregate functions.
   - Import/Export data between SQL database and Pandas.
   - Learn terminology related to networking and internet.
   - Identify internet security issues and configure browser settings.
   - Understand the impact of technology on society including gender and disability issues

3. **Distribution of Marks and Periods**

Unit No	**Unit Name**	**Marks**
1	Data Handling using Pandas and Data Visualization	25
2	Database Query using SQL	25
3	Introduction to Computer Networks	10
4	Societal Impacts	10
	Project	-
	Practical	30
	Total	**100**

4. Unit Wise syllabus

Unit 1: Data Handling using Pandas -I

Introduction to Python libraries- Pandas, Matplotlib;

Data structures in Pandas - Series and Data Frames.

Series: Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head() and Tail() functions; Selection, Indexing and Slicing.

Data Frames: creation- from dictionary of Series, list of dictionaries, Text/CSV files, display; iteration; Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels, Boolean Indexing;

Importing/Exporting Data between CSV files and Data Frames.

Data Visualization

Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram

Customizing plots: adding label, title, and legend in plots.

Unit 2: Database Query using SQL

Revision of database concepts and SQL commands covered in class XI

Math functions: POWER (), ROUND (), MOD ().

Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (),

LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM ().

Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (),

DAYNAME ().

Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*).

Querying and manipulating data using Group by, Having, Order by.

Working with two tables using equi-join

Unit 3: Introduction to Computer Networks

Introduction to networks, Types of network: PAN, LAN, MAN, WAN.

Network Devices: modem, hub, switch, repeater, router, gateway

Network Topologies: Star, Bus, Tree, Mesh.

Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP.

Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website.

Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.

Unit 4: Societal Impacts

Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS), cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act.

E-waste: hazards and management.

Awareness about health concerns related to the usage of technology.

Project Work

The aim of the class project is to create tangible and useful IT application. The learner may identify a real-world problem by exploring the environment. e.g. Students can visit shops/business places, communities or other organizations in their localities and enquire about the functioning of the organization, and how data are generated, stored, and managed.

The learner can take data stored in csv or database file and analyze using Python libraries and generate appropriate charts to visualize.

Learners can use Python libraries of their choice to develop software for their school or any other social good.

Learners should be sensitized to avoid plagiarism and violation of copyright issues while working on projects. Teachers should take necessary measures for this. Any resources (data, image etc.) used in the project must be suitably referenced.

The project can be done individually or in groups of 2 to 3 students. The project should be started by students at least 6 months before the submission deadline.

Practical Marks Distribution

S. No.	Unit Name	Marks
1	Programs using Pandas and Matplotlib	8
2	SQL Queries	7

3	Practical file (minimum of 15 programs based on Pandas, 4 based on Matplotlib and 15 SQL queries must be included)	5
4	Project Work (using concepts learned in class XI and XII)	5
5	Viva-Voce	5
	TOTAL	**30**

5. Suggested Practical List

5.1 Data Handling

1. Create a panda's series from a dictionary of values and a ndarray
2. Given a Series, print all the elements that are above the 75th percentile.
3. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category and print the total expenditure per category.
4. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions
5. Filter out rows based on different criteria such as duplicate rows.
6. Importing and exporting data between pandas and CSV file

5.2 Visualization

1. Given the school result data, analyses the performance of the students on different parameters, e.g subject wise or class wise.
2. For the Data frames created above, analyze, and plot appropriate charts with title and legend.
3. Take data of your interest from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.

5.3 Data Management

1. Create a student table with the student id, name, and marks as attributes where the student id is the primary key.
2. Insert the details of a new student in the above table.
3. Delete the details of a student in the above table.
4. Use the select command to get the details of the students with marks more than 80.
5. Find the min, max, sum, and average of the marks in a student marks table.
6. Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by.
7. Write a SQL query to order the (student ID, marks) table in descending order of the marks.

Mathematics

Subject Code – 041

Classes XI-XII (2025 – 26)

The Syllabus in the subject of Mathematics has undergone changes from time to time in accordance with growth of the subject and emerging needs of the society. Senior Secondary stage is a launching stage from where the students go either for higher academic education in Mathematics or for professional courses like Engineering, Physical and Biological science, Commerce or Computer Applications. The present revised syllabus has been designed in accordance with National Curriculum Framework 2005 and as per guidelines given in Focus Group on Teaching of Mathematics 2005 which is to meet the emerging needs of all categories of students. Motivating the topics from real life situations and other subject areas, greater emphasis has been laid on application of various concepts.

Objectives

The broad objectives of teaching Mathematics at senior school stage intend to help the students:

- to acquire knowledge and critical understanding, particularly by way of motivation and visualization, of basic concepts, terms, principles, symbols and mastery of underlying processes and skills.
- to feel the flow of reasons while proving a result or solving a problem.
- to apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method.
- to develop positive attitude to think, analyze and articulate logically.
- to develop interest in the subject by participating in related competitions.
- to acquaint students with different aspects of Mathematics used in daily life.
- to develop an interest in students to study Mathematics as a discipline.
- to develop awareness of the need for national integration, protection of environment, observance of small family norms, removal of social barriers, elimination of gender biases.
- to develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.

COURSE STRUCTURE

CLASS XI (2025-26)

Three Hours **Max Marks: 80**

No.	Units	Marks
I.	Sets and Functions	23
II.	Algebra	25
III.	Coordinate Geometry	12
IV.	Calculus	08
V.	Statistics and Probability	12
	Total	**80**
	Internal Assessment	**20**

*No chapter/unit-wise weightage. Care to be taken to cover all the chapters.

Unit-I: Sets and Functions

1. Sets

Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement.

2. Relations & Functions

Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (up to R x R x R). Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions.

3. Trigonometric Functions

Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity $sin^2x + cos^2x = 1$, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing $sin\,(x \pm y)$ and $cos\,(x \pm y)$ in terms of $sinx,\ siny, cosx$ & $cosy$ and their simple applications. Deducing identities like the following:

$\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y}, \cot(x \pm y) = \frac{\cot x \mp \cot y}{\cot y \pm \cot x}$

$\sin \alpha \pm \sin \beta = 2 \sin \frac{1}{2}(\alpha \pm \beta) \cos \frac{1}{2}(\alpha \mp \beta)$

$\cos \alpha + \cos \beta = 2 \cos \frac{1}{2}(\alpha + \beta) \cos \frac{1}{2}(\alpha - \beta)$

$\cos \alpha - \cos \beta = -2 \sin \frac{1}{2}(\alpha + \beta) \sin \frac{1}{2}(\alpha - \beta)$

Identities related to $\sin 2x$, $\cos 2x$, $\tan 2x$, $\sin 3x$, $\cos 3x$ and $\tan 3x$.

Unit-II: Algebra

1. Complex Numbers and Quadratic Equations

Need for complex numbers, especially $\sqrt{-1}$, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane.

2. Linear Inequalities

Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.

3. Permutations and Combinations

Fundamental principle of counting. Factorial *n.* (n!) Permutations and combinations, derivation of Formulae for ${}^{n}P_{r}$, ${}^{n}C_{r}$ and their connections, simple applications.

4. Binomial Theorem

Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications.

5. Sequence and Series

Sequence and Series. Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of *n* terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M

Unit-III: Coordinate Geometry

1. Straight Lines

Brief recall of two-dimensional geometry from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form. Distance of a point from a line.

2. Conic Sections

Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.

3. Introduction to Three-dimensional Geometry

Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points.

Unit-IV: Calculus

1. Limits and Derivatives

Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to scope of tangent of the curve, derivative of sum, difference, product and quotient of functions of polynomial and trigonometric functions.

Unit-V Statistics and Probability

1. Statistics

Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.

2. Probability

Events; occurrence of events, ‘not’, ‘and’ and ‘or’ events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of ‘not’, ‘and’ and ‘or’ events.

MATHEMATICS QUESTION PAPER DESIGN

CLASS – XI (2025-26)

Time: 3 hours **Max. Marks: 80**

S. No.	Typology of Questions	Total Marks	% Weightage
1	**Remembering:** Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. **Understanding:** 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.	20	25
3	**Analysing:** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations **Evaluating:** Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. **Creating:** Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions	16	20
	Total	**80**	**100**

1. *No chapter wise weightage. Care to be taken to cover all the chapters*
2. *Suitable internal variations may be made for generating various templates keeping the overall weightage to different form of questions and typology of questions same.*

Choice(s):

There will be no overall choice in the question paper. However, 33% internal choices will be given in all the sections

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

Note: Please refer the guidelines given under XII Mathematics Syllabus.

CLASS – XI (2025-26)

The following topics are included in the syllabus but will be assessed only formatively to reinforce understanding without adding to summative assessments. This reduces academic stress while ensuring meaningful learning. Schools can integrate these with existing chapters as they align well. Relevant NCERT textual material is enclosed for reference.

S.No.	Content
	Unit-I: Sets and Functions
1.	**Sets**
	Practical problems on Union and Intersection of two sets.
2.	**Relations and Functions**
	Composition of Functions
3.	**Trigonometric Functions**
	General solution of trigonometric equations of the type $\sin y = \sin a$, $\cos y = \cos a$ and $\tan y = \tan a$.
	Unit-II: Algebra
1.	**Principle of Mathematical Induction**
	Process of the proof by induction, motivating the application of the method by looking at natural numbers as the least inductive subset of real numbers. The principle of mathematical induction and simple applications.
2.	**(Complex Numbers and) Quadratic Equations**
	Polar representation of complex numbers. Statement of Fundamental Theorem of Algebra, solution of quadratic equations (with real coefficients) in the complex number system.
3.	**Linear Inequalities**
	Graphical solution of linear inequalities in two variables. Graphical method of finding a solution of system of linear inequalities in two variables.
4.	**Binomial Theorem**
	General and middle term in binomial expansion.
5.	**Sequence and Series**
	Formulae for the following special sums $\sum_{k=1}^{n} k$, $\sum_{k=1}^{n} k^2$, $\sum_{k=1}^{n} k^3$
	Unit-III: Coordinate Geometry
1.	**Straight Lines**
	Normal form. General equation of a line.
2.	**Introduction to Three-dimensional Geometry**
	Section formula.
	Unit-IV: Calculus
1.	**Limits and Derivatives**
	Derivatives of composite functions (Chain rule).
	Unit-V Statistics and Probability
1.	**Probability**
	Random experiments; outcomes, sample space (set representation).

COURSE STRUCTURE

CLASS – XII

(2025-26)

One Paper **Max. Marks: 80**

No.	Units	Marks
I.	Relations and Functions	08
II.	Algebra	10
III.	Calculus	35
IV.	Vectors and Three - Dimensional Geometry	14
V.	Linear Programming	05
VI.	Probability	08
	Total	**80**
	Internal Assessment	**20**

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 and 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 the 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, co-factors 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 composite functions, derivatives 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.

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

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

Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

4. Application 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 Problem

1. Linear Programming

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

Unit-VI: Probability

1. Probability

Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem.

MATHEMATICS (Code No. – 041)

QUESTION PAPER DESIGN

CLASS – XII (2025-26)

Time: 3 hours **Max. Marks: 80**

S. No.	Typology of Questions	Total Marks	% Weightage
1	**Remembering:** Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. **Understanding:** 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.	20	25
3	**Analysing :** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations **Evaluating:** Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. **Creating:** Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions	16	20
	Total	**80**	**100**

1. *No chapter wise weightage. Care to be taken to cover all the chapters*
2. *Suitable internal variations may be made for generating various templates keeping the overall weightage to different form of questions and typology of questions same.*

Choice(s):

There will be no overall choice in the question paper. However, 33% internal choices will be given in all the sections

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

Note: For activities NCERT Lab Manual may be referred.

Conduct of Periodic Tests:

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

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

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

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

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

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

d) The school will ensure simple documentation to keep a record of performance as suggested in detail circular no. Acad-05/2017.

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

Assessment of Activity Work:

Throughout the year any 10 activities shall be performed by the student from the activities given in the NCERT Laboratory Manual for the respective class (XI or XII) which is available on the link: http://www.ncert.nic.in/exemplar/labmanuals.html a record of the same may be kept by the student. An year end test on the activity may be conducted

The weightage are as under:

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

Prescribed Books:

1) Mathematics Textbook for Class XI, NCERT Publications
2) Mathematics Part I - Textbook for Class XII, NCERT Publication
3) Mathematics Part II - Textbook for Class XII, NCERT Publication
4) Mathematics Exemplar Problem for Class XI, Published by NCERT
5) Mathematics Exemplar Problem for Class XII, Published by NCERT
6) Mathematics Lab Manual class XI, published by NCERT
7) Mathematics Lab Manual class XII, published by NCERT

Physical Education (Subject Code 048)

Class XI-XII (2025-26)

RATIONALE

Sri Aurobindo believed, “For the body to be effective physical education must be rigorous and detailed, far-sighted and methodological. This will be translated into habits. These habits should be controlled and disciplined while remaining flexible enough to adapt themselves to circumstances and to the needs of growth and development of the being”.

Physical education programs at all levels help students develop the knowledge, skills, attitudes, values, and behaviours to initiate and maintain a physically active lifestyle that will continue into and through adulthood. Students are encouraged to use physical activity to develop personal initiative, responsibility, and caring about others and the community.

A positive, supportive environment is essential to the success of the physical education program. This inclusive learning environment allows students to experience positive, challenging, and enjoyable physical activity while learning the benefits and importance of such action. Such an environment accommodates a variety of individual differences such as cultural identity, previous movement experiences, fitness and skill levels, and intellectual, physical, and socio-emotional maturity.

Appropriate instruction in physical education incorporates best practices derived from research and experiences in teaching students. This physical education curriculum sets forth developmental and instructional proper rules in designing, implementing, and evaluating physical education programs.

Therefore, the Physical education committee created a tool, ‘The Physical Education Curriculum’ – which has been researched and designed to provide consistency, coherence, and rigor in the content and process of teaching physical education throughout the schools of the CBSE all over the world.

The Physical education curriculum provides all students with enjoyable and worthwhile learning opportunities where they develop the movement skills and competencies to participate and perform in various physical activities competently, confidently, and safely. It builds students’ motivation and commitment to physical activity and sports within and beyond school. It can encourage students to participate in leadership roles, irrespective of their previous experiences or ability in physical activity. The physical education program also prepares students to develop their careers in physical education and sports. It is one of the dynamic fields, providing numerous opportunities for diverse career options like being a teacher, coach, sports manager, and many more.

Looking into today’s context, physical education is the only subject that not only develops mental, physical, and social attributes among us but also contributes to our overall sense of well-being in our life.

LEARNING OBJECTIVES

1. Optimum Development of Child's Physical Growth, Including Intellectual Development, Emotional Development, Social Development, Personal Development, and Character Building.
2. Imparting and Development of Positive Approach among Children to opt for Physical Education as a Profession.
3. Developing Management Skills to Understand and Organize Sports Tournaments.
4. Learn and Understand the Motor Abilities like Strength, Speed, Endurance, Coordination, And Flexibility.
5. Acquire knowledge about the Human Body and Its Functioning and Effects on Physical Activities.
6. Understand the Process of Growth and Development and its Positive Relationship with Physical Activities.
7. Develop Socio-Psychological Aspects like Control of Emotions, Balanced Behavior, Development of Leadership and Followership Qualities, and Team Spirit.
8. Learn and Understand the Effect of Physical and Physiological Training on Women Athletes.
9. Develop the Habit of Practicing Yoga Asanas and Pranayama Daily to Minimize Hypokinetic Diseases.
10. Learning about Nutrition and the Importance of a Balanced Diet.
11. Understand the application of Laws and Principles of Physics in Sports and Games.
12. Understanding the Characteristics of Children with Special Needs (CWSN) and Learning the Importance of Physical Activities for them.
13. Learning the procedure and application of different Physical and Physiological tests for different Age Categories.
14. Learning and understanding different Games and Sports.

Physical Education (Subject Code 048)

CLASS XI (2025-26)

UNIT NO.	UNIT NAME	THE WEIGHTAGE (MARKS) ALLOTTED
UNIT 1	Changing Trends & Career in Physical Education	04 + 04***b****
UNIT 2	Olympic Value Education	05
UNIT 3	Yoga	06+01***b****
UNIT 4	Physical Education & Sports for CWSN	04+03***b****
UNIT 5	Physical Fitness, Wellness	05
UNIT 6	Test, Measurements & Evaluation	08
UNIT 7	Fundamentals of Anatomy and Physiology in Sports	08
UNIT 8	Fundamentals of Kinesiology and Biomechanics in Sports	04+04***b****
UNIT 9	Psychology and Sports	07
UNIT 10	Training & Doping in Sports	07
PRACTICAL (LAB)#	**Including 3 Practical**	30
TOTAL	**Theory 10 + Practical 3**	**Theory 70 + Practical 30 = 100**

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

CLASS XI

COURSE CONTEMT

Unit No.	Unit Name & Topics	Specific learning objectives	Suggested Teaching Learning process	Learning Outcomes with specific Competencies
Unit 1	**Changing Trends and Careers in Physical Education** 1. Concept, Aims & Objectives of Physical Education 2. Development of Physical Education in India – Post Independence 3. Changing Trends in Sports-playing surface, wearable gear and sports equipment, technological advancements 4. Career options in Physical Education 5. Khelo-India Program and Fit – India Program	• To make the students understand the meaning, aims, and objectives of Physical Education. • To Teach students about the development of physical education in India after Independence. • To educate students about the development of sports surfaces, wearable gear, sports equipment, and technology. • To make students know the different career options available in the field. • To make them know about the Khelo India Program	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** • Recognize the concept, aim, and objectives of Physical Education. • Identify the Post-independence development in Physical Education. • Categorize Changing Trends in Sports-playing surface, wearable gear, sports equipment, technological • Explore different career options in the field of Physical Education. • Make out the development of Khelo India and Fit India Program.

Unit 2	**Olympism Value Education** 1. Olympism – Concept and Olympics Values (Excellence, Friendship & Respect) 2. Olympic Value Education – Joy of Effort, Fair Play, Respect for Others, Pursuit of Excellence, Balance Among Body, Will & Mind 3. Ancient and Modern Olympics 4. Olympics - Symbols, Motto, Flag, Oath, and Anthem 5. Olympic Movement Structure - IOC, NOC, IFS, Other members	• To make the students aware of Concepts and Olympics Values (Excellence, Friendship & Respect) • To make students learn about Olympic Value Education – Joy of Effort, Fair Play, Respect for Others, Pursuit of Excellence, Balance Among Body, Will & Mind • To make students understand ancient and modern Olympic games. • To make the students aware of Olympics - Symbols, Motto, Flag, Oath, and Anthem • To make students learn about the working and functioning of IOC, NOC and IFS, and other members.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** • Incorporate values of Olympism in your life. • Differentiate between Modern and Ancient Olympic Games, Paralympics, and Special Olympic games • Identity the Olympic Symbol and Ideals • Describe the structure of the Olympic movement structure

Unit 3	**Yoga** 1. Meaning and importance of Yoga 2. Introduction to Astanga Yoga 3. Yogic Kriyas (Shat Karma) 4. Pranayama and its types. 5. Active Lifestyle and stress management through Yoga	• To make the students aware of the meaning and importance of yoga • To make them learn about Astanga yoga. • To teach students about yogic kriya, specially shat karmas. • To make the learn and practice types of Pran • To make them learn the importance of yoga in stress management.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** • Recognize the concept of yoga and be aware of the importance ; of it • Identify the elements of yoga • Identify the Asanas, Pranayama' s, meditation, and yogic kriyas • Classify various yogic activities for the enhancement of concentration • Know about relaxation technique s for improving concentrat ion
Unit 4	**Physical Education and Sports for Children with Special Needs** 1. Concept of Disability and Disorder 2. Types of Disability, its causes & nature (Intellectual disability, Physical disability).	• To make the students aware concept of Disability and Disorder. • To make students aware of different types of disabilities. • To make students learn about Disability Etiquette	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** • Identify the concept of Disability and Disorder. • Outline types of disability and describe their causes and nature. • Adhere to

	3. Disability Etiquette 4. Aim and objectives of Adaptive physical Education 5. Role of various professionals for children with special needs (Counselor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist, and Special Educator)	• To make the students Understand the aims and objectives Adaptive Physical Education • To make students aware of role of various professionals for children with special needs.		and respect children with special needs by following etiquettes. • Identify possibilities and scope in adaptive physical education • Relate various types of professional support for children with special needs along with their roles and responsibilities.
Unit 5	**Physical Fitness, Wellness, and Lifestyle** 1. Meaning & importance of Wellness, Health, and Physical Fitness. 2. Components/ Dimensions of Wellness, Health, and Physical Fitness 3. Traditional Sports & Regional Games for	• To make the students understand the Meaning & importance of Wellness, Health, and Physical Fitness • To make students aware of the Components/ Dimensions of Wellness, Health, and Physical Fitness • To make students learn Traditional Sports & Regional Games to	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** • Explain wellness and its importance and define the components of wellness. • Classify physical fitness and recognize its importance in life. • Distinguish between skill-related and health-related

	promoting wellness 4. Leadership through Physical Activity and Sports 5. Introduction to First Aid – PRICE	promote wellness • To develop Leadership qualities through Physical Activity and Sports in students • To make students learn First Aid and its management skills		components of physical fitness. • Illustrate traditional sports and regional games to promote wellness. • Relate leadership through physical activity and sports • Illustrate the different steps used in first aid - PRICE.
Unit 6	**Test, Measurement & Evaluation** 1. Define Test, Measurements and Evaluation. 2. Importance of Test, Measurements and Evaluation in Sports. 3. Calculation of BMI, Waist – Hip Ratio, Skin fold measurement (3-site) 4. Somato Types (Endomorphy Mesomorphy & Ectomorphy	• To Introduce the students with the terms like test, measurement and evaluation along with its importance • To Introducing them the methods of calculating BMI, Waist- hip ratio and Skin fold measurement. • To make the students aware of the different somatotypes. To make the students learn the method to measure health-related fitness.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and Expeditionary learning.	**After completing the unit, the student s will be able to:** • Define the terms test, measurement, and evaluation, • Differentiate norm and criterion referenced standards, • Differentiate formative and summative evaluation, • Discuss the importance of measurement and evaluation processes, • Understand

	5. Measurements of health-related fitness			BMI: A popular clinical standard and its computation • Differentiate between Endomorphy, Mesomorphy & Ectomorphy h describe the procedure of Anthropometric Measurement
Unit 7	**Fundamentals of Anatomy, Physiology in Sports** 1. Definition and importance of Anatomy and Physiology in Exercise and Sports. 2. Functions of Skeletal System, Classification of Bones, and Types of Joints. 3. Properties and Functions of Muscles. 4. Structure and Functions of Circulatory System and Heart. 5. Structure and Functions of Respiratory System.	• The students will learn the meaning and definition & identify the importance of anatomy, physiology, and kinesiology. • Students will understand the main functions and Classification of Bone and the Types of Joints. . • The students will learn the Properties and Functions of Muscles. • The students will learn the Structure and Functions of the Circulatory System and Heart. • The students will learn the Structure and Functions of Respiratory System.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game - based learning and Expeditionary learning.	**After completing the unit, the students will be able to:** • Identify the importance of anatomy and physiology. • Recognize the functions of the skeleton. • Understand the functions of bones and identify various types of joints. • Figure out the properties and functions of muscles and understand how they work. • Understand the anatomy of the respiratory system and describe it's working. • Identify and analyses the layout and functions of Circulatory System.

Unit 8	**Fundamentals Of Kinesiology And Biomechanics in Sports** 1. Definition and Importance of Kinesiology and Biomechanics in Sports. 2. Principles of Biomechanics 3. Kinetics and Kinematics in Sports 4. Types of Body Movements - Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation 5. Axis and Planes – Concept and its application in body movements	• The students will learn the meaning and definition & identify the importance of Kinesiology and Biomechanics in sports. • To make the students learn the principles of biomechanics • To make the students understand the concept of Kinetics and Kinematics in Sports • To make the students learn about different types of body movements. • To make the students understand the concept of Axis and Planes and its application in body movements.	• Lecture-based instruction, • Technology-based learning, Group learning • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** • Understand Kinesiology and Biomechanics with their application in sports • Explain biomechanical principles and their utilization in sports and physical education. • Illustrate fundamental body movements and their basic patterns. • Learn about the Axis and Planes and their application with body movements
Unit 9	**Psychology and Sports** 1. Definition & Importance of Psychology in Physical Education & Sports; 2. Develop-	• The students will identify the definition and importance of Psychology in Physical Education and sports. • The students will	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning,	**After completing the unit, the students will be able to:** • Identify the role of Psychology in Physical Education and Sports

	mental Characteristics at Different Stages of Development. 3. Adolescent Problems & their Manageme nt; 4. Team Cohesion and Sports; 5. Introduction to Psychological Attributes: Attention, Resilience, Mental Toughness	be able to differentiate characteristics of growth and development at different stages. • - Students will be able to identify the issues and management related to adolescents • The students will be able to understand the importance of team cohesion in sports • Students will distinguish different Psychological Attributes like Attention, Resilience, and Mental Toughness.	• Inquiry-based learning, • Kinesthetic learning, Game-based learning and • Expeditionary learning	• Differentiate characteristics of growth and development at different stages. • Explain the issues related to adolescent behavior and Team Cohesion in Sports • Correlate the psychological concepts with the sports and athlete specific situations
Unit 10	**Training & Doping in Sports** 1. Concept and Principles of Sports Training 2. Training Load: Over Load, Adaptation, and Recovery 3. Warming-up & Limbering Down – Types, Method & Importance. 4. Concept of Skill, Technique, Tactics &	• To make the students aware about of concepts and principles of sports training. • To make students learn and understand the Training Load, Over Load, Adaptation, and Recovery concepts. • To make students Understand the importance of warning up and limbering down exercises. • To introduce the terms like Skills, Techniques, Tactics, and Strategies to the	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning	**After completing the unit, the students will be able to:** • Understand the concept and principles of sports training. • Summarise training load and its concept. • Understand the concept of warming up & limbering down in sports training and their types, method & importance.

	Strategies 5. Concept of Doping and its disadvantages	students. • To make students aware of the doping substances and their disadvantages in sports.		• Acquire the ability to differentiate between the skill, technique, tactics & strategies in sports training • Interpret concept of doping.

GUIDELINES FOR INTERNAL ASSESSMENT

(PRACTICAL/ PROJECTS ETC.)

PRACTICAL (Max. Marks 30)	
Physical Fitness Test: SAI Khelo India Test, Brockport Physical Fitness Test (BPFT)*	6 Marks
Proficiency in Games and Sports (Skill of any one IOA recognized Sport/Game of Choice)**	7 Marks
Yogic Practices	7 Marks
Record File ***	5 Marks
Viva Voce (Health/ Games & Sports/ Yoga)	5 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. (SAI Khelo India Test)
- ***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. Labelled diagram of Field & Equipment. Also mention its Rules, Terminologies & Skills.

Physical Education (Subject Code 048)

Class XII (2025-26)

UNIT NO.	UNIT NAME	THE WEIGHTAGE (MARKS) ALLOTTED
UNIT 1	Management of Sporting Events	05 + 04***b****
UNIT 2	Children and Women in Sports	07
UNIT 3	Yoga as Preventive measure for Lifestyle Disease	06+01 ***b****
UNIT 4	Physical Education & Sports for (CWSN)	04+04 ***b****
UNIT 5	Sports & Nutrition	07
UNIT 6	Test and Measurement in Sports	08
UNIT 7	Physiology & Injuries in Sport	04+04 ***b****
UNIT 8	Biomechanics and Sports	10
UNIT 9	Psychology and Sports	07
UNIT 10	Training in Sports	09
PRACTICAL (LAB)#	**Including 3 Practical**	**30**
TOTAL	**Theory 10 + Practical 3**	**Theory 70 + Practical 30 = 100**

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

CLASS XII

COURSE CONTENT

Unit No.	Unit Name & Topics	Specific Learning Objectives	Suggested Teaching Learning process	Learning Outcomes with specific competencies
Unit 1	**Management of Sporting Events** 1. Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling) 2. Various Committees & their Responsibilities (pre; during & post) 3. Fixtures and their Procedures – Knock- Out (Bye & Seeding) & League (Staircase, Cyclic, Tabular method) and Combination tournaments 4. Intramural & Extramural tournaments – Meaning, Objectives & Its Significance 5. Community sports program (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity)	• To make the students understand the need and meaning of planning in sports, committees, and their responsibilities for conducting the sports event or tournament. • To teach them about the different types of tournaments and the detailed procedure of drawing fixtures for Knock Out, League Tournaments, and Combination tournaments. • To make the students understand the need for the meaning and significance of intramural and extramural tournaments • To teach them about the different types of community sports and their importance in our society.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** * Describe the functions of Sports Event management * Classify the committees and their responsibilities in the sports event * Differentiate the different types of tournaments. * Prepare fixtures of knockout, league & combination. * Distinguish between intramural and extramural sports events * Design and prepare different types of community

Unit 2	**Children & Women in Sports** 1. Exercise guidelines of WHO for different age groups. 2. Common postural deformities- knock knees, flat foot, round shoulders, Lordosis, Kyphosis, Scoliosis, and bow legs and their respective corrective measures. 3. Women's participation in Sports- Physical, Psychological, and social benefits. 4. Special consideration (menarche and menstrual dysfunction) 5. Female athlete triad (osteoporosis, amenorrhea, eating disorders	• To make students understand the exercise guidelines of WHO for different age groups • To make students aware of the common postural deformities • To make students aware of women's sports participation in India and about the special conditions of women • To make students understand menarche and menstrual dysfunction among women athletes. • To make them understand about female athlete triad.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning	**After completing the unit, the students will be able to:** • Differentiate exercise guidelines for different stages of growth and development. • Classify common postural deformities and identify corrective measures. • Recognize the role and importance of sports participation of women in India. • Identify special considerations relate to menarche and menstrual dysfunction. • Express female athlete triad according to eating disorders

Unit 3	**Yoga as Preventive measure for Lifestyle Disease** **1. Obesity:** Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama 2. **Diabetes:**. Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana,Bhujangasana, Shalabhasana,Dhanurasana Supta-vajarasana, Paschimottanasan-a, Ardha-Mastendrasana, Mandukasana,	• To make students Understand about the main life style disease - Obesity, Hypertension, Diabetes, Back Pain and Asthma. • To teach about different Asanas in detail which can help as a preventive Measures for those Lifestyle Diseases.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** * Identify the asanas beneficial for different ailments and health problems. * Recognize importance of various asanas for preventive measures of obesity, diabetes, asthma, hypertension, back pain and arthritis * Describe the procedure for performing a variety of asanas for maximal benefits. * Distinguish the contraindications associated with performing different asanas. * Outline the role of yogic management for various health benefits and preventive measures.

	Gomukasana, Yogmudra, Ushtrasana, Kapalabhati 3. **Asthma:** Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, UttanMandukasan-a, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalbhati, Gomukhasana Matsyaasana, Anuloma-Viloma **4. Hypertension :** Procedure, Benefits & Contraindications for Tadasana, Katichakransan, Uttanpadasana, Ardha Halasana, Sarala Matyasana, Gomukhasana, UttanMandukasan-a, Vakrasana, Bhujangasana, Makarasana, Shavasana,			

	Nadi-shodhanapranayam, Sitlipranayam 5. **Back Pain and Arthritis:** Procedure, Benefits & Contraindications of Tadasan, Urdhawahastootansana, Ardh-Chakrasana, Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujangasana, Gomukhasana, Bhadrasana, Makarasana, Nadi-Shodhana pranayama.			

Unit 4	**Physical Education and Sports for CWSN (Children with Special Needs - Divyang)** 1. Organizations promoting Disability Sports (Special Olympics; Paralympis; Deaflympics) 2. Concept of Classification and Divisioning in Sports. 3. Concept of Inclusion in sports, its need, and Implementation; 4. Advantages of Physical Activities for children with special needs. 5. Strategies to make Physical Activities assessable for children with special needs.	• To make students understand the concept of Disability and Disorder. • To teach students about the types of disabilities & disorders, their causes, and their nature. • To make them aware of Disability Etiquette. • To make the students Understand the advantage of physical activity for CWSN. • To make the students aware of different strategies for making physical activity accessible for Children with Special Needs	▪ Lecture-based instruction, ▪ Technology-based learning, ▪ Group learning, ▪ Individual learning, ▪ Inquiry-based learning, ▪ Kinesthetic learning, ▪ Game-based learning and • Expeditionary learning	**After completing the unit, the students will be able to:** * Value the advantages of physical activities for children with special needs * Differentiate between methods of categorization in sports for CWSN * Understand concepts and the importance of inclusion in sports * Create advantages for Children with Special Needs through Physical Activities * Strategies physical activities accessible for children with specialneeds

Unit 5	**Sports & Nutrition** 1. Concept of balanced diet and nutrition 2. Macro and Micro Nutrients: Food sources & functions 3. Nutritive & Non-Nutritive Componen ts of Diet 4. Eating for Weight control – A Healthy Weight, The Pitfalls of Dieting, Food Intolerance, and Food Myths 5. Importance of Diet in Sports- Pre, During and Post competition Requirements	• To make the students understand the importance of a balanced diet • To clear the concept of Nutrition – Micro & Macro nutrients, Nutritive & non-Nutritive Components of diet • To make them aware of eating for weight loss and the results of the pitfalls of dieting. • To understand food intolerance & food myths	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based • learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** * Understand the concept of a balanced diet and nutrition. Classify Nutritive and Non- Nutritive components of the Diet * Identify the ways to maintain a healthy weight * Know about foods commonly causing food intolerance * Recognize the pitfalls of dieting and food myths
Unit 6	**Test & Measurement in Sports** 1. Fitness Test – SAI Khelo India Fitness Test in school:	• To make students Understand and conduct SAI KHELO INDIA Fitness Test and to make students Understand and conduct General MotorFitness Test	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic	**After completing the unit, the students will be able to:** * Perform SAI Khelo India Fitness Test in school [Age group 5-8

	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, Push-Ups for boys, Modified Push-Ups for girls). 2. Measurement of Cardio-Vascular Fitness – Harvard Step Test – Duration of the Exercise in Seconds x100/5.5 X Pulse count of 1-1.5 Min after Exercise 3. Computing Basal Metabolic Rate (BMR) 4. Rikli & Jones - Senior Citizen Fitness Test o Chair Stand Test for lower body strength o Arm Curl Test for upper body strength	• To make students to determine physical fitness Index through Harvard Step Test/Rockport Test • To make students to calculate Basal Metabolic Rate (BMR) • To measure the fitness level of Senior Citizens through Rikli and Jones Senior Citizen Fitness Test.	learning, • Game-based learning and Expeditionary learning	years/ (class 1-3) and Age group 9-18yrs/ (class 4-12) * Determine physical fitness Index through Harvard Step Test/Rock- port Test * Compute Basal Metabolic Rate (BMR) * Describe the procedure of Rikli and Jones - Senior Citizen Fitness Test

	○ 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 7	**Physiology & Injuries in Sport** 1. Physiological factors determining components of physical fitness 2. Effect of exercise on the Muscular System 3. Effect of exercise on the Cardio-Respiratory System 4. Physiological changes due to aging	• Understanding the physiological factors determining the • components of physical fitness. • Learning the effects of exercises on the Muscular system. • Learning the effects of exercises on Cardiovascular system. • Learning the effects of exercises on the Respiratory system.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning	**After completing the unit, the students will be able to:** * Recognize the physiological factors determining the components of physical fitness. * Comprehend the effects of exercise on the Muscular system and cardiorespiratory systems. * Figure out the physiological changes due to ageing

	5. Sports injuries: Classification (Soft Tissue Injuries - Abrasion, Contusion, Laceration, Incision, Sprain & Strain Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted)	• Learning the changes caused due to aging. • Understanding the Sports Injuries (Classification, Causes, and Prevention) • Understanding the Aims & Objectives of First Aid • Understanding the Management of Injuries		• Classify sports injuries with its Management.
Unit 8	**Biomechanics and Sports** 1. Newton's Law of Motion & its application in sports 2. Types of Levers and their application in Sports. 3. Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports 4. Friction & Sports 5. Projectile in Sports	• Understanding Newton's Laws of Motion and their Application in Sports. • Make students understand the lever and its application in sports. • Make students understand the concept of Equilibrium and its application in sports. • Understanding Friction in Sports. • Understanding the concept of Projectile in sports.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning	**After completing the unit, the students will be able to:** * Understand Newton's Law of Motion and its application in sports * Recognize the concept of Equilibrium and its application in sports. * Know about the Centre of Gravity and will be able to apply it in sports * Define Friction and application in sports. * Understand the concept of Projectile in sports.

Unit 9	**Psychology and Sports** 1. Personality; its definition & types (Jung Classification & Big Five Theory) 2. Motivation, its type & techniques. 3. Exercise Adherence: Reasons, Benefits & Strategies for Enhancing it 4. Meaning, Concept & Types of Aggressions in Sports 5. Psychological Attributes in Sports – Self-Esteem, Mental Imagery, Self-Talk, Goal Setting	• To make students understand Personality & its classifications. • To make students understand motivation and its techniques. • To make students about Exercise Adherence and Strategies for enhancing Adherence to Exercise. • To make them aware of Aggression in sports and types. • To make students understand Psychological Attributes in Sports.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning	**After completing the unit, the students will be able to:** * Classify different types of personality and their relationship with sports performance. * Recognise the concept of motivation and identify various types of motivation. * Identify various reasons to exercise, its associated benefits and strategies to promote exercise adherence. * Differentiate between different types of aggression in sports. * Explain various psychological attributes in sports.
Unit 10	**Training in Sports** 1. Concept of Talent Identification and Talent Development in Sports	• Making the students understand the concept of talent identification and methods in sports • Making the students Understand sports	• Lecture-based instruction, • Technology-based learning, Group learning, • Individual learning, • Inquiry-based learning,	**After completing the unit, the students will be able to:** • understand the concept of talent identification and methods used

	2. Introduction to Sports Training Cycle – Micro, Meso, Macro Cycle. 3. Types & Methods to Develop – Strength, Endurance, and Speed. 4. Types & Methods to Develop – Flexibility and Coordinative Ability. 5. Circuit Training - Introduction & its importance	training and the different cycle in sports training. • Making the students Understand different types & methods of strengths, • endurance, and speed. • Making the students Understand different types & methods of flexibility and • coordinative ability. • Making the students understand Circuit training and its importance	• kinesthetic learning, • Game-based learning and • Expeditionary learning	for talent development in sports. • Understand sports training and the different cycle used in the training process. • Understand different types & methods to develop - strength, endurance, and speed in sports training . • Understand different types & methods to develop – flexibility and coordinative ability. • Understand Circuit training and its importance

GUIDELINES FOR INTERNAL ASSESSMENT

(PRACTICAL/ PROJECTS ETC.)

PRACTICAL	**(Max. Marks 30)**
Physical Fitness Test: SAI Khelo India Test, Brockport Physical Fitness Test (BPFT)*	6 Marks
Proficiency in Games and Sports (Skill of any one IOA recognized Sport/Game of Choice)**	7 Marks
Yogic Practices	7 Marks
Record File ***	5 Marks
Viva Voce (Health/ Games & Sports/ Yoga)	5 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. (SAI Khelo India Test)
- **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. Labelled diagram of Field & Equipment. Also, mention its Rules, Terminologies & Skills.

PRESCRIBED TEXTBOOKS (CLASS XI & XII)

CBSE Physical Education Class XI Text Book
https://cbseacademic.nic.in//web_material/Manuals/PhysicalEducation11_2022.pdf

CBSE Physical Education Class XII Text Book
https://cbseacademic.nic.in/web_material/Manuals/PhysicalEducation12_2022.pdf

PHYSICS

Subject Code – 042

Class XI-XII (2025-26)

Senior Secondary stage of school education is a stage of transition from general education to discipline-based focus on curriculum. The present updated syllabus keeps in view the rigor and depth of disciplinary approach as well as the comprehension level of learners. Due care has also been taken that the syllabus is comparable to the international standards. Salient features of the syllabus include:

- Emphasis on basic conceptual understanding of the content.
- Emphasis on use of SI units, symbols, nomenclature of physical quantities and formulations as per international standards.
- Providing logical sequencing of units of the subject matter and proper placement of concepts with their linkage for better learning.
- Reducing the curriculum load by eliminating overlapping of concepts/content within the discipline and other disciplines.
- Promotion of process-skills, problem-solving abilities and applications of Physics concepts.

Besides, the syllabus also attempts to

- Strengthen the concepts developed at the secondary stage to provide firm foundation for further learning in the subject.
- Expose the learners to different processes used in Physics-related industrial and technological applications.
- Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.
- Promote problem solving abilities and creative thinking in learners.
- Develop conceptual competence in the learners and make them realize and appreciate the interface of Physics with other disciplines.

PHYSICS (Code No. 042)

COURSE STRUCTURE

Class XI - 2025-26 (Theory)

Time: 3 hrs. **Max Marks: 70**

UNIT	CHAPTERS	MARKS
Unit–I	**Physical World and Measurement**	**23**
	Chapter–1: Units and Measurements	
Unit-II	**Kinematics**	
	Chapter–2: Motion in a Straight Line	
	Chapter–3: Motion in a Plane	
Unit–III	**Laws of Motion**	
	Chapter–4: Laws of Motion	
Unit–IV	**Work, Energy and Power**	**17**
	Chapter–5: Work, Energy and Power	
Unit–V	**Motion of System of Particles and Rigid Body**	
	Chapter–6: System of Particles and Rotational Motion	
Unit-VI	**Gravitation**	
	Chapter–7: Gravitation	
Unit–VII	**Properties of Bulk Matter**	**20**
	Chapter–8: Mechanical Properties of Solids	
	Chapter–9: Mechanical Properties of Fluids	
	Chapter–10: Thermal Properties of Matter	
Unit–VIII	**Thermodynamics**	
	Chapter–11: Thermodynamics	
Unit–IX	**Behaviour of Perfect Gases and Kinetic Theory of Gases**	
	Chapter–12: Kinetic Theory	
Unit–X	**Oscillations and Waves**	**10**
	Chapter–13: Oscillations	
	Chapter–14: Waves	
Total		**70**

Unit I: Physical World and Measurements

Chapter–1: Units and Measurements

Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. significant figures, Determining the uncertainty in result**.** Dimensions of physical quantities, dimensional analysis and its applications.

Unit II: Kinematics

Chapter–2: Motion in a Straight Line

Frame of reference, Motion in a straight line, Elementary concepts of differentiation and integration for describing motion, uniform and non- uniform motion, average speed and average velocity and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical and calculus treatment).

Chapter–3: Motion in a Plane

Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors.

Motion in a plane, cases of uniform velocity and uniform acceleration- projectile motion, uniform circular motion.

Unit III: Laws of Motion

Chapter–4: Laws of Motion

Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion.

Law of conservation of linear momentum and its applications.

Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication.

Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).

Unit IV: Work, Energy and Power

Chapter– 5: Work, Energy and Power

Work done by a constant force and a variable force; kinetic energy, work- energy theorem, power.

Notion of potential energy, potential energy of a spring, conservative forces: non-conservative forces, motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.

Unit V: Motion of System of Particles and Rigid Body

Chapter–6: System of Particles and Rotational Motion

Centre of mass of a two-particle system, momentum conservation and Centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod. Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications.

Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions.

Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).

Unit VI: Gravitation

Chapter – 7: Gravitation

Kepler's laws of planetary motion, universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth.

Gravitational potential energy and gravitational potential, escape speed, orbital velocity of a satellite, energy of an orbiting satellite.

Unit VII: Properties of Bulk Matter

Chapter–8: Mechanical Properties of Solids

Elasticity, Stress-strain relationship, Hooke's law, Young’s modulus, bulk modulus, shear modulus of rigidity (qualitative idea only), Poisson's ratio; elastic energy. Application of elastic behavior of materials (qualitative idea only).

Chapter–9: Mechanical Properties of Fluids

Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure.

Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its simple applications (Torricelli's law and Dynamic lift).

Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise.

Chapter–10: Thermal Properties of Matter

Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity.

Heat transfer-conduction, convection and radiation, thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law.

Unit VIII: Thermodynamics

Chapter–11: Thermodynamics

Thermal equilibrium and definition of temperature, zeroth law of thermodynamics, heat, work and internal energy. First law of thermodynamics, Second law of thermodynamics: Thermodynamic state variable and equation of state. Change of condition of gaseous state - isothermal, adiabatic, reversible, irreversible, and cyclic processes.

Unit IX: Behavior of Perfect Gases and Kinetic Theory of Gases

Chapter–12: Kinetic Theory

Equation of state of a perfect gas, work done in compressing a gas.

Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.

Unit X: Oscillations and Waves

Chapter–13: Oscillations

Periodic motion - time period, frequency, displacement as a function of time, periodic functions and their applications.

Simple harmonic motion (S.H.M), uniform circular motion and its equations of motion; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M.
Kinetic and potential energies; simple pendulum derivation of expression for its time period.

Chapter–14: Waves

Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats.

PRACTICALS

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

- Record of at least 8 Experiments [with 4 from each section], to be performed by the students.
- Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.
- Report of the project carried out by the students.

EVALUATION SCHEME

Time 3 hours **Max. Marks: 30**

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

SECTION–A

Experiments

1. To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Callipers and hence find its volume.
2. To measure diameter of a given wire and thickness of a given sheet using screw gauge.
3. To determine volume of an irregular lamina using screw gauge.
4. To determine radius of curvature of a given spherical surface by a spherometer.
5. To determine the mass of two different objects using a beam balance.
6. To find the weight of a given body using parallelogram law of vectors.

7. Using a simple pendulum, plot its graph and use it to find the effective length of second's pendulum.
8. To study variation of time period of a simple pendulum of a given length by taking bobs of same size but different masses and interpret the result.
9. To study the relationship between force of limiting friction and normal reaction and to find the co- efficient of friction between a block and a horizontal surface.
10. To find the downward force, along an inclined plane, acting on a roller due to gravitational pull of the earth and study its relationship with the angle of inclination θ by plotting graph between force and Sinθ.

Activities

1. To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm.
2. To determine mass of a given body using a metre scale by principle of moments.
3. To plot a graph for a given set of data, with proper choice of scales and error bars.
4. To measure the force of limiting friction for rolling of a roller on a horizontal plane.
5. To study the variation in range of a projectile with angle of projection.
6. To study the conservation of energy of a ball rolling down on an inclined plane (using a double inclined plane).
7. To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time.

SECTION–B

Experiments

1. To determine Young's modulus of elasticity of the material of a given wire.
2. To find the force constant of a helical spring by plotting a graph between load and extension.
3. To study the variation in volume with pressure for a sample of air at constant temperature by plotting graphs between P and V, and between P and 1/V.
4. To determine the surface tension of water by capillary rise method.
5. To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.
6. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.
7. To determine specific heat capacity of a given solid by method of mixtures.
8. To study the relation between frequency and length of a given wire under constant tension using sonometer.
9. To study the relation between the length of a given wire and tension for constant frequency using sonometer.
10. To find the speed of sound in air at room temperature using a resonance tube by two resonance positions.

Activities

1. To observe change of state and plot a cooling curve for molten wax.
2. To observe and explain the effect of heating on a bi-metallic strip.
3. To note the change in level of liquid in a container on heating and interpret the observations.
4. To study the effect of detergent on surface tension of water by observing capillary rise.
5. To study the factors affecting the rate of loss of heat of a liquid.
6. To study the effect of load on depression of a suitably clamped metre scale loaded at (i) its end (ii) in the middle.
7. To observe the decrease in pressure with increase in velocity of a fluid.

Practical Examination for Visually Impaired Students Class XI

Note: Same Evaluation scheme and general guidelines for visually impaired students as given for Class XII may be followed.

A. Items for Identification/Familiarity of the apparatus for assessment in practical's (All experiments)

Spherical ball, Cylindrical objects, vernier calipers, beaker, calorimeter, Screw gauge, wire, Beam balance, spring balance, weight box, gram and milligram weights, forceps, Parallelogram law of vectors apparatus, pulleys and pans used in the same 'weights' used, Bob and string used in a simple pendulum, meter scale, split cork, suspension arrangement, stop clock/stop watch, Helical spring, suspension arrangement used, weights, arrangement used for measuring extension, Sonometer, Wedges, pan and pulley used in it, 'weights' Tuning Fork, Meter scale, Beam balance, Weight box, gram and milligram weights, forceps, Resonance Tube, Tuning Fork, Meter scale, Flask/Beaker used for adding water.

B. List of Practicals

1. To measure diameter of a small spherical/cylindrical body using vernier calipers.
2. To measure the internal diameter and depth of a given beaker/calorimeter using vernier calipers and hence find its volume.
3. To measure diameter of given wire using screw gauge.
4. To measure thickness of a given sheet using screw gauge.
5. To determine the mass of a given object using a beam balance.
6. To find the weight of given body using the parallelogram law of vectors.
7. Using a simple pendulum plot L-T and graphs. Hence find the effective length of second's pendulum using appropriate length values.
8. To find the force constant of given helical spring by plotting a graph between load and extension.
9. (i) To study the relation between frequency and length of a given wire under constant tension using a sonometer.

   (ii) To study the relation between the length of a given wire and tension, for constant frequency, using a sonometer.
10. To find the speed of sound in air, at room temperature, using a resonance tube, by observing the two resonance positions.

Note: The above practicals may be carried out in an experiential manner rather than recording observations.

Prescribed Books:

1. Physics Part-I, Textbook for Class XI, Published by NCERT
2. Physics Part-II, Textbook for Class XI, Published by NCERT
3. Laboratory Manual of Physics, Class XI Published by NCERT
4. The list of other related books and manuals brought out by NCERT (consider multimedia also).

Note:

The content indicated in NCERT textbooks as excluded for the year 2025-26 is not to be tested by schools.

CLASS XII (2025-26)

PHYSICS (THEORY)

Time: 3 hrs. **Max Marks: 70**

UNIT	CHAPTERS	MARKS
Unit–I	**Electrostatics**	
	Chapter–1: Electric Charges and Fields	
	Chapter–2: Electrostatic Potential and Capacitance	**16**
Unit-II	**Current Electricity**	
	Chapter–3: Current Electricity	
Unit-III	**Magnetic Effects of Current and Magnetism**	
	Chapter–4: Moving Charges and Magnetism	
	Chapter–5: Magnetism and Matter	**17**
Unit-IV	**Electromagnetic Induction and Alternating Currents**	
	Chapter–6: Electromagnetic Induction	
	Chapter–7: Alternating Current	
Unit–V	**Electromagnetic Waves**	
	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	
Unit–VIII	**Atoms and Nuclei**	**12**
	Chapter–12: Atoms	
	Chapter–13: Nuclei	
Unit–IX	**Electronic Devices**	
	Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits	**7**
Total		**70**

Unit I: Electrostatics

Chapter–1: Electric Charges and Fields

Electric charges, Conservation of charge, Coulomb's law-force between two- point charges, forces between multiple charges; superposition principle and continuous charge distribution.

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

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

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 parallel plate 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 its axis and perpendicular to its axis (qualitative treatment only), torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines.

Magnetic properties of materials- Para-, dia- and ferro – magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties.

Unit IV: Electromagnetic Induction and Alternating Currents

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, wattless 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 Radiation and Matter

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 nth 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 annual examination has to include:

- Record of at least 8 Experiments [with 4 from each section], to be performed by the students.
- Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.
- The Report of the project carried out by the students.

Evaluation Scheme

Max. Marks: 30 **Time 3 hours**

Two experiments one from each section	7+7 Marks
Practical record [experiments and activities]	5 Marks
One activity from any section	3 Marks
Investigatory Project	3 Marks
Viva on experiments, activities and project	5 Marks
Total	**30 marks**

Experiments **SECTION–A**

1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current.
2. To find resistance of a given wire / standard resistor using metre bridge.
3. To verify the laws of combination (series) of resistances using a metre bridge.

OR

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

4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
5. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.

OR

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

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

Activities

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To assemble the components of a given electrical circuit.
5. To study the variation in potential drop with length of a wire for a steady current.
6. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

SECTION-B

Experiments

1. To find the value of *v* for different values of *u* in case of a concave mirror and to find the focal length.
2. To find the focal length of a convex mirror, using a convex lens.
3. To find the focal length of a convex lens by plotting graphs between *u* and *v* or between *1/u* and *1/v*.
4. To find the focal length of a concave lens, using a convex lens.
5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
6. To determine refractive index of a glass slab using a travelling microscope.
7. To find the refractive index of a liquid using convex lens and plane mirror.
8. To find the refractive index of a liquid using a concave mirror and a plane mirror.
9. To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.

Activities

1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
2. Use of multimeter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order.

3. To study effect of intensity of light (by varying distance of the source) on an LDR.
4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
5. To observe diffraction of light due to a thin slit.
6. To study the nature and size of the image formed by a (i) convex lens, or (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
7. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

Suggested Investigatory Projects

1. To study various factors on which the internal resistance/EMF of a cell depends.
2. To study the variations in current flowing in a circuit containing an LDR because of a variation in
   (a) the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance).
   (b) the distance of an incandescent lamp (of fixed power) used to 'illuminate' the LDR.
3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equiconvex lens (made from a glass of known refractive index) and an adjustable object needle.
4. To investigate the relation between the ratio of (i) output and input voltage and (ii) number of turns in the secondary coil and primary coil of a self-designed transformer.
5. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.
6. To estimate the charge induced on each one of the two identical Styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law.
7. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency.
8. To study the earth's magnetic field using a compass needle -bar magnet by plotting magnetic field lines and tangent galvanometer.

Practical Examination for Visually Impaired Students of
Classes XI and XII Evaluation Scheme

Time 2 hours **Max. Marks: 30**

Identification/Familiarity with the apparatus	5 marks
Written test (based on given/prescribed practicals)	10 marks
Practical Record	5 marks
Viva	10 marks
Total	**30 marks**

General Guidelines

- The practical examination will be of two-hour duration.
- A separate list of ten experiments is included here.
- The written examination in practicals for these students will be conducted at the time of practical examination of all other students.
- The written test will be of 30 minutes duration.
- The question paper given to the students should be legibly typed. It should contain a total of 15 practical skill based very short answer type questions. A student would be required to answer any 10 questions.
- A writer may be allowed to such students as per CBSE examination rules.
- All questions included in the question papers should be related to the listed practicals.
- Every question should require about two minutes to be answered.
- These students are also required to maintain a practical file. A student is expected to record at least five of the listed experiments as per the specific instructions for each subject. These practicals should be duly checked and signed by the internal examiner.
- The format of writing any experiment in the practical file should include aim, apparatus required, simple theory, procedure, related practical skills, precautions etc.
- Questions may be generated jointly by the external/internal examiners and used for assessment.
- The viva questions may include questions based on basic theory/principle/concept, apparatus/ materials/chemicals required, procedure, precautions, sources of error etc.

Class XII

A. Items for Identification/ familiarity with the apparatus for assessment in practicals (All experiments)

Meter scale, general shape of the voltmeter/ammeter, battery/power supply, connecting wires, standard resistances, connecting wires, voltmeter/ammeter, meter bridge, screw gauge, jockey Galvanometer, Resistance Box, standard Resistance, connecting wires, Potentiometer, jockey, Galvanometer, Lechlanche cell, Daniell cell [simple distinction between the two vis-à-vis their outer (glass and copper) containers], rheostat connecting wires, Galvanometer, resistance box, Plug-in and tapping keys, connecting wires battery/power supply, Diode, Resistor (Wire-wound or carbon ones with two wires connected to two ends), capacitors (one or two types), Inductors, Simple electric/electronic bell, battery/power supply, Plug- in and tapping keys, Convex lens, concave lens, convex mirror, concave mirror, Core/hollow wooden cylinder, insulated wire, ferromagnetic rod, Transformer core, insulated wire.

B. List of Practicals

1. To determine the resistance per cm of a given wire by plotting a graph between voltage and current.
2. To verify the laws of combination (series/parallel combination) of resistances by Ohm's law.
3. To find the resistance of a given wire / standard resistor using a meter bridge.
4. To determine the resistance of a galvanometer by half deflection method.
5. To identify a resistor, capacitor, inductor and diode from a mixed collection of such items.
6. To observe the difference between
   (i) a convex lens and a concave lens
   (ii) a convex mirror and a concave mirror and to estimate the likely difference between the power of two given convex /concave lenses.
7. To design an inductor coil and to know the effect of
   (i) change in the number of turns
   (ii) Introduction of ferromagnetic material as its core material on the inductance of the coil.
8. To design a (i) step up (ii) step down transformer on a given core and know the relation between its input and output voltages.

Note: The above practicals may be carried out in an experiential manner rather than recording observations.

Prescribed Books:

1. Physics, Class XI, Part -I and II, Published by NCERT.
2. Physics, Class XII, Part -I and II, Published by NCERT.
3. Laboratory Manual of Physics for class XII Published by NCERT.
4. The list of other related books and manuals brought out by NCERT (consider multimedia also).

Note:

The content indicated in NCERT textbooks as excluded for the year 2025-26 is not to be tested by schools and will not be assessed in the Board examinations 2025-26.

QUESTION PAPER DESIGN

Theory (Class: XI/XII)

Maximum Marks: 70 **Duration: 3 hrs.**

S No.	Typology of Questions	Total Marks	Approximate Percentage
1	**Remembering**: Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. **Understanding**: Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	27	38 %
2	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	22	32%
3	**Analysing :** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations **Evaluating:** Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. **Creating**: Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	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**.***

For more details kindly refer to Sample Question Paper of class XII for the year 2025-26 to be published by CBSE at its website.

POLITICAL SCIENCE
Subject Code-028
Classes-XI & XII (2025-2026)

RATIONALE

A discipline of Social Science, Political Science deals with understanding the social structures and methods used to manage a government or State. It also encompasses the historical, philosophical, constitutional, and legal foundation of the political system. It further provides scope to identify the political values and ideas, governing institutions and their policy making process. The subject enhances the ability to address the functions and processes of government and politics in international, national, and state levels. It ensures that students acquire citizenship skills and engage as active citizens by appreciating human diversity. This subject is interdisciplinary by nature and draws upon other social disciplines or branches of knowledge and there by influenced by them in many ways. At Senior Secondary level, curriculum of Political Science is organised in a systematic manner to facilitate students to have an understanding of political ideas, ideologies, institutions, policies, processes, and behaviour, as well as groups, classes, government, law, peace and war which are the bedrock of human society and polity. The contents develop knowledge about current and past political events across the world and also enrich student's writing, communication, data analysis skills. An earnest effort is directed towards laying the foundation for a serious engagement with the discipline and developing competencies that prepare students for higher education, learning, and acquiring knowledge.

AIMS AND OBJECTIVES

1. Indian Constitution at Work:

- Understand the historical circumstances and the processes in which the Constitution was drafted.
- Be familiar with the diverse perspectives that guided the makers of the Indian Constitution.
- Analyse the working of the three pillars of democracy: Legislature, Executive, and Judiciary and their role with changing times.
- Identify the key features of the Indian Constitution and compare these to other constitutions in the world.

2. Political Theory:

- Recognise the ideas, concepts, and values inherent in the political life of a citizen.
- Systematic reflection and critical analysis of the political phenomenon.
- Provide clarity on what is 'political' in relation to 'social', 'economic', 'moral', and the like.
- Augment the ability of students to build a good state in a good society, and create processes, procedures, institutions, and structures which could be rationally achievable.

3. Contemporary World Politics

- Enable an understanding of the nature of political interactions amongst the sovereign states in the World.
- Trace the key political events and processes in the post-cold war era.
- Analyse the all-encompassing impact of various global institutions, processes, and events.
- Promote international understanding and respect for humanity.

4. Politics in India since Independence

- Understand and analyse constitutional institutions and their working in the post-independence era.
- Appreciate the contribution of political leaders in Nation Building.
- Develop the capacity to link Government structure, processes, and their policies with contemporary political realities.
- Acquaint the students to the changing trends and developments in India.

CLASS XI
COURSE STRUCTURE

Chapter No.	Chapter Name	Marks
	PART A **INDIAN CONSTITUTION AT WORK**	
1	Constitution: Why and How?	8
2	Rights in the Indian Constitution	
3	Election and Representation	6
4	Executive	12
5	Legislature	
6	Judiciary	
7	Federalism	6
8	Local Governments	4
9	Constitution as a Living Document	4
10	The Philosophy of the Constitution	
	Marks allotted to Indian Constitution at Work	**40**
	PART B **POLITICAL THEORY**	
1	Political Theory: An Introduction	4
2	Freedom	12
3	Equality	
4	Social Justice	6
5	Rights	4
6	Citizenship	8
7	Nationalism	
8	Secularism	6
	Marks allotted for Political Theory	**40**
	Total	**80**

CLASS XI

COURSE CONTENT

Chapter No. and Name	Learning Outcomes with Specific Competencies
1- Constitution: Why and How? a) Why do we need a Constitution? • Constitution allows coordination and assurance • Specification of decision-making powers • Limitations on the powers of government • Aspirations and goals of a society • Fundamental identity of a people b) The authority of a Constitution • Mode of promulgation • The substantive provisions of constitution • Balanced institutional design c) How was the Indian Constitution made? • Composition of the Constituent Assembly • Procedures • Inheritance of the nationalist movement • Institutional arrangements d) Provisions adapted from Constitutions of different countries	**Students will be able to:** • Appreciate the need fora Constitution. • Understand the historical processes and the circumstances in which the Indian Constitution was drafted. • Critically evaluate how constitutions, govern the distribution of power in society. • Analyse the ways in which the provisions of the Constitution have worked in real political life.
2- Rights in the Indian Constitution a) The importance of rights • Bill of Rights b) Fundamental rights in the Indian Constitution • Right to Equality • Right to Freedom • Right against Exploitation • Right to Freedom of Religion • Cultural and Educational Rights • Right to Constitutional Remedies c) Directive principles of state policy • What do the directive principles contain? d) Relationship between fundamental rights and directive principles	**Students will be able to:** • Analyse the working of the Constitution in real life • Learn to respect others, think critically, and make informed decisions • Identify violations of the rights to equality and freedom in the society around them • Justify the need for reasonable restrictions on the rights guaranteed. • Use freedom of expression to advocate for ensuring rights is given to people around them.

3. Election and Representation a) Elections and democracy b) Election system in India • First Past the Post System • Proportional Representation c) Why did India adopt the FPTP system? d) Reservation of constituencies e) Free and fair elections • Universal franchise and right to contest • Independent Election Commission f) Electoral Reforms	**Students will be able to:** • Identify different types and methods of election • Develop critical thinking about the role of various stakeholders in ensuring free and fair elections. • Demonstrate the innate role played by Election Commission • Compare election systems of different countries of the world.
4. Executive a) What is an executive? b) What are the different types of executives? c) Parliamentary executive in India • Power and position of President • Discretionary Powers of the President d) Prime Minister and Council of ministers e) Permanent Executive: Bureaucracy	**Student will be able to:** • Recognise the meaning of Executive. • Compare and contrast the Parliamentary and Presidential Executive. • Analyse the composition and functioning of the executive. • Know the significance of the administrative machinery.
5. Legislature a) Why do we need a parliament? b) Why do we need two houses of parliament? • Rajya Sabha • Lok Sabha c) What does the parliament do? • Powers of Rajya Sabha • Special Powers of Rajya Sabha d) How does the parliament make laws? e) How does the parliament control the executive? f) What do the committees of parliament do? g) How does the parliament regulate itself?	**Students will be able to:** • Describe the law- making process in India. • Differentiate between the powers and functions of Lok Sabha and Rajya Sabha. • Examine the parliamentary control over the Executive. • Analyse the role of Parliamentary committees for the success of Indian democracy.
6. Judiciary a) Why do we need an independent judiciary? • Independence of Judiciary • Appointment of Judges • Removal of Judges b) Structure of the Judiciary	**Students will be able to:** • Identify the different aspects which makes the Judiciary independent • Compare and contrast the different jurisdictions

c) Jurisdiction of supreme Court • Original Jurisdiction • Writ Jurisdiction • Appellate Jurisdiction • Advisory Jurisdiction • Judicial Activism d) Judiciary and Rights • Judiciary and Parliament	• Analyse the reasons why Judiciary has become proactive. • Examine the reasons for the conflicts between the judiciary and parliament with respect to Constitutional Amendments.
7. Federalism a) What is Federalism? b) Federalism in the Indian Constitution • Division of Powers c) Federalism with a strong central government d) Conflicts in India's federal system • Centre-State Relations • Demands for Autonomy • Role of Governors and President's Rule • Demands for New States • Interstate Conflicts e) Special provisions • Jammu and Kashmir	**Students will be able to:** • Explain the basic features of a federation. • Identify the different levels of the government &subjects on which the union and state governments can make laws. • Discuss the various constitutional provisions that led to a strong Centre in India.
8. Local Governments a) Why local governments? b) Growth of Local Government in India • Local Governments in Independent India c) 73rd and 74thamendments d) 73rd Amendment • Three Tier Structure • Elections • Reservations • Transfer of Subjects • State Election Commissioners • State Finance Commission e) 74th Amendment • Implementation of 73rdand 74th Amendments	**Students will be able to:** • Understand the Panchayati Raj system of local government in India, its emergence and significance • Identify the objectives, functions and sources of income of rural and urban local government bodies • Justify the significance of 73rd and 74th constitutional amendments • Acknowledge and examine the significance of decentralization • Introspect and realise the need to empower local government bodies
Constitution as a Living Document a) Are constitutions static? b) How to amend the constitution? c) Why have there been so many amendments?	**Students will be able to:** • Analyse the working of the Constitution. • Know the various amendments that have

9. Contents of amendments made so far • Differing Interpretations • Amendments through Political Consensus • Controversial Amendments e) Basic structure and evolution of the constitution f) Constitution as a Living Document • Contribution of the Judiciary • Maturity of the Political Leadership	• taken place and the controversies raised. • Appreciate why the Constitution is called a Living Document.
10. The Philosophy of the Constitution a) What is meant by philosophy of the constitution? • Constitution as Means of Democratic Transformation b) Why do we need to go back to the Constituent Assembly? c) What is the political philosophy of our constitution? • Individual freedom • Social Justice • Respect for diversity and minority rights • Secularism • Universal franchise • Federalism • National identity d) Procedural Achievements e) Criticisms • Limitations	**Students will be able to:** • Appreciate the philosophical vision of our Constitution. • Recognise the core features of the Indian Constitution. • Evaluate the strengths and limitations of the Constitution.
PART B **POLITICAL THEORY**	
1. Political Theory: An Introduction a) What is politics? b) What do we study in political theory? c) Putting Political theory into practice d) Why should we study political theory?	**Students will be able to:** • Define the term politics and identify various political principles. • Explain the innate ideas of various Political theories. • Appreciate the contribution of Political Thinkers

2. Freedom a) The Ideal of freedom b) The sources of Constraints-Why do we need constraints? c) The Harm Principle d) Negative and Positive liberty	**Students will be able to:** • Appreciate the ideal of freedom. • Critically evaluate the dimensions of negative and positive liberty. • Demonstrate spirit of enquiry • Explain the ideas introduced by J.S. Millin Harm Principle. • Assess the possible limitations on freedom resulting from the social and economic structures of society.
3. Equality a) Why does equality matter? • Equality of opportunities • Natural and Social Inequalities b) Three dimensions of equality c) Feminism, Socialism d) How can we promote equality?	**Students will be able to:** • Understand the moral and political ideals of equality. • Assess how equality is perceived through different ideologies • Recognise the means and methods to promote equality. • Evaluate the possible solutions to minimise inequality.
4. Social Justice a) What is Justice? • Equal Treatment for Equals • Proportionate Justice • Recognition of Special Needs b) Just distribution c) John Rawls Theory of Justice d) Pursuing Social Justice e) Free Markets versus State Intervention	**Students will be able to:** • Classify the different dimensions of justice. • Appreciate the measures taken by the government of India to secure social justice. • Enlist the basic minimum requirements of people for living a healthy and productive life. • State John Rawls' theory of veil of ignorance.
5. Rights a) What are Rights? b) Where do rights come from? c) Legal rights and the state d) Kinds of rights e) Rights and responsibilities	**Students will be able to:** • Define rights • Identify the need for rights and its importance to mankind. • why rights needto be sanctioned by law. • Describe the features of different kinds of rights.
6. Citizenship a) Introduction b) Full and equal membership c) Equal Rights d) Citizen and Nation e) Universal Citizenship f) Global Citizenship	**Students will be able to:** • Explain the meaning of citizenship. • Contribute to meaningful discussion on ways of granting citizenship. • Discuss the probable solutions or alternatives to solve citizenship issue • Analyse the problems to be surmounted to strengthen links between the people and governments

7. Nationalism a) Introducing Nationalism b) Nations and Nationalism • Shared Beliefs and History • Shared National Identity c) National self-determination d) Nationalism and Pluralism	**Students will be able to:** • Understand the concepts of nation and nationalism • Assess the strengths and limitations of nationalism. • Identify and build an understanding on the factors related to creation of collective identities • Examine the concept of national self-determination • Acknowledge the need to make nations more democratic and inclusive
8. Secularism a) What is Secularism? b) Inter-religious Domination c) Intra-religious Domination d) Secular State • The western model of secularism • The Indian model of secularism e) Criticisms of Indian secularism • Western Import and Minoritism • Interventionist • Vote Bank Politics	**Student will be able to:** • Define Secularism. • Differentiate between Inter-religious and Intra-Religious Domination. • Recognise the concept of a Secular State. • Compare Western and Indian Model of Secularism. • Make an appraisal of Indian Secularism.

Prescribed Textbooks:

1. Indian Constitution at Work, Class XI, Published by NCERT
2. Political Theory, Class XI, Published by NCERT
3. Added Reference Material available with the document in the Annexure

Note: The above textbooks are also available in Hindi and Urdu versions.

CLASS XII

COURSE STRUCTURE

Chapter No.	Chapter Name	Marks Allotted
PART A-CONTEMPORARY WORLD POLITICS		
1	The End of Bipolarity	6
2	Contemporary Centres of Power	6
3	Contemporary South Asia	6
4	International Organizations	6
5	Security in the Contemporary World	6
6	Environment and Natural Resources	6
7	Globalisation	4
	PART A - Total	**40**
PART B-POLITICS IN INDIA SINCE INDEPENDENCE		
1	Challenges of Nation-Building	6
2	Era of One-Party Dominance	4
3	Politics of Planned Development	2
4	India's External Relations	6
5	Challenges to and Restoration of the Congress System	4
6	The Crisis of Democratic Order	4
7	Regional Aspirations	6
8	Recent Developments in Indian Politics	8
	PART B - Total	**40**
	TOTAL	**80**

CLASS XII
COURSE CONTENT

Chapter No. and Name	Learning Outcomes with Specific Competencies
1. The End of Bipolarity Topics to be focused: 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 f) India's relations with Russia and other post-communist countries	**Students will be able to:** • Identify the basic features of the Soviet System. • Discuss the background and outcome of disintegration of the Soviet Union. • Examine the consequences of unipolar world • Assess the features of Shock Therapy • Probe into the recent happenings in the Post-Communist Countries. • Trace the developments between India & Russia
2. Contemporary Centres 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	**Students will be able to:** • Compare and contrast the importance of European Union and ASEAN. • Evaluate the extent of rise of Chinese economy and its impact on world politics. • Summarise India's relations with China.
3. 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	**Students will be able to:** • Identify & locate the seven countries of the South Asian region. • Appreciate the mixed record of democracy in the South Asian region. • Examine the role of Political leaders • Reflect upon the causes of various conflicts and movements in this region. • Justify the creation of SAARC • Understand the involvement of US and China in South Asia.
4. International Organizations 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	**Students will beable to:** • Define International Organisation • Appreciate the role of United Nations and its agencies • Reflect on the events taking place in the post-cold war era • Understand the need for reforms in the United Nations

e) Reform of the UN after ColdWar f) Reform of Structures, Processes and Jurisdiction of the UN h) India and the UN Reforms i) Key Agencies: IMF, World Bank, WTO, ILO, IAEA. j) NGO: Amnesty International, Human Rights Watch. g) Implications and Future of International Organisations	
5. 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	**Students will be able to:** • Recognise the causes of security threats • Enhance analytical skills to provide solutions to security concerns. • Develop critical thinking about the role of various stakeholders in ensuring security today.
6. 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 f) Environmental Movements g) Resource Geopolitics e) Rights of Indigenous peoples	**Students will be able to:** • Enlist and explain the facts related to global environmental issues • Recognise and understand the need to conserve critical resources Demonstrate knowledge and appreciation towards India's responsibility in protecting environment • Realise the need to conserve resources and exhibit responsibility towards prudential use to facilitate sustainable development • Know about the nature of concerns of indigenous communities and understand how the governments of different countries respond to their plea
7. Globalisation Topics to be focused: a) Concept of globalisation b) Causes and Consequences of globalisation c) India and globalization d) Resistance to globalisation e) India and resistance to globalisation	**Students will be able to:** • Appreciate the significance of Globalisation • Elucidate the political, economic, and cultural dimensions of Globalisation. • Critically evaluate the impact of globalisation on India. • Draw attention to resistance movements to Globalisation and envisage its future trends.

PART B-POLITICS IN INDIA SINCE INDEPENDENCE	
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.	**Students will be able to:** • Analyse the challenges which Independent India faced. • Describe the factors that led to the partition of India. • Explain the circumstances under which different princely states signed the Instrument of Accession. • Assess how language became the basis of reorganisation of the states. • Evaluate the role played by leaders in Nation Building.
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.	**Students will be able to:** • Appreciate the sustenance of democratic politics in the country. • Evaluate the electoral politics post-Independence • Assess the dominance of the Indian National Congress from 1952 to1967. • Evaluate the role of Opposition parties
3. Politics of Planned 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.	**Students will be able to:** • Identify the varied option considered by the government to balance growth and socio-economic justice. • Know the difference between Left and Right Ideology • Understand the need for the formation of the Planning Commission. • Appreciate the need for strategic long-term development programme and policies
4. India's External Relations Topics to be focussed: a) International Context b) The Policy of Non-Alignment.	**Students will be able to:** • Recognise the significance of NAM • Interpret, compare and contrast multi-lateral aspects of Indo-China relationship • Demonstrate knowledge on Indo-Pak wars

• 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.	• Appreciate the steps taken by Indian government to develop military capacity • Reflect and introspect on the choices that the country must consider for the cause of development and peace building
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 Election1967 • 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	**Students will be able to:** • Understand the challenges of political succession after Nehru. Evaluate the opposition unity and the Congress split as a challenge to Congress dominance. • Compare and contrast the new Congress and the old Congress. • Summarise the initiatives taken by Indira Gandhi to overcome the challenges faced by her • Analyse the process of restoration of the Congress system
6. The Crisis of Democratic Order Topics to be focused: a) Background to Emergency. • Economic Context. • Gujarat and Bihar Movements • Conflict with Judiciary c) Declaration of Emergency • Crisis and response • Consequences c) Lessons of the Emergency. d) Politics after Emergency. • Lok Sabha Elections 1977 • Janata Government d) Legacy	**Students will be able to:** • Understand the causes and consequences of Emergency • Examine the lessons of Emergency • Evaluate the rule of Janata Government

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 Integration	**Students will be able to:** • Discuss the implications of regional demands. • Analyse the importance of integrity in India. • Appreciate the initiatives taken by the government in dealing with regional aspirations
8. Recent Developments in Indian Politics 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	**Students will be able to:** • Understand momentous changes taking place in the nation since 1989 • Trace the rise and growth of BJP. • Identify the areas of growing consensus

Prescribed Books:

1. Contemporary World Politics, Class XII, Published by NCERT
2. Politics in India since Independence, Class XII, Published by NCERT
3. Added Reference Material available with the document in the Annexure

Note: The above textbooks are also available in Hindi and Urdu Languages.

CLASS XI-XII
QUESTION PAPER DESIGN

S. No.	Competencies	Marks	Percentage
1	**Knowledge and Remembering:** Exhibit memory of previously learned material by recalling facts, terms, basic concepts.	**22**	**27.5%**
2	**Understanding**: Understanding of facts and ideas by organizing, comparing, explaining, describing, and stating main ideas.	**24**	**30%**
3	**Applying**: Solve problems by applying acquired knowledge, facts to interpret a situation/ cartoon/ clippings/ sources/ Map	**22**	**27.5%**
4	**Analysis and Evaluation:** Classify, compare, contrast, or differentiate between pieces of information; organise and/ or integrate from a variety of sources; Examine, synthesize information into parts and identify motives or causes. Make inferences and find evidence to support generalizations.	**12**	**15%**
		80	**100%**

Note: Competency based questions for the examinations to be conducted in the academic year 2025-26 will be 50% in class XII.

QUESTION PAPER DESIGN

Book	Objective Type 1(M)	SA Type I 2(M)	SA Type II (4M)	Passage/Map/ Cartoon based Questions(4M)	LA Type (6M)	Total Weightage
Contemporary World Politics	6	3	3	1	2	40
Politics in India since Independence	6	3	2	2	2	40
Project/Practical						20
Total No. of Marks and Questions	**12**	**6**	**5**	**3**	**4**	**80+20**

NOTE-

1. Question paper will be in five parts (A, B, C, D & E). There will be an internal choice in Part C and Part-E.
2. In order to assess different mental abilities of learners, question paper is likely to include questions based on passages, visuals such as maps, cartoons.
3. Map question can be given from any lesson of Book 2 (Politics in India since Independence); but weightage of lessons should remain unaltered. The Maps available in the official websites of Govt of India may be used.
4. Cartoon and passage-based questions can be asked from either textbook, but weightage of lessons should be maintained

CLASS XI &XII
GUIDELINES FOR PROJECT WORK

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 visualise 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
- analyse and evaluate real world scenarios using social constructivism, a theory based on observation and scientific study
- become independent and empowered to choose their topic and gather data from a variety of source, investigate varied viewpoints acquired and arrive at logical deductions.
- enquire into, and reflect on, issues independently /in collaboration with others and identify the limitations
- develop 21st century skills of communication, cooperation, coordination, critical thinking, creativity and collaboration to produce an extended and independent work.

Role of the teacher

A teacher should:

- help each learner select the topic based on recently published extracts from the news media, government policies, RBI bulletin, NITI *Aayog* reports, IMF/World Bank reports etc., after detailed discussions and deliberations of the topic.
- play the role of a facilitator to support and monitor the project work of the learner through periodic discussions.
- guide the research work in terms of sources for the relevant data.
- ensure that students understand the relevance and usage of primary evidence and other sources in their projects

- ensure that students are able to derive a conclusion from the content; cite the limitations faced during the research and give appropriate references used in doing the research work
- educate learner about plagiarism and the importance of quoting the source of the information to ensure authenticity of research 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 and for class XI the evaluation can be done by the internal examiner.
- 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:

S.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**

Class XII: Assessment will be done by external examiner in coordination with internal examiner and the date of Project Assessment will be fixed by CBSE. The project reports are to be preserved by the school till the final results are declared, for scrutiny by the Board.

Class XI: Assessment will be done by internal examiner.

SUGGESTED TOPICS

CLASS XI

1. Making of the Constitution.
2. Elections in India.
3. Working of the Indian Judiciary System.
4. Social Justice: Are ethics followed in Indian Politics
5. Human Rights Act and its gratification in India.
6. Political impact on Indian Legislation.

CLASSXII

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. Imposition of Emergency in India
19. NDA III and NDA IV – Social and Economic welfare programmes.

ANNEXURE

NOTE: The additional reference material is for classroom transaction and will not be assessed in the Board examination.

ADDITIONAL REFERENCE MATERIAL- CLASS XI

Part A - Indian Constitution at Work

Chapter -3: Election and Representation

Sub-Topic: 'Electoral Reforms in Indian Politics'

Electoral Reforms in the 21st Century include use of EVM [Electronic Voting Machine], VVPAT [Voter Verifiable Paper Audit Trail] and NOTA [None of the Above]. Restriction on exit polls, ceiling on election expenditure has been raised from 70 lakhs to 95 lakh rupees in bigger states like Maharashtra, Madhya Pradesh, Uttar Pradesh, West Bengal and Karnataka. And 54 lakhs to 75 lakhs in Smaller States which include Goa, Sikkim, Arunachal Pradesh and UTS for the Lok Sabha elections. For Assembly elections, expenditure limits have been enhanced from 28 lakh rupees to 40 lakhs in bigger states and from 20 lakhs to 28 lakhs in smaller states and the use electoral bonds in election funding are some of the major reforms initiated by the Election Commission of India that have sought to bring about revolutionary changes in the electoral process and the voter behaviour in contemporary India.

Chapter 6: Judiciary

Sub-Topics: 'Judiciary Overreach'

When judiciary assumes the roles and functions of the legislature and executive, thus diluting the concept of separation of powers, it becomes judicial overreach. Unrestrained activism on the part of judiciary often leads to its overreach.

We all know that Article 142 and judicial review have been put to many constructive uses but some actions like declaring the NJAC (National Judicial Appointment Commission) unconstitutional as it tried to apply checks on judicial power highlight the need for judicial restraints in the exercise of judicial review**.**

Chapter 7: Federalism

Sub-Topics: 'Quasi Federalism'. 'Competitive Federalism'

Quasi Federalism: In the context of special features and provisions of Indian federalism we use the phrase, 'Quasi Federalism', a concept given by K. C. Wheare. Quasi federalism represents a strong

centre with comparatively less strong units. Wheare describes the Indian case in its formative phase as a ‘quasi federation – A unitary state with subsidiary federal features rather than a federal state with subsidiary unitary features’.

Cooperative Federalism: Cooperative federalism is the concept which reflects the relationship between the Union and the States where both come together and resolve the common problems with each other’s cooperation in amicable manner thus contributing towards the growth of a strong federation. It shows the horizontal relationship between the Union and the States where none is placed over and above on the other. To ensure this strong relationship between the two, the Indian constitution has evolved and incorporated certain instruments and agencies like the Inter-State Councils, Zonal Councils, the 7th Schedule, etc.

Competitive Federalism: Competitive federalism places all states vis a vis the Union on equal and competing footing where the best performing states can take the maximum benefits of the resources, services and taxes. It ensures a healthy competition among states leading towards better performance and delivery which constitute important part of governance. The post- liberalization era reflects the trend of competitive federalism where states are more autonomous, accountable, and efficient in their functioning.

Chapter 9: Constitution as a Living Document Sub-Topics: Constitution Amendments

As of 2024, there have been total 106 amendments of the Constitution of India. Source: https://legislative.gov.in/constitution-of-india/

Part B- Political Theory

Chapter 2: Freedom

Sub-Topics: ‘Liberty vs Freedom’

We hear a lot around us that people appear to use the word liberty and freedom as synonyms of each other. But there are some fundamental differences between these two concepts that must be understood. Liberty comes from the Latin word “libertatem” which means “condition of a freeman”. While freedom come from the English word “freedom” which means “state of free will”. Liberty is power to act and express oneself according to one’s will while freedom is the power to decide one’s action. Freedom is more concrete concept than liberty which is more associated with an individual’s connection with the state rather than with other individuals and circumstances. State guarantees freedom through the liberty it grants to its citizens.

The difference between these two concepts can briefly be outlined as follows:

	Liberty	Freedom
•	Condition of a freeman	State of freewill
•	Power to act	Power to decide
•	Free to do something	Free from something

The common feature between these two concepts is that both remain unconstrained, which means that their realization is free from any constrain. Further, both follow rightful or ethical conformity in terms of their realization.

Chapter 4: Social Justice

Sub-Topics: 'Different Dimensions of justice'

Till now we have tried to understand what the term justice means. After considering this, we need to know different dimensions of justice which may help us in establishing a just society. Legal, social, political and economic justice are the key dimensions of justice. Here, we will try to understand these dimensions in some details.

Legal Justice: It is a narrow concept of justice which is associated with the legal system and legal procedure existing in a society. The court of law interprets the law and applies it after hearing the partners involved in a dispute. Here, justice is what administered by the court of law and the interpretation of the judge is considered to be an embodiment of justice.

Political Justice: In any democratic society political justice means providing equal political rights. Political justice stands for a free and fair participation of people in the political sphere. Universal adult franchise is the expression of political jus tice. Equality of opportunity in getting elected and in holding public offices, freedom of expression and association are important pillars of political justice.

Social Justice: It means to end all types of social inequalities and to provide proper opportunity to every citizen in every sphere of life, to develop her/his personality to ensure equality of law, prohibition of discrimination, social security, provision of equal political rights, etc. The concept of social justice is based on the belief that all human beings are equal and no discrimination should be made on the ground of race, religion, caste, gender and place of birth.

Economic Justice: It means to provide equal opportunities to everyone to earn her/his livelihood. It also means to help such people who are not able to work and earn their livelihood. The basic need of every person such as food, cloth, shelter and education should be fulfilled. It stands for by assuring adequate means of livelihood to all, by making provisions for equal pay for equal work, fair

distribution of resources, equal economic opportunity to all, etc.

While the concept of political justice is closely linked with the ideal of “liberty”, economic and legal justice with “equality” and social justice with “fraternity”, a just combination of all these four dimensions will help in achieving justice in life.

Chapter 5: Rights

Sub-Topics: ‘Human Rights’

Human rights are those rights which all human beings are entitled by virtue of being human. It is based on the principle of respect for the individual. The fundamental assumption behind the concept of human rights is that every person is amoral and rational being who deserves to be treated with dignity. Human rights are both universal and fundamental; these are universal in the sense that they belong to all human beings irrespective of race, nationality, community, religion, gender, etc.; these are also fundamental because once given, these cannot be taken back.

Although the presence of human rights can be traced to the ancient Indian philosophy and culture, the concept formally originated at the international level in 1948 with the UN Declaration of Human Rights listing 30 rights for all people across the globe.

Chapter 7: Nationalism Sub-Topics: ‘Multiculturalism’

Multiculturalism in the general sense is the coexistence of people of different religions, cultural groups and communities in all countries of the globe. Originated in the 1970s with a counter-culturalism and human rights movement in opposition to the homogenization of other cultures in favor of the white culture of America and Europe, multiculturalism broadly comprises the principles of both ‘acceptance’ and ‘reverence’. It expects all countries of the globe to give equal acceptance and reverence to the cultural groups. In the India context, the concept of multiculturalism is identified with the notion of "Salad Bowl", advocated by social scientist, Ashish Nandy. It shows that different cultural groups within a nation maintain their identity with their respective distinct forms.

CLASS XII

Part A: Contemporary World Politics

Chapter-1: The End of Bipolarity

Sub-Topic: ‘Arab Spring’

he 21st century witnessed emergence of new developments for democracies and democratization in West Asian countries, one such event is characterised as Arab Spring that began in 2009. Located in Tunisia, the Arab Spring took its roots where the struggle against corruption,

unemployment and poverty was started by the public which turned into a political movement because the people considered the existing problems as outcome of autocratic dictatorship. The demand for democracy that started in Tunisia spread throughout the Muslim-dominated Arab countries in West Asia. Hosni Mubarak, who had been in power in Egypt since 1979, also collapsed as a result of the massive democratic protests. In addition, the influence of Arab Spring could also be seen in Yemen, Bahrain, Libya and Syria where similar protests by the people led to democratic awakening throughout the region.

Chapter-2: Contemporary Centre's of Power

Sub-Topic: 'BRICS'

The term BRICS refers to Brazil, Russia, India, China, and South Africa respectively. BRIC was founded in 2006 in Russia. BRIC turned into BRICS after the inclusion of South Africa in its first meeting in the year 2009. The key objectives of BRICS are primarily to cooperate and distribute mutual economic benefits among its members besides non-interference in the internal policies of each nation and mutual equality. The 11th conference of the BRICS concluded in Brazil in 2019, chaired by Brazilian President Jair Bolsonaro.

Sub-Topic: 'Russia'

Russia has been the largest part of the former Soviet Union even before its disintegration. After the dissolution of the Soviet Union in late 1980s and early 1990s, Russia emerged as the strong successor of USSR [Union of Soviet Socialist Republics].

Russia's GDP is currently 11th in the world. Russia has reserves of minerals, natural resources and gases that make it a powerful country in the global world. In addition, Russia is a nuclear state with a huge stock of sophisticated weapons. Russia is also a permanent member of the UN Security Council, called P-5.

Sub-Topic: 'India'

The 21st century India is being seen as an important emerging global power. The world is experiencing the power and rise of India in a multidimensional way. The economic, cultural, strategic position of the country with a population of more than135 crores is very strong. From an economic perspective, targeting the goal of a $5 trillion economy, a competitive huge market, an ancient inclusive culture with 200 million people of Indian Diaspora spreading across the globe impart distinct meaning and salience to India as a new Centre of power in the 21st century.

From a strategic perspective, the military of India is self-sufficient with indigenous nuclear

technology making it another nuclear power. ‘Make in India’ scheme in technology and science is another milestone of Indian economy. All these changes are making India an important Centre of power in the present world.

Sub-Topic: ‘Israel’

Shown on the world map with a pointer, Israel has emerged as one of the most powerful nations in the 21st century world in terms of science and technology, defence, intelligence besides economy. Situated in the middle of the burning politics of West Asian countries, Israel has reached to the new heights of global political standing by virtue of its indomitable defence prowess, technological innovations, industrialization and agricultural development. Sustaining against adversity is the principle with which a small Jewish-Zionist nation, i.e., Israel is placed in the contemporary global politics in general and the Arab-dominated West Asian politics in particular.

Chapter-4: International Organisation

Sub-Topic: ‘UNESCO’

The United Nations Educational, Scientific and Cultural Organization (UNESCO) was established on 4 November 1946. With its headquarter in Paris, France, UNESCO is a special body of the United Nations whose main objective is to promote education, natural science, society and anthropology, culture and communication. During past several years, the special work done by UNESCO has been to promote literacy, technical and educational training and independent media etc. all across its member nations.

Sub-Topic: ‘UNICEF’

The United Nations International Children's Emergency Fund (UNICEF) was established in 1946 by the United Nations General Assembly as a body whose main task was to collect emergency funds for children and to help in their development work all across the world. Apart from this, UNICEF helps and encourages the works that promote children's health and better life in all parts of the world. With its’ headquarter in New York, United States, UNICEF has been working successfully in almost all 193 countries of the world.

Sub-Topic: ‘ILO’

The International Labour Organization (ILO), founded in October 1919 with its headquarter in Geneva, Switzerland, is a body of the United Nations which aims to promote efficient conditions of social justice and work for workers through international labour standards at the global level. In addition, there is an incentive for women and male workers to engage in productive work and to create safety, parity and self-respectful conditions for them at the workplace.

Chapter-5: Security in the Contemporary World

Sub-Topic: 'Terrorism'

Terrorism refers to systematic use of brutal violence that creates an atmosphere of fear in society. It is used for many purposes, very prominently the politico-religious purposes.

There could be three broad meanings of terrorism:

- A systematic use of terror, often violent, especially as a means of coercion.
- Violent acts which are intended to create fear (terror); are perpetrated for a religious, political or, ideological goal; and deliberately target or disregard the safety of non-combatants (civilians).
- Acts of unlawful violence and war.

There is not a single nation in the world that does not suffer from terrorism. Although some countries have tried to divide terrorism into good and bad terrorism, India has always denied this distinction. India's current Prime Minister Narendra Modi has also clarified that terrorism cannot be divided into good or bad; it is a global problem and should be combated collectively.

Part B

Politics in India since Independence

Chapter-1: Challenges of Nation Building

Sub-Topic: 'Patel and National Integration'

The first deputy Prime Minister and Home Minister of India, Sardar Vallabhbhai Patel, emerged as a major leader of the freedom movement after the Kheda Satyagraha (1918) and the Bardoli Satyagraha (1928).

At the time of independence, the problem of integration of princely states was a big challenge for the national unity and integrity of India. Under such difficult times, Sardar Patel undertook the daunting tasks of uniting all 565 princely states of India. Known as an 'Iron Man' of India, Patel's approach to the question of the merger of princely states into independent India was very clear. He was not in favour of any compromise with the territorial integrity of India. By his political experience, diplomatic prowess and foresightedness, out of India's 565 princely states many had already given their consent to merge with India even before achieving the independence.

Sardar Patel faced key challenges of integration from three states, viz., Hyderabad, Junagarh and Kashmir. It was under his leadership that Indian forces compelled Hyderabad and Junagarh to

merge with India. Keeping well- versed with Pakistan's intentions from Jinnah's divisive 'Two Nation Theory', Sardar Patel's opinion on Kashmir was different from other leaders. Like Hyderabad, he also wanted Kashmir's integration with India through military operations. But due to various reasons, Sardar Patel could not succeed in integrating Kashmir fully with India. However, Patel will always remain as an astounding leader who combined in himself the features of a true 'Nationalist', 'Catalyst' and 'Realist' – popularly characterised as NCR in Indian political history.

Chapter-3: Politics of Planned Development

Sub-Topic: 'NITI Aayog'

After independence, a Planning Commission based on socialist model was formed for the planned development of India. But in the era of globalization, especially in the 21st century, it was becoming ineffective and irrelevant, particularly in terms of coping with the pressing challenges of development. Hence, during his Independence Day speech on 15 August 2014, Prime Minister Narendra Modi talked about the abolition of the Planning Commission. NITI Aayog was constituted in place of Planning Commission on 1 January 2015 with the objective of providing the necessary and technical advice to the Union Government regarding policy making at the Central and State levels.

The Prime Minister of India is the ex-officio Chairman of NITI Aayog and he appoints the Vice Chairperson of NITI Aayog. The first Vice Chairperson of NITI Aayog was Arvind Panagariya. Shri Suman Bery is the current Vice Chairperson of NITI Aayog.

To harmonise the interests of national security and economic policy and to prepare strategic and long-term framework of policy and program, NITI Aayog acts as a think tank of the Union Government. By adopting a 'Bottom-Up Approach', the NITI Aayog acts in the spirit of cooperative federalism as it ensures equal participation of all states in the country.

Sub-Topic: National Development Council (NDC)

The National Development Council (NDC) or Rashtriya Vikas Parishad is the apex body for decision creating and deliberations on development matters in India, presided over by the Prime Minister. It was set up on 6 August 1952 under the chairmanship of India's first Prime Minister Pandit Jawaharlal Nehru to strengthen and mobilise the effort and resources of the nation in support of the Five Year Plans made by Planning Commission. The Council comprises the Prime Minister, the Union Cabinet Ministers and Chief Ministers of all States or their substitutes, representatives of the Union Territories and the members of the NITI Aayog (erstwhile Planning Commission).

Objectives of the Council:

- To secure cooperation of the states in the execution of the plan
- To strengthen and mobilise the effort and resources of the nation in support of the Plan
- To promote common economic policies in all vital spheres and
- To ensure the balanced and rapid development of all parts of the country.

Functions of the Council:

- To prescribe guidelines for the formulation of the National Plan, including the assessment of resources for the Plan;
- To consider the National Plan as formulated by the NITI Aayog.
- To make an assessment of the resources required for implementing the Plan and to suggest measures for augmenting them.
- To consider important questions of social and economic policy affecting national development; and
- To review the working of the Plan from time to time and to recommend such measures as are necessary for achieving the aims and targets set out in the National Plan.
- To recommend measures for achievement of the aims and targets set out in the national Plan.

Chapter-4: India's External Relations

Sub-Topic: 'India-Israel Relation'

Nearly 45 years after independence, due to various reasons, India's foreign policy with Israel remained largely unexplored notwithstanding the two nations gaining independence from the British colonial rule in 1947 and 1948 respectively.

Though historical and cultural ties between India and Israel have gone back from times immemorial, diplomatic relations formally developed between the two after the opening of Israeli embassy in India in 1992.

Relations between the two democratic nations further intensified with the visits of the Two Heads of Government in 2017and 2018. The two nations have started cooperation in various fields like cultural exchange, security and defense, counterterrorism, space research, water and energy and agricultural development.

Sub-Topic: 'India's Nuclear Program' (Updates)

India's nuclear policy has always been peace-oriented, whose clear impression is reflected in the policy of No First Use. Butin view of contemporary regional security challenges, the present government has made it clear that the policy of no first use can be reviewed and changed in

consonance with India's regional and national security. In addition, India is committed to ensuring its membership in the Nuclear Suppliers Group (NSG) and opposing partisan and unjust nuclear treaties like CTBT and NPT.

Chapter-6 The Crisis of Democratic Order

Sub-Topic: Jaya Prakash Narayan

Jaya Prakash Narayan is known for three key contributions: Fight against Corruption, Principle of Communitarian Socialism and Championing of 'Total Revolution'.

Jaya Prakash Narayan was the first leader in post-independence India who undertook a tirade against corruption through the participation of youth, particularly in Gujarat and Bihar. He the office of Lokpal against corruption. His principle of Communitarian Socialism views India as a society of communities encompassing three key layers, viz., community, region and rashtra – all combining together as an example of true federation.

Based on the above principles, Jaya Prakash Narayan advocated transformation of individual, society and state through his call for 'Total Revolution'. His call for total revolution sought to encompass moral, cultural, economic, political, educational and ecological transformations. His political transformation included the right to recall, the importance of village/ mohalla samities in democratic politics, and his call for Upper Ke Log to join political struggle for a clean politics in the country.

The essence for transformation according to Jaya Prakash Narayan revolves around 'Man' who could be the real catalyst of change in India.

Sub-Topic: 'Ram Manohar Lohia and Socialism'

Ram Manohar Lohia has been one of the main proponents of socialism in India. He championed the idea of 'Democratic Socialism' while associating his socialism with democracy. Lohia considered both capitalism and communism equally irrelevant for Indian society. His principle of Democratic Socialism has two objectives - the economic objective in form of food and housing. And the non-economic objective in form of democracy and freedom.

Lohia advocated Chouburja Rajneeti in which he opines four pillars of politics as well as socialism: Centre, Region, District and Village – all are linked with each other. Giving consideration to affirmative action, Lohia argued that the policy of affirmative action should not only be for the downtrodden but also for the women and the non-religious minorities.

Based on the premise of Democratic Socialism and Chouburja Rajneeti, Lohia supported a 'Party of

Socialism' as an attempt of merging all political parties. The Party of Socialism according to Lohia should have three symbols, viz., Spade [prepared to make efforts], Vote [power of voting], and Prison [Willingness to make sacrifices].

Sub-Topic: 'Deendayal Upadhyaya and integral Humanism'

Pandit Deendayal Upadhyaya was a philosopher, sociologist, economist and politician. The philosophy presented by him is called 'Integral Humanism' which was intended to present an 'indigenous socio-economic model' in which human being remains at the centre of development. The aim of Integral Humanism is to ensure dignified life for every human being while balancing the needs of the individual and society. It supports sustainable consumption of natural resources so that those resources can be replenished. Integral Humanism enhances not only political but also economic and social democracy and freedom. As it seeks to promote diversity, it is best suited for a country as diverse as India.

The philosophy of Integral Humanism is based on the following three principles:

- Primacy of whole, not part
- Supremacy of Dharma
- Autonomy of Society

Pandit Deendayal Upadhyaya opposed both Western 'capitalist individualism' and 'Marxist socialism'. According to Deendayal Upadhyaya, capitalist and socialist ideologies only consider the needs of the human body and mind, so they are based on materialistic purpose whereas spiritual development is equally considered important for the complete development of human being which is missing in both capitalism and socialism. Basing his philosophy on the internal conscience, pure human soul to be called Chhitti, Deendayal Upadhyaya envisaged a classless, casteless and conflict-free social system.

DeenDayal Upadhyaya advocated Indianization of Democracy, particularly with a focus on Economic Democracy. For him, decentralization & Swadeshi are the foundation of Economic Democracy. His philosophy broadly revolved around the principle of Arthayaam which states that both the absence and prominence of artha lead to the destruction and denigration of Dharma which is so central to Integral Humanism.

Sub-Topic: 'Democratic Upsurges'

Increasing participation of the people in the democratic politics of the country is broadly characterised as democratic upsurge. Based on this principle, social scientists have characterised three democratic upsurges in post- independence history of India.

The ‘First Democratic Upsurge’ could be attributed from the 1950s till 1970s which was based on the participation of Indian adult voters to the democratic politics both at the Centre and in states. Falsifying the western myth that the success of democracy requires modernization, urbanization, education and access to media, the successful holding of elections to both Lok Sabha and legislative assemblies all across states on the principle of parliamentary democracy were the testimony of India’s first democratic upsurge.

During the 1980’s, the increasing political participation of the lower classes of the society such as SCs, STs and OBCs has been interpreted as ‘Second Democratic Upsurge’. This participation has made Indian politics more accommodative and accessible for these classes. Although this upsurge has not made any major change in the standard of living of these classes, especially Dalits, the participation of these classes into the organizational and political platforms gave them the opportuni ty to strengthen their self-respect and ensure empowerment in the democratic politics of the country. The era of Liberalization, Privatization and Globalization from the early 1990s is attributed to the emergence of a competitive market society encompassing all important sectors of economy, society and polity thus paving way for the ‘Third Democratic Upsurge’. The Third Democratic Upsurge represents a competitive electoral market which is based not on the principle of survival of the fittest but rather the survival of the ablest. It underlines three shifts in India’s electoral market: from State to Market, from Government to Governance, from State as Controller to State as Facilitator. Moreover, the Third Democratic Upsurge seeks to promote the participation of the youth who constitute a significant chunk of Indian society and have emerged as the real game changers in view of their increasing electoral preference for both development and governance in India’s contemporary democratic politics.

Chapter-7: Regional Aspiration

Sub-Topic: ‘The Kashmir Issue’

Since its integration with the Union of India, Kashmir has remained one of the burning issues in post-independence India. The problem became more complicated when it was accorded a special status in the Constitution through Article 370 and Article 35A – the former giving it special powers like having its separate Constitution/Constituent Assembly/Flag, new nomenclature for Chief Minister as Prime Minister and Governor as Sadr-e-Riyasat, and the non-enforcement of most of the Union laws in the state while the later imparting it special citizenship rights prohibiting the non-Kashmiris from buying property in the state.

It was against the special status of the state of Jammu and Kashmir that there was a clarion call for abrogation of Articles 370 and 35A. Others equated Article 370 and 35A as 'constitutionally recognised separatism'.

It was against this backdrop that NDA Government presented the Jammu and Kashmir Reorganization Bill in Rajya Sabha on 5 August 2019 for the abolition of Section 370 and 35-A form Kashmir, which was passed by a majority. The bill was passed by the Lok Sabha on 6 August 2019. After the President's assent on 9 August 2019, Sections 370and 35A were repealed and Jammu and Kashmir got divided into two Union Territories of Ladakh and Jammu and Kashmir.

Chapter-8: Recent Development in Indian Politics

Sub-Topic: 'NDA III, IV & V'

The Bharatiya Janata Party led by Prime Minister Narendra Modi got an absolute majority in the Lok Sabha elections held in May 2014 and after nearly 30 years in Indian politics, a government with an absolute majority was established at the Centre. Though called NDA III, the BJP-led coalition of 2014 was largely different from its predecessor coalition governments. Where the previous coalitions were led by one of the national parties, the NDA III coalition was not only steered by a national party, i.e., BJP it was also dominated by BJP with an absolute majority of its own in Lok Sabha. It was also called a 'surplus majority coalition'. In that sense a major transformation could be seen in the nature of coalition politics which could be seen from one party led coalition to one party dominated coalition.

The 2019 Lok Sabha elections, the 17th since independence, once again brought back BJP led NDA [NDA IV] to the centre of power by winning more than 350 seats out of 543. The BJP on its own won 303 seats in Lok Sabha, the biggest number any single party has won in the lower house since 1984 when Congress swept the elections in the aftermath of Mrs Indira Gandhi's assassination. Based on the tumultuous success of the BJP in 2019, Social Scientists have started equating the contemporary party system with the 'BJP System' where an era of one-party dominance, like the 'Congress System' has once again started appearing on the democratic politics of India.

In the 2024 elections for 18th Lok Sabha with 240 of the 543 seats, the BJP again emerged as the strongest party. NDA (V) Govt. was formed after the election with the BJP taking support from its partners to achieve 294 seats and form the government. The oppositional Indian National Developmental Inclusive Alliance was able to achieve 232 seats.

Sub-Topic: 'Issues of Development and Governance'

In addition to schemes already existing, several socio-economic welfare schemes have been initiated to make development and governance accessible to the masses such as –

Pradhan Mantri Ujjwala Yojana, Swachh Bharat Abhiyan, Jan-Dhan Yojana, Deendayal Upadhyaya Gram Jyoti Yojana, Kisan Fasal Bima Yojna, Beti Bachao Beti Padhao, Ayushman Bharat Yojana, etc. All these schemes are intended to take administration to the doorstep of the common man by making the rural households, particularly the women, real beneficiaries of the Central Government schemes.