ACCOUNTANCY (Code No. 055)

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 (Code No.055)

Course Structure

Class-XI (2022-23)

Theory: 80 Marks **3 Hours**

Project: 20 Marks

Units		Periods	Marks
Part A: Financial Accounting-1			
	Unit-1: Theoretical Framework	**25**	**12**
	Unit-2: Accounting Process	**115**	**44**
Part B: Financial Accounting-II			
	Unit-3: Financial Statements of Sole Proprietorship	**60**	**24**
Part C: Project Work		**20**	**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,	**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.

Money Measurement, Going Concern, 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 in IndAS • Goods and Services Tax (GST): Characteristics and Advantages.	• differentiate among income, profits and gains. • 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	**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.

• Purchases book • 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	• appreciate that on the basis of source 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

Trial balance and Rectification of Errors • 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.	also making provisions for events which may 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.	**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.

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.

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 (Code No. 055)
Class XI (2022-23)

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	44	55%
3	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	19	23.75%
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.	17	21.25%
	TOTAL	**80**	**100%**

Applied Mathematics (XI-XII)

(Code-241)

Session- 2022-23

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 (2022-23)

Number of Paper: **1**

Total number of Periods: **240 (35 Minutes Each)**

Time: **3 Hours**

Max Marks: **80**

No.	Units	No. of Periods	Marks
I	Numbers, Quantification and Numerical Applications	25	09
II	Algebra	45	15
III	Mathematical Reasoning	15	06
IV	Calculus	35	10
V	Probability	25	08
VI	Descriptive Statistics	35	12
VII	Basics of Financial Mathematics	45	15
VIII	Coordinate Geometry	15	05
Total		240	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			
1.2	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
1.4	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
1.5	Laws and properties of logarithms	● Enlist the laws and properties of logarithms ● Apply laws of logarithm	● Fundamental laws of logarithm
1.6	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			
1.7	Averages	● Determine average for a given data	● Definition and meaning ● Problems on average, weighted average
1.8	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
1.9	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
1.10	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
1.11	Mensuration	● Solve problems based on surface area and volume of 2D and 3D shapes ● Calculate the volume/ surface area for solid formed using two or more shapes	● Comparison between 2D and 3D shapes ● Combination of solids ● Transforming one solid shape to another

1.12	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	• Ordered pair, order of elements in an ordered pair and equality of ordered pairs • Cartesian product of two non-empty sets

		elements in a Cartesian product of two 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			
2.11	Sequence and Series	● Differentiate between sequence and series	● Sequence:$a_1, a_2, a_3, \ldots, a_n$ ● Series: $a_1 + a_2 + a_3 + \cdots + a_n$
2.12	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 AP: $t_n = a + (n-1)d$ ● Sum of n terms of AP : $S_n = \frac{n}{2}[2a + (n-1)d]$ AM of a and b= $\frac{a+b}{2}$
2.13	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: $t_n = ar^{n-1}$ ● Sum of n terms of a GP: $S_n = \frac{a(r^n-1)}{r-1}$ ● Sum of infinite term 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., $\frac{a+b}{2} \geq \sqrt{ab}$
2.14	Applications of AP and GP	● Apply appropriate formulas of AP and GP to solve application problems	Applications based on ● Economy Stimulation ● The Virus spread etc.
Permutations and Combinations			
2.15	Factorial	● Define factorial of a number ● Calculate factorial of a number	● Definition of factorial: n! = n(n-1)(n-2)…3.2.1 Usage of factorial in counting principles
2.16	Fundamental Principle of Counting	● Appreciate how to count without counting	● Fundamental Principle of Addition ● Fundamental Principle of Multiplication

2.17	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
2.20	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: ● ${}^{n}C_{0}=1={}^{n}C_{n}$ ● ${}^{n}C_{a}={}^{n}C_{b}\Rightarrow a=b$ 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			
3.2	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	● Define various types of functions ● Identify domain, co-domain and range of the function	● Following types of functions with definitions and characteristics Constant function, Identity function, Polynomial function, Rational function, Composite function, Logarithm function, Exponential function, Modulus function, Greatest integer function, Signum function, Algebraic function
4.4	Graphical representation of functions	● Representation of function graphically	● Graph of some polynomial functions, Logarithm function, Exponential Function, Modulus function, Greatest integer

			function, Signum function
4.5	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
4.6	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
4.7	Differentiation as a process of finding derivative	● Find the derivative of the functions	● Derivatives of functions (non-trigonometric only)
4.8	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 Event: 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: $P(E\|F) = \frac{P(E\cap F)}{P(F)}$, $P(F) \neq 0$
5.5	Total Probability	● Interpret mathematical information and identify situations when to apply total probability ● Solve problems based on application of total probability	● Total Probability: Let $E_1, E_2, \ldots, E_n$ be a partition of the sample space S, then probability of an event A associated with S is: $P(A) = \sum_{j=1}^{n} P(E_j)P(A\|E_j)$
5.6	Bayes' Theorem	● State Bayes' theorem ● Solve practical problems based on Bayes' Theorem	● Bayes' Theorem: If $E_1, E_2, \ldots, E_n$ be *n* non empty events which constitute a partition of a sample space S and A be any event with non zero probability,

			then: $P(E_i\|A) = \frac{P(E_i)P(A\|E_i)}{\sum_{j=1}^{n} P(E_j)P(A\|E_j)}$
UNIT- 6 DESCRIPTIVE STATISTICS			
6.4	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
	Skewness and Kurtosis	● Define Skewness and Kurtosis using graphical representation of a data set ● Interpret Skewness and Kurtosis of a frequency distribution by plotting the graph ● Calculate coefficient of Skewness and interpret the results	●Examples of symmetrical and asymmetrical data ●Visualization of graphical representation of data using Excel Spreadsheet or any other computer assisted tool
6.5	Percentile rank and Quartile rank	● Define Percentile rank and Quartile rank ● Calculate and interpret Percentile and Quartile rank of scores in a given data set	●Emphasis on visualizing, analysing and interpreting percentile and quartile rank scores
6.6	Correlation	● Define correlation in values of two data sets ● Calculate Product moment correlation for ungrouped and grouped data ● Calculate Karl Pearson's coefficient of correlation ● Calculate Spearman's rank correlation ● 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	● Impact of high interest rates and low interest rates on the business

		● Solve Practical applications of interest rate	
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 $= (1 + i/n)^n - 1$ where: i = Nominal Interest Rate n = No. of Periods
7.5	Present value, net present value and future value	●Interpret the concept of compounding and discounting along with practical applications ●Compute net present value ●Apply net present value in capital budgeting decisions	• Formula for Present Value: $PV = CF/(1 + r)^n$ Where: CF = Cash Flow in Future Period r = Periodic Rate of return or Interest (also called the discount rate or the required rate of return) n = no. of periods • Use of PVAF, FVAF tables for practical purposes • Solve problems based on Application of net present value
7.6	Annuities, Calculating value of Regular Annuity	●Explain the concept of Immediate Annuity, Annuity due and Deferred Annuity ●Calculate General Annuity	●Definition, Formulae and Examples
7.7	Simple applications of regular annuities (upto 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.
7.8	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	●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.

		Goods and Services Tax (SGST) Central Goods and Services Tax (CGST) and Union Territory Goods and Services Tax (UTGST)	• Assess the Individuals under Income Tax Act • Formula for GST Different Tax heads under GST
7.9	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
7.10	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 supply and other supply bills: i) overcharging of electricity ii) 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 from a given point on 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 • Define eccentricity of a parabola • Derive the equation of parabola	• Parabola as a locus of a point in a plane. • Equation of a parabola in standard form: • Focus, Directrix, Axis, Latus rectum, Eccentricity • Application in parabolic reflector, beam supported by wires at the end of the support, girder of a railway bridge, etc.

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

BIOLOGY (Code No. 044)
Classes XI & XII (2022-23)

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 relates the study of biology to real life through the developments in use of technology. It links the discoveries and innovations in biology to everyday life such as environment, industry, health and agriculture. The updated curriculum also focuses on understanding and application of scientific principles, while ensuring that ample opportunities and scope for learning and appreciating basic concepts continue to be available within itsframework. The prescribed syllabus is expected to:

- promote understanding of basic principles of Biology
- encourage learning of emerging knowledge and its relevance to individual and society
- promote rational/scientific attitude towards issues related to population, environment and development
- enhance awareness about environmental issues, problems and their appropriate solutions
- create awareness amongst the learners about diversity in the living organisms and developing respect for other living beings
- appreciate that the most complex biological phenomena are built on essentially simple processes

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.

BIOLOGY (Code No. 044)
COURSE STRUCTURE
CLASS XI (2022 -23) (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 (Topics excluded – Angiosperms, Plant Life Cycle and Alternation of Generations)

Chapter-4: Animal Kingdom

Salient features and classification of animals, non-chordates up to phyla level and chordates up to 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 Animals and Plant

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, 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-13: 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-14: 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-15: 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; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA;

Unit-V Human Physiology

Chapter-17: 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-18: 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-19: 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-20: 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-21: 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-22: 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.

Note: Diseases related to all the human physiological systems to be taught in brief.

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 students' work over theacademic 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>30Marks</td></tr>
</table>

A: List of Experiments

1. Study and describe locally available common flowering plants, from family Solanaceae (Poaceae, Asteraceae or Brassicaceae can besubstituted 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,*liverfluke, *Ascaris*, leech, earthworm, prawn, silkworm, honey bee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.
4. Mitosis in onion root tip cells and animals cells (grasshopper) from permanent slides.
5. Different 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 /equipments/animal and plant material / chemicals. for assessment in practicals (All experiments)

B. **Equipments** - compound microscope, test tube, petridish, chromatography paper, chromatography chamber, beaker, scalpel

Chemical – alcohol

Models – Model ofHuman skeleton to show – Ball and socket joints of girdles and limbs, Rib cage, Honey comb, 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 (consider multimedia also)

BIOTECHNOLOGY
2022-23

An unprecedented growth of human knowledge in the field of Biological Sciences coupled with equally significant developments in the field of technology have brought significant changes into existing social and economic systems. The emerging field of Biotechnology is likely to further enhance the applications of Science and Technology for human welfare. Modern Biotechnology processes encompass a wide range of new products such as antibiotics, vaccines, monoclonal antibodies and many more. Furthermore, developments in recombinant DNA technology have yielded numerous new useful products in the fields of healthcare and agriculture. The present syllabus takes care of all these aspects. Due emphasis has been laid on familiarizing the learners with the fundamental concepts, basic techniques and their applications. It is expected that the knowledge gained through the study of different topics and the skills acquired through the prescribed practical work will make the learners competent to meet the challenges of academic as well as professional courses after studying the subject at senior secondary stage.

Objectives

The broad objectives of teaching Biotechnology at senior secondary level are to:

- help the learners know and understand basic facts and concepts of the subject at elementary stage.
- expose the students to different basic processes and basic techniques used in Biotechnology.
- familiarize the learners to understand the relationship of the subject to health, nutrition, environment, agriculture and industry, etc.
- develop conceptual competence in the learners so as to cope up with professional courses in future career.
- acquaint students with different applications of Biotechnology in everyday life.
- develop an interest in students to study Biotechnology as a discipline.

CLASS- XI (2022-23)
COURSE STRUCTURE

One Paper **Time: 3 hrs.**

Max. Marks 70+30

Units		Marks
Unit- I	Biotechnology: An overview	5
Unit-II	Molecules of Life	20
Unit-III	Genetics and Molecular Biology	20
Unit-IV	Cells and Organisms	25
	Practical	30
	Total	**100**

CLASS XI
(Theory)

One Paper **Time: 3 hrs.**
Total Marks: 70

Unit-I Biotechnology: An overview **5 Marks**

Chapter 1: Biotechnology: An Overview

Historical Perspectives, Technology and Applications of Biotechnology, Global market and Biotech Products.

Unit-II Molecules of Life **20 Marks**

Chapter 1: Biomolecules: Building Blocks

Building Blocks of Carbohydrates - Sugars and their Derivatives, Building Blocks of Proteins - Amino Acids, Building Blocks of Lipids - Simple Fatty Acids, Glycerol and Cholesterol, Building Blocks of Nucleic Acids – Nucleotides.

Chapter 2: Macromolecules: Structure & Function

Carbohydrates - The Energy Givers, Proteins - The Performers, Enzymes - The Catalysts, Lipids and Biomembranes - The Barriers, Nucleic Acids - The Managers

Unit-III Genetics and Molecular Biology **20 Marks**

Chapter 1: Concepts of Genetics

Historical Perspective, Multiple Alleles, Linkage and Crossing Over, Genetic Mapping.

Chapter 2: Genes and Genomes: Structure and Function

Discovery of DNA as Genetic Material, DNA Replication, Fine Structure of the Genes, From Gene to Protein, Transcription – The Basic Process, Genetic Code, Translation, Mutations, Human Genetic Disorders.

Unit IV: Cells and Organisms **25 Marks**

Chapter 1: The Basic Unit of Life

Cell Structure and Components, Organization of Life

Chapter 2: Cell Growth and Development

Cell Division, Cell Cycle, Cell Communication, Nutrition, Reproduction, Immune Response in Animals.

PRACTICALS

Note: Every student is required to do the following experiments during the academic session.

1. Preparation of buffers and pH determination
2. Sterilization techniques
3. Preparation of bacterial growth medium
4. Cell counting
5. Sugar Estimation using Di Nitro Salicylic Acid test (DNS test)
6. Assay for amylase enzyme
7. Protein estimation by biuret method

Scheme of Evaluation

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

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

Two experiments	:	20
Marks Viva on experiments	:	5
Marks Practical record	:	5 Mark

CLASS XII (2022-23)
COURSE- STRUCTURE- (THEORY)

One Paper **Max. Marks 70+30**
Time: 3 hrs.

Units		Marks
Unit V	Protein and Gene Manipulation	40
Unit VI	Cell Culture and Genetic Manipulation	30
	Practicals	30
	Total	**100**

One paper **Time: 3 hrs.**
Total Marks: 70

Unit-V Protein and Gene Manipulation **40 Marks**

Chapter-1: Recombinant DNA Technology

Introduction, Tool of Recombinant DNA technology, Making rDNA molecule, Introduction of recombinant DNA into host cells, Identification of recombinants, Polymerase Chain Reaction (PCR), DNA Sequencing.

Chapter-2: Protein Structure and Engineering

Introduction to the world of proteins, Structure-function Relationship in proteins, Characterization of proteins, Protein based products, Designing proteins (Protein Engineering)

Chapter-3: Genomics, Proteomics and Bioinformatics

Gene prediction and counting, Genome similarity, SNPs and Comparative genomics, Functional genomics, Proteomics, Information sources, Analysis using bioinformatics tools.

Unit-VI Cell Culture and Genetic Manipulation **30 Marks**

Chapter-1: Microbial Cell Culture and its Applications

Introduction, Microbial nutrition and culture techniques, Measurement and kinetics of microbial growth, Isolation of microbial products, Strain isolation and improvement, Applications of microbial culture technology.

Chapter -2: Plant Cell Culture and Applications

Introduction, Cell and tissue culture techniques, Applications of cell and tissue culture, Transgenic plants with beneficial traits, Biosafety of transgenic plants

Chapter-3: Animal Cell Culture and Applications

Introduction, Animal cell culture techniques, Applications of animal cell culture, Stem cell technology.

PRACTICALS **30 Marks**

Note: Every student will be required to do the following experiments during the academic session.

1. Use of special equipment in biotechnology experiments
2. Isolation of bacterial plasmid DNA
3. Detection of DNA by gel electrophoresis
4. Estimation of DNA by UV spectroscopy
5. Isolation of bacteria from curd & staining of bacteria
6. Cell viability assay using Evan's blue dye exclusion method
7. Data retrieval and database search using internet site NCBI and download a DNAand protein sequence from internet, analyze it and comment on it
8. Reading of a DNA sequencing gel to arrive at the sequence
9. Project work

Scheme of Evaluation

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

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

A	Two experiments	6+6 (only one computer based practical)
	Practical record	04
	Viva on Practical	04
B	Project work	
	Write up	05
	Viva on project	05
	Total	**30**

Note:- More emphasis should be given on hands on work in projects.

Prescribed Books:

1. **A Text Book of Biotechnology -** Class XI : Published by CBSE, New Delhi
2. **As reference- Biotechnology -** Class XI : Published by NCERT, New Delhi
3. **A Laboratory Manual of Biotechnology -** Class XI : Published by CBSE, New Delhi
4. **A Text Book of Biotechnology -** Class XII : Published by CBSE, New Delhi
5. **A Laboratory Manual of Biotechnology -** Class XII : Published by CBSE, New Delhi

BUSINESS STUDIES (Code No. 054)

Rationale

The courses in Business Studies and Accountancy are introduced at + 2 stage of Senior Secondary Education as formal commerce education is provided after first ten years of schooling. Therefore, it becomes necessary that instructions in these subjects are given in such a manner that students have a good understanding of the principles and practices bearing in business (trade and industry) as well as their relationship with the society.

Business is a dynamic process that brings together technology, natural resources and human initiative in a constantly changing global environment. To understand the framework in which a business operates, a detailed study of the organisation and management of business processes and its interaction with the environment is required. Globalisation has changed the way organizations transact their business.

Information Technology is becoming a part of business operations in more and more organisations. Computerised systems are fast replacing other systems. E-business and other related concepts are picking up fast which need to be emphasized in the curriculum.

The course in Business Studies prepares students to analyse, manage, evaluate and respond to changes which affect business. It provides a way of looking at and interacting with the business environment. It recognizes the fact that business influences and is influenced by social, political, legal and economic forces.

It allows students to appreciate that business is an integral component of society and develops an understanding of many social and ethical issues.

Therefore, to acquire basic knowledge of the business world, a course in Business Studies would be useful. It also informs students of a range of study and work options and bridges the gap between school and work.

Objectives:

- To inculcate business attitude and develop skills among students to pursue higher education, world of work including self employment.
- To develop students with an understanding of the processes of business and its environment;
- To acquaint students with the dynamic nature and inter-dependent aspects of business;
- To develop an interest in the theory and practice of business, trade and industry;
- To familiarize students with theoretical foundations of the process of organizing and managing the operations of a business firm;
- To help students appreciate the economic and social significance of business activity and the social cost and benefits arising there from;
- To acquaint students with the practice of managing the operations and resources of business;
- To enable students to act more effectively and responsibly as consumers, employers, employees and citizens;

BUSINESS STUDIES (Code No. 054)
CLASS–XI (2022-23)

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

Units		Periods	Marks
Part A	**Foundations of Business**		
1	Nature and Purpose of Business	18	16
2	Forms of Business Organisations	24	
3	Public, Private and Global Enterprises	18	14
4	Business Services	18	
5	Emerging Modes of Business	10	10
6	Social Responsibility of Business and Business Ethics	12	
	Total	**100**	**40**
Part B	**Finance and Trade**		
7	Sources of Business Finance	30	20
8	Small Business	16	
9	Internal Trade	30	20
10	International Business	14	
	Total	**90**	**40**
	Project Work (One)	**30**	**20**

Part A: Foundation of Business
Concept includes meaning and features

Unit 1: Evolution and Fundamentals of Business

Content	After going through this unit, the student/ learner would be able to:
History of Trade and Commerce in India: Indigenous Banking System, Rise of Intermediaries, Transport, Trading Communities: Merchant Corporations, Major Trade Centres, Major Imports and Exports, Position of Indian Sub-Continent in the World Economy.	• To acquaint the History of Trade and Commerce in India
Business – meaning and characteristics	• Understand the meaning of business with special reference to economic and non-economic activities. • Discuss the characteristics of business.
Business, profession and employment-Concept	• Understand the concept of business, profession and employment. • Differentiate between business, profession and employment.

Objectives of business	• Appreciate the economic and social objectives of business. • Examine the role of profit in business.
Classification of business activities - Industry and Commerce	• Understand the broad categories of business activities- industry and commerce.
Industry-types: primary, secondary, tertiary Meaning and subgroups	• Describe the various types of industries.
Commerce-trade: (types-internal, external; wholesale and retail) and auxiliaries to trade; (banking, insurance, transportation, warehousing, communication, and advertising) – meaning	• Discuss the meaning of commerce, trade and auxiliaries to trade. • Discuss the meaning of different types of trade and auxiliaries to trade. • Examine the role of commerce-trade and auxiliaries to trade.
Business risk-Concept	• Understand the concept of risk as a special characteristic of business. • Examine the nature and causes of business risks.

Unit 2: Forms of Business organizations

Sole Proprietorship-Concept, merits and limitations.	• List the different forms of business organizations and understand their meaning. • Identify and explain the concept, merits and limitations of Sole Proprietorship.
Partnership-Concept, types, merits and limitation of partnership, registration of a partnership firm, partnership deed. Types of partners	• Identify and explain the concept, merits and limitations of a Partnership firm. • Understand the types of partnership on the basis of duration and on the basis of liability. • State the need for registration of a partnership firm. • Discuss types of partners –active, sleeping, secret, nominal and partner by estoppel.
Hindu Undivided Family Business: Concept	• Understand the concept of Hindu Undivided Family Business.
Cooperative Societies-Concept, merits, and limitations.	• Identify and explain the concept, merits and limitations of Cooperative Societies. • Understand the concept of consumers, producers, marketing, farmers, credit and housing co-operatives.

Company - Concept, merits and limitations; Types: Private, Public and One Person Company – Concept	• Identify and explain the concept, merits and limitations of private and public companies. • Understand the meaning of one person company. • Distinguish between a private company and a public company.
Formation of company - stages, important documents to be used in formation of a company	• Highlight the stages in the formation of a company. • Discuss the important documents used in the various stages in the formation of a company.
Choice of form of business organization	• Distinguish between the various forms of business organizations. • Explain the factors that influence the choice of a suitable form of business organization.

Unit 3: Public, Private and Global Enterprises

Public sector and private sector enterprises – Concept	• Develop an understanding of Public sector and private sector enterprises
Forms of public sector enterprises: Departmental Undertakings, Statutory Corporations and Government Company.	• Identify and explain the features, merits and limitations of different forms of public sector enterprises
Global Enterprises – Feature. Public private partnership – concept	• Develop an understanding of global enterprises, public private partnership by studying their meaning and features.

Unit 4: Business Services

Business services – meaning and types. Banking: Types of bank accounts - savings, current, recurring, fixed deposit and multiple option deposit account	• Understand the meaning and types of business services. • Discuss the meaning and types of Business service Banking • Develop an understanding of difference types of bank account.
Banking services with particular reference to Bank Draft, Bank Overdraft, Cash credit. E-Banking meaning, Types of digital payments	• Develop an understanding of the different services provided by banks
Insurance – Principles. Types – life, health, fire and marine insurance – concept	• Recall the concept of insurance • Understand Utmost Good Faith, Insurable Interest, Indemnity, Contribution, Doctrine of Subrogation and Causa Proxima as principles of insurance • Discuss the meaning of different

	types of insurance-life, health, fire, marine insurance.
Postal Service - Mail, Registered Post, Parcel, Speed Post, Courier - meaning	• Understand the utility of different telecom services

Unit 5: Emerging Modes of Business

E - business: concept, scope and benefits	• Give the meaning of e-business. • Discuss the scope of e-business. • Appreciate the benefits of e-business • Distinguish e-business from traditional business.

Unit 6: Social Responsibility of Business and Business Ethics

Concept of social responsibility	• State the concept of social responsibility.
Case of social responsibility	• Examine the case for social responsibility.
Responsibility towards owners, investors, consumers, employees, government and community.	• Identify the social responsibility towards different interest groups.
Role of business in environment protection	• Appreciate the role of business in environment protection.
Business Ethics - Concept and Elements	• State the concept of business ethics. • Describe the elements of business ethics.

Part B: Finance and Trade

Unit 7: Sources of Business Finance

Concept of business finance	• State the meaning, nature and importance of business finance.
Owners' funds- equity shares, preferences share, retained earnings	• Classify the various sources of funds into owners' funds. • State the meaning of owners' funds.
Borrowed funds: debentures and bonds, loan from financial institution and commercial banks, public deposits, trade credit, Inter Corporate Deposits (ICD).	• State the meaning of borrowed funds. • Discuss the concept of debentures, bonds, loans from financial institutions and commercial banks, Trade credit and inter corporate deposits. • Distinguish between owners' funds and borrowed funds.

Unit 8: Small Business and Enterprises

Entrepreneurship Development (ED): Concept, Characteristics and Need. Process of Entrepreneurship Development: Start-up India Scheme, ways to fund start-up. Intellectual Property Rights and Entrepreneurship	• Understand the concept of Entrepreneurship Development (ED), Intellectual Property Rights
Small scale enterprise as defined by MSMED Act 2006 (Micro, Small and Medium Enterprise Development Act)	• Understand the meaning of small business
Role of small business in India with special reference to rural areas	• Discuss the role of small business in India
Government schemes and agencies for small scale industries: National Small Industries Corporation (NSIC) and District Industrial Centre (DIC) with special reference to rural, backward areas	• Appreciate the various Government schemes and agencies for development of small scale industries. NSIC and DIC with special reference to rural, backward area.

Unit 9: Internal Trade

Internal trade - meaning and types services rendered by a wholesaler and a retailer	• State the meaning and types of internal trade. • Appreciate the services of wholesalers and retailers.
Types of retail-trade-Itinerant and small scale fixed shops retailers	• Explain the different types of retail trade.
Large scale retailers-Departmental stores, chain stores - concept	• Highlight the distinctive features of departmental stores, chain stores and mail order business.
GST (Goods and Services Tax): Concept and key-features	• Understand the concept of GST

Unit 10: International Trade

International trade: concept and benefits	• Understand the concept of international trade. • Describe the scope of international trade to the nation and business firms.
Export trade – Meaning and procedure	• State the meaning and objectives of export trade. • Explain the important steps involved in executing export trade.
Import Trade - Meaning and procedure	• State the meaning and objectives

	of import trade. • Discuss the important steps involved in executing import trade.
Documents involved in International Trade; indent, letter of credit, shipping order, shipping bills, mate's receipt (DA/DP)	• Develop an understanding of the various documents used in international trade. • Identify the specimen of the various documents used in international trade. • Highlight the importance of the documents needed in connection with international trade transactions
World Trade Organization (WTO) meaning and objectives	• State the meaning of World Trade Organization. • Discuss the objectives of World Trade Organization in promoting international trade.

Unit 11: Project Work

As per CBSE guidelines.

Suggested Question Paper Design
Business Studies (Code No. 054)
Class XI (2022-23)
March 2023 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	44	55%
2	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way	19	23.75%
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.	17	21.25%
	Total	**80**	**100%**

(B) CARNATIC MUSIC (MELODIC INSTRUMENTAL)

(CODE NO. 032) CLASS–XI: (2022-23)

Total Marks: 100

Theory **Marks: 30**

Time: 2 Hours

A.	**History and Theory of Indian Music**	**No. of periods**
1. (i)	An outline knowledge of the following Lakshana Grandhas Natyasastra and Chaturdandi Prakasika.	4
(ii)	Short life sketch and contributions of the following:- Veena Dhanammal, Rajamanikkam Pillai, Tirukkodi Kaval Krishna lyer (violin), Thyagaraja, Syamasastry,Muthuswamy Deekshitar,	8
(iii)	Brief study of the musical forms: Geetam and itsvarieties; Varnam – Svarajati, Kriti/Kirtana	6
2.	Definition and explanation of the following terms: Nada, Sruti, Svara, Vadi, Vivadi:,Samvadi, Anuvadi, Amsa& Nyasa, Jaati, Raga, Tala, Jati, Yati, Suladisapta talas, Nadai, Arohana, Avarohana.	3
3.	Candidates should be able to write in notation the Varnamin the prescribed ragas	5
4.	Lakshanas of the ragas prescribed. **in addition to Kambhoji & Dhanyasi, Ananda bhairavi is deleted**	06
5.	Talas Prescribed: Adi, Roopaka, Misra Chapu and Khanda Chapu. A brief study of SuladiSaptatalas.	5
6.	A brief introduction to Manodhama Sangitam	3
	Total Periods	**40**

(B) CARNATIC MUSIC (MELODIC INSTRUMENTAL)

(CODE NO. 032) CLASS–XI: (2022-23)

Format of Examination **Total Marks:30**

I	MCQ covering the whole syllabus		6 marks
II (i)	Notation		6 marks
(ii)	Raga Lakshanas		6 marks
III (i)	Life sketch & contribution	3+3	6 marks
(ii)	Lakshana Granthas		
(iii)	Musical forms		
(iv)	Manodharma Sangit		
IV (i)	Definitions of technical terms	2x3	6 marks
(ii)	Talas Prescribed		
		Total	**30 marks**

(B) CARNATIC MUSIC (MELODIC INSTRUMENTAL)

(CODE NO. 032) CLASS–XI: (2022-23)

CLASS–XI

Practical **Marks: 70**

B.	Practical Activities	No. of Periods
1	Ragas Prescribed: Mayamalavagowla, Sankarabharana, Kharaharapriya, Kalyani, Madhyamavati, Arabhi, PantuvaraliKedaragaula, Vasanta,Kanada,.	25
2	Varnams (atleast two) in Aditala in two degree of speed.	08
3	Kriti/Kirtana in each of the prescribed ragas, covering themain Talas Adi, Rupakam and Chapu.	08
4	Brief alapana of the ragas prescribed	25
5	Technique of playing -Kalpanasvaras in Adi, an Rupaka talas in two degrees of speed	20
6	The candidate should be able to produce all the gamakas pertaining to the Chosen instrument. Only important Gamakas pertaining to opted instruments are recommended. Other gamakas are deleted,	14
	Total Periods	100

Format of Examination (Practical) CLASS–XI

I.	Varnam presentation in two degree speed	8 marks
II.	Presentation of Kritis from the prescribed syllabus	8 marks
III.	Raga Alapana	10 marks
IV.	Nirmal & Kalpana Swaras	10 marks
V.	Questions on Raga Lakshanas	8 marks
VI.	Special Gamakas pertaining to the chosen instrument	6 marks
	Total Marks	**50 marks**

Internal assessment & Project Work **20 marks**

Total 70 Marks

CHEMISTRY (Code No. 043) (2022-2023)

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

The new and updated curriculum is based on a disciplinary approach with rigour and depth taking care that the syllabus is not heavy and at the same time it is comparable to the international level. The knowledge related to the subject of Chemistry has undergone tremendous changes during the past decade. Many new areas like synthetic materials, biomolecules, natural resources, and industrial chemistry are coming in a big way and deserve to be an integral part of the chemistry syllabus at the senior secondary stage. At the international level, new formulations and nomenclature of elements and compounds, symbols and units of physical quantities floated by scientific bodies like IUPAC and CGPM are of immense importance and need to be incorporated into the updated syllabus. The revised syllabus takes care of all these aspects. Greater emphasis has been laid on the use of new nomenclature, symbols and formulations, the teaching of fundamental concepts, application of concepts in chemistry to industry/ technology, logical sequencing of units, removal of obsolete content and repetition, etc.

OBJECTIVES

The curriculum of Chemistry at Senior Secondary Stage aims to:

- promote understanding of basic facts and concepts in chemistry while retaining the excitement of chemistry.
- make students capable of studying chemistry in academic and professional courses (such as medicine, engineering, technology) at tertiary level.
- expose the students to various emerging new areas of chemistry and apprise them with their relevance in future studies and their application in various spheres of chemical sciences and technology.
- equip students to face various challenges related to health, nutrition, environment, population, weather, industries and agriculture.
- develop problem solving skills in students.
- expose the students to different processes used in industries and their technological applications.
- apprise students with interface of chemistry with other disciplines of science such as physics, biology, geology, engineering etc.
- acquaint students with different aspects of chemistry used in daily life.
- develop an interest in students to study chemistry as a discipline.
- integrate life skills and values in the context of chemistry.

COURSE STRUCTURE

CLASS–XI (THEORY) (2022-23)

Time:3Hours **Total Marks70**

S.NO	UNIT	PERIODS	MARKS
1	Some Basic Concepts of Chemistry	18	7
2	Structure of Atom	20	9
3	Classification of Elements and Periodicity in Properties	12	6
4	Chemical Bonding and Molecular Structure	20	7
5	Chemical Thermodynamics	23	9
6	Equilibrium	20	7
7	Redox Reactions	9	4
8	Organic Chemistry: Some basic Principles and Techniques	20	11
9	Hydrocarbons	18	10
	TOTAL	**160**	**70**

Unit I: Some Basic Concepts of Chemistry **18 Periods**

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 II: Structure of Atom **20 Periods**

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 III: Classification of Elements and Periodicity in Properties **12 Periods**

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, valency. Nomenclature of elements with atomic number greater than 100.

Unit IV: Chemical Bonding and Molecular Structure **20 Periods**

Valence electrons, ionic bond, covalent bond, bond parameters, Lewis's 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 VI: Chemical Thermodynamics 23 Periods

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 VII: Equilibrium 20 Periods

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 VIII: Redox Reactions 09 Periods

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 XII: Organic Chemistry -Some Basic Principles and Techniques 20 Periods

General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric 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 XIII: Hydrocarbons 18 Periods

Classification of Hydrocarbons

Aliphatic Hydrocarbons:

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

Alkenes - Nomenclature, the 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, the 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 the functional group in monosubstituted benzene. Carcinogenicity and toxicity.

PRACTICALS

3 HOURS/ 30 Marks

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 **Total Periods: 60**

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 universal indicator.

2. Study the pH change by common-ion in case of weak acids and weak bases.

D. Chemical Equilibrium

One of the following experiments:

1. Study the shift in equilibrium between ferric ions and thiocyanate ions by increasing/decreasing the concentration of either of the 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.

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

Cation:

Pb^{2+}, Cu^{2+} As^{3+}, $A\ell^{3+}$, Fe^{3+}, Mn^{2+}, Zn^{2+}, Ni^{2+}, Ca^{2+}, Sr^{2+}, Ba^{2+}, Mg^{2+}, NH_4^+

Anions:

$(CO_3)^{2-}$, S^{2-}, $(SO_3)^{2-}$, $(NO_2)^-$, $(SO_4)^{2-}$, $C\ell^-$, Br^-, I^-, $(PO_4)^{3-}$, $(C_2O_4)^{2-}$, CH_3COO^-, NO_3^-

(Note: Insoluble salts excluded)

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

G. PROJECTS

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

A few suggested Projects

- Checking the bacterial contamination in drinking water by testing sulphide ion
- Study of the methods of purification of water
- 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).
- Investigation of the foaming capacity of different washing soaps and the effect of addition of Sodium carbonate on it
- Study the acidity of different samples of tea leaves.
- Determination of the rate of evaporation of different liquids.
- Study the effect of acids and bases on the tensile strength of fibers.

- 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 IMPAIRED STUDENTS

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

A. **List of apparatus for identification for assessment in practical (All experiments)**

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

- Odour detection in qualitative analysis
- Procedure/Setup of the apparatus

B. **List of Experiments A. Characterization and Purification of Chemical Substances**

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

C. **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.

D. **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.

E. **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.

F. **Qualitative Analysis**

1. Determination of one anion and one cation in a given salt
2. Cations - NH_4^+

Anions – $(CO_3)^{2-}$, S^{2-}, $(SO_3)^{2-}$, Cl^-, CH_3COO^-
(Note: insoluble salts excluded)

3. Detection of Nitrogen in the given organic compound.
4. 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. Laboratory Manual of Chemistry, Class XI Published by NCERT
4. Other related books and manuals of NCERT including multimedia and online sources

Note:

The content indicated in NCERT textbooks as excluded for the year 2022-23 is not to be tested by schools.

Computer Science
CLASS-XI
Code No. 083
2022-23

1. Learning Outcomes

Student should be able to

a) develop basic computational thinking
b) explain and use data types
c) appreciate the notion of algorithm
d) develop a basic understanding of computer systems - architecture, operating system and cloud computing
e) explain cyber ethics, cyber safety and cybercrime
f) Understand the value of technology in societies along with consideration of gender and disability issues

2. Distribution of Marks

Unit No.	Unit Name	Marks	Periods	
			Theory	Practical
I	Computer Systems and Organisation	10	10	10
II	Computational Thinking and Programming - 1	45	80	60
III	Society, Law and Ethics	15	20	----
	Total	70	110	70

3. Unit wise Syllabus

Unit I: Computer Systems and Organisation

- Basic Computer Organisation: Introduction to computer system, hardware, software, input device, output device, CPU, memory (primary, cache and secondary), units of memory (Bit, Byte, KB, MB, GB, TB, PB)
- Types of software: system software (operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler & interpreter), application software
- Operating system (OS): functions of operating system, OS user interface
- Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth table, De Morgan's laws and logic circuits
- Number system: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems.
- Encoding schemes: ASCII, ISCII and UNICODE (UTF8, UTF32)

Unit II: Computational Thinking and Programming – 1

- Introduction to problem solving: Steps for problem solving (analysing the problem, developing an algorithm, coding, testing and debugging). representation of algorithms using flow chart and pseudo code, decomposition
- Familiarization with the basics of Python programming: Introduction to Python, features of Python, executing a simple "hello world" program, execution modes: interactive mode and script mode, Python character set, Python tokens (keyword, identifier, literal, operator, punctuator), variables, concept of l-value and r-value, use of comments
- Knowledge of data types: number (integer, floating point, complex), boolean, sequence (string, list, tuple), none, mapping (dictionary), mutable and immutable data types
- Operators: arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators (is, is not), membership operators (in, not in)
- Expressions, statement, type conversion & input/output: precedence of operators, expression, evaluation of expression, python statement, type conversion (explicit & implicit conversion), accepting data as input from the console and displaying output
- Errors: syntax errors, logical errors, runtime errors
- Flow of control: introduction, use of indentation, sequential flow, conditional and iterative flow control
- Conditional statements: if, if-else, if-elif-else, flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number
- Iterative statements: for loop, range function, while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number etc
- Strings: introduction, indexing, string operations (concatenation, repetition, membership & slicing), traversing a string using loops, built-in functions: len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(), lstrip(), rstrip(), strip(), replace(), join(), partition(), split()
- Lists: introduction, indexing, list operations (concatenation, repetition, membership & slicing), traversing a list using loops, built-in functions: len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists, suggested programs: finding the maximum, minimum, mean of numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list
- Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership & slicing), built-in functions: len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple, suggested programs: finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple
- Dictionary: introduction, accessing items in a dictionary using keys, mutability of dictionary (adding a new item, modifying an existing item), traversing a dictionary, built-in functions: len(), dict(), keys(), values(), items(), get(), update(), del, clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), count(), sorted(), copy(); suggested programs : count the number of times a character appears in a given string using a dictionary, create a dictionary with names of employees, their salary and access them
- Introduction to Python modules: Importing module using 'import <module>' and using from statement, Importing math module (pi, e, sqrt, ceil, floor, pow, fabs, sin, cos, tan); random module (random, randint, randrange), statistics module (mean, median, mode)

Unit III: Society, Law and Ethics

- Digital Footprints
- Digital society and Netizen: net etiquettes, communication etiquettes, social media etiquettes
- Data protection: Intellectual Property Right (copyright, patent, trademark), violation of IPR (plagiarism, copyright infringement, trademark infringement), open source softwares and licensing (Creative Commons, GPL and Apache)
- Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber crime
- Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying.
- Safely accessing web sites: malware, viruses, trojans, adware
- E-waste management: proper disposal of used electronic gadgets
- Indian Information Technology Act (IT Act)
- Technology & Society: Gender and disability issues while teaching and using computers

4. Practical

S.No.	Unit Name	Marks (Total=30)
1.	**Lab Test (12 marks)**	
	Python program (60% logic + 20% documentation + 20% code quality)	**12**
2.	**Report File + Viva (10 marks)**	
	Report file: Minimum 20 Python programs	**7**
	Viva voce	**3**
3.	Project (that uses most of the concepts that have been learnt) (See CS-XII for the rules regarding the projects)	**8**

5. Suggested Practical List

Python Programming

- Input a welcome message and display it.
- Input two numbers and display the larger / smaller number.
- Input three numbers and display the largest / smallest number.
- Generate the following patterns using nested loop.

Pattern-1	Pattern-2	Pattern-3
* ** *** **** *****	1 2 3 4 5 1 2 3 4 1 2 3 1 2 1	A AB ABC ABCD ABCDE

- Write a program to input the value of x and n and print the sum of the following series:
  - $1+x+x^2+x^3+x^4+. \ldots\ldots\ldots x^n$
  - $1-x+x^2-x^3+x^4 \ldots\ldots\ldots\ldots\ldots\ldots x^n$
  - $x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \ldots\ldots\ldots\ldots \frac{x^n}{n}$
  - $x + \frac{x^2}{2!} - \frac{x^3}{3!} + \frac{x^4}{4!} \ldots\ldots\ldots\ldots \frac{x^n}{n!}$
- Determine whether a number is a perfect number, an armstrong number or a palindrome.
- Input a number and check if the number is a prime or composite number.
- Display the terms of a Fibonacci series.
- Compute the greatest common divisor and least common multiple of two integers.
- Count and display the number of vowels, consonants, uppercase, lowercase characters in string.
- Input a string and determine whether it is a palindrome or not; convert the case of characters in a string.
- Find the largest/smallest number in a list/tuple
- Input a list of numbers and swap elements at the even location with the elements at the odd location.
- Input a list/tuple of elements, search for a given element in the list/tuple.
- Input a list of numbers and find the smallest and largest number from the list.
- Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have scored marks above 75.

6. Suggested Reading Material

- NCERT Textbook for COMPUTER SCIENCE (Class XI)
- Support Materials on the CBSE website.

ECONOMICS (Code No. 030)
(2022-23)

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 (030)
CLASS – XI (2022-23)

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

Units		Marks	Periods
Part A	**Statistics for Economics**		
	Introduction	15	10
	Collection, Organisation and Presentation of Data		30
	Statistical Tools and Interpretation	25	50
		40	
Part B	**Introductory Microeconomics**		
	Introduction	04	10
	Consumer's Equilibrium and Demand	15	40
	Producer Behaviour and Supply	15	35
	Forms of Market and Price Determination under perfect competition with simple applications	06	25
		40	
			200
Part C	**Project Work**	**20**	**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 **10 Periods**

What is Economics?

Meaning, scope, functions and importance of statistics in Economics

Unit 2: Collection, Organisation and Presentation of data **30 Periods**

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 **50 Periods**

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.

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.

Part B: Introductory Microeconomics

Unit 4: Introduction **10 Periods**

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 **40 Periods**

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 **35 Periods**

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, average 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: Forms of Market and Price Determination under Perfect Competition with simple applications. **25 Periods**

Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply.

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

Part C: Project in Economics 20 Periods

Guidelines as given in class XII curriculum

Suggested Question Paper Design
Economics (Code No. 030)
Class XI (2022-23)
March 2023 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	44	55%
2	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	18	22.5%
3	**Analysing, Evaluating and Creating:** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations. Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	18	22.5%
	Total	**80**	**100%**

ECONOMICS (Code No. 030)
(2022-23)

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 (030)
CLASS – XI (2022-23)

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

Units		Marks	Periods
Part A	**Statistics for Economics**		
	Introduction	15	10
	Collection, Organisation and Presentation of Data		30
	Statistical Tools and Interpretation	25	50
		40	
Part B	**Introductory Microeconomics**		
	Introduction	04	10
	Consumer's Equilibrium and Demand	15	40
	Producer Behaviour and Supply	15	35
	Forms of Market and Price Determination under perfect competition with simple applications	06	25
		40	
			200
Part C	**Project Work**	**20**	**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 **10 Periods**

What is Economics?

Meaning, scope, functions and importance of statistics in Economics

Unit 2: Collection, Organisation and Presentation of data **30 Periods**

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 **50 Periods**

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.

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.

Part B: Introductory Microeconomics

Unit 4: Introduction **10 Periods**

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 **40 Periods**

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 **35 Periods**

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, average 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: Forms of Market and Price Determination under Perfect Competition with simple applications. **25 Periods**

Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply.

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

Part C: Project in Economics 20 Periods

Guidelines as given in class XII curriculum

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Economics (Code No. 030)
Class XI (2022-23)
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	Total	**80**	**100%**

ENGINEERING GRAPHICS (Code No. 046)
CLASS XI-XII (2022-23)

The subject of 'Engineering Graphics' has become an indispensable tool for Engineers, Technocrats, Architects, Draftsmen, Surveyors, Designers and many other professionals in the recent times. It is used to convey the ideas and information necessary for the construction or analysis of machines, structures and system, graphically. It is expected that the knowledge gained through the study of different topics and the skills acquired through the prescribed practical work will make the learners to meet the challenges of academic, professional courses and daily life situations after studying the subject at Senior Secondary Stage.

Objectives:

The study of the subject of Engineering Graphics at Senior School Level aims at helping the learner to:

- Develop clear concept and perception of different objects.
- Develop a clear understanding of plane geometry, solid geometry and machine drawing so as to apply the same in relevant practical fields such as technology and industry.
- Develop the skill of expressing two-dimensional and three-dimensional objects into professional language and vice versa.
- Acquire speed and accuracy in use of drawing instruments.
- Acquire the ability to readily draw neat sketches, often needed in "On-job situations".
- Use technology (CAD) in developing isometric and orthographic projections of simple objects.

UPDATED COURSE STRUCTURE
CLASS XI (2022-23)

One Paper (Theory): 3 Hours 70 Marks
One paper (Practical): 3 Hours 30 Marks

S.No.	Unit	Marks	Periods
I	**PLANE GEOMETRY** 1. Lines, angles and rectilinear figures 2. Circles, inscribing and circumscribing of circles	10	15
II	**SOLID GEOMETRY** 3. Orthographic projection of points and lines 4. Orthographic projection of regular plane figures 5. Orthographic projection of right regular solids	30	70

	6. Section of solids		
III	**MACHINE DRAWING** 7. Orthographic projections of simple machine blocks 8. Isometric projection of laminae (plane figures)	30	50
	Practicals	30	30
	Total Marks	**100**	**165**

THEORY

I. PLANE GEOMETRY **15 Periods**

Printing English alphabets (capital and small) and numerals in standard proportions. Unidirectional/aligned system of dimensioning as per SP 46:2003 (Revised)

Unit 1: Construction of lines, angles and their divisions. Simple questions based on triangles, square, rhombus, regular polygons-pentagon, and hexagon. 8 Periods

Unit 2: Construction of circles, inscribing and circumscribing of circles in equilateral triangle, square, rhombus, regular polygons-pentagon and hexagon. 7 Periods

II. **SOLID GEOMETRY** **70 Periods**

Unit 4: Orthographic projection: dimensioning and conventions strictly as per SP 46:2003 (Revised). Orthographic projection of points and lines. 20 Periods

Unit 5: Orthographic projection of regular plane figures - triangle, square, pentagon, hexagon, circle and semi-circle. 14 Periods

Unit 6: Orthographic projection of right regular solids such as cubes; prisms and pyramids (square, triangular, pentagonal and hexagonal); cones; cylinders; spheres; hemi-spheres; frustum of pyramids and cone, when they are kept with their axis (a) perpendicular to HP/VP (b) parallel to HP and VP both. 20 Periods

Unit 7: Section of right regular solids such as cubes; prisms and pyramids (square, triangular, pentagonal, and hexagonal); cones; cylinders; spheres, kept with their axis perpendicular to HP/VP, made by a vertical cutting plane. 16 Periods

III. **MACHINE DRAWING** **50 Periods**

Unit 8: Orthographic projection of simple machine blocks. 25 Periods

Unit 9: Isometric Projection - Construction of isometric scale showing main divisions of 10 mm and smaller divisions of 1 mm each. Isometric projection (drawn to isometric scale) of regular plane figures - triangle, square, pentagon, hexagon, circle and semi-circle with their surface parallel to HP or VP (keeping one side either parallel or perpendicular to HP/VP). 25 Periods

PRACTICALS **30 Periods**

1. Making different types of graphic designs/ murals for interior/ exterior decorations in colour using the knowledge of geometrical figures with the use of any Computer Software such as Collab-CAD and/or any equivalent pertinent software.
2. Drawing the following engineering curve through activities - ellipse (by trammel & thread method) on the ground/ drawing sheet/ plywood/ cardboard etc.
3. Developing the following solids with the help of cardboard/ thick paper.
    a) cube, cuboid
    b) prisms & pyramids (triangular, square, pentagonal and hexagonal)
    c) right circular cylinder and cone
4. Preparing the section of solids (prisms, pyramids, sphere, etc.) with clay, soap, thermocol, plasticine, wax or any other material (easily and economically available). When the cutting plane is: parallel to the base, perpendicular to the base or inclined to the base.

Note:

I. 10 practicals (minimum two each from aforementioned four points) are to be assessed.

II. In all the practicals, drawing/sketching of the views should be incorporated and evaluated accordingly.

III. The scheme of evaluation is as follows:

(a)	Practicals (2)	15 Marks
(b)	Drawing/ Sketch	05 Marks
(c)	Viva-voce	05 Marks
(d)	Sessional Work	05 Marks
	Total	**30 Marks**

ACTIVITY

Industrial Visits (Two) to any industry/ manufacturing plant to acquaint the students with the present - day methods & technology for better conceptual understanding can be done by virtual tour of the factory/plant. The following links are given as an example for same:

Jindal Industrial visit
https://www.youtube.com/watch?v=FYPbgr2Md-c
Manufacturing process of glass bottle
https://www.youtube.com/watch?v=A_M8WBJMcM0
Power Plant/ Virtually Reality Tour (360^0)
https://youtu.be/34cXKIP39Pg
Machine Tools and Manufacturing Systems
https://www.youtube.com/watch?v=F2qXYyp0GjY

ENGLISH (CORE)

Code No. 301

(2022-23)

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. But for another large group, the higher secondary stage may be a preparation for entry into the professional domain. The Core Course should cater 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 record in writing 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, 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 independentreflection 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, arguinga 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 referencematerials, 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 givento 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 onthe 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.

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 toprofessional 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 wideranging 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 thepurpose 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.
- 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 admissioninto 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 varietyof 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.

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 individualswith 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 whocan learn, unlearn and relearn. If our children are in the habit of reading, they will learnto 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 worldpresented 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 asa 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 withtexts, 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
CODE NO. 301
CLASS – XI (2022-23)

Section A
Reading Skills

Reading Comprehension through Unseen Passage **18 Marks**

I. One unseen passage to assess comprehension, interpretation inference and vocabulary. The passage may be factual, descriptive or literary.

II. One unseen **case-based** passage with verbal/visual inputs like statistical data, charts etc.

Note: The combined word limit for both the passages will be 600-750.

Multiple Choice Questions / Objective Type Questions will be asked. **(10+8 = 18 Marks)**

III. 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

IV. Grammar **7 Marks**

i. Questions on Gap filling (Tenses, Clauses)

ii. Questions on re-ordering/transformation of sentences

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

V. Creative Writing Skills **16 Marks**

i. 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)

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

iii. Writing a Speech in 120-150 words based on verbal / visual cues related to some contemporary / age-appropriate topic.

iv. Writing a Debate based on visual/verbal inputs in 120-150 words. The theme should be contemporary topical issues. One out of the two given questions to be answered. **(5 Marks**: Format: 1 / Content: 2 / Expression: 2)

Section C

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

VI. Reference to the Context

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

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

iii. One prose extract out of two from the book **Snapshots** to assess comprehension, interpretation and analysis. **(4x1=4 Marks)**

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

VIII. One Short answer type question, from the book **Snapshots,** to be answered I n 40- 50 words. Questions should elicit inferential responses through critical thinking. Any 1 out of 2 questions to be done. **(3x1=3 Marks)**

IX. One Long answer type question, from **Prose/Poetry 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 student. Any 1 out of 2 questions to be done. **(1x6=6 Marks)**

X. 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 evaluative and analytical responses using incidents, events, themes as reference points. Any 1 out of 2 questions to be done. **(1x6=6 Marks)**

Prescribed Books

1. **Hornbill:** English Reader published by National Council of Education Research andTraining, 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 EducationResearch 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

Question Paper Design 2022-23 English

CORE XI (Code No. 301)

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

ENGLISH ELECTIVE

Code No. 001

(2022-23)

Background

The course is intended to give students a high level of competence in English with an emphasis on the study of literary texts. The course will provide extensive exposure to a variety of rich texts of world literature as well as Indian writings in English, including classics; develop sensitivity to the creative and imaginative use of English Language and give them a taste for reading with delight and discernment. The course is primarily designed to equip the students to pursue higher studies in English literature and English language at the college level.

Competencies to be focused on:

The general objectives are to:

i. provide extensive exposure to a variety of writings in English, including some classicsto develop sensitivity to literary and creative uses of the language.

ii. further expand the learners' vocabulary resources through the use of dictionary, thesaurus and encyclopedia.

iii. develop a taste for reading with discernment and delight.

iv. critically examine a text and comment on different aspects.

v. develop proficiency in English Language both in receptive and productive skills.

vi. grasp the global meaning of the text, its gist and understand how its theme and sub-themes relate.

vii. relate to the details provided in the text, for example, how the details support a generalization or the conclusion either by classification or by contrast and comparison.

viii. comprehend details, locate and identify facts, arguments, logical relationships, generalization, conclusion, in the texts.

ix. draw inferences, supply missing details, predict outcomes, grasp the significance of particular details and interpret texts.

x. assess and analyze the point of view of the author.

xi. Infer the meanings of words and phrases from the context; differentiate between apparent synonyms.

xii. appreciate stylistic nuances, the lexical structure; its literal and figurative uses and analyse a variety of texts.

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

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

xv. develop the advanced skills of reasoning, inferring, analysing, evaluating and creating.

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

Methods and Techniques

The techniques used for teaching should promote habits of self-learning and reduce dependence on the teacher. The multi-skill, learner-centric, activity-based approach already recommended for the previous stages of education, is still in place, though it will be used in such a way that silent reading of prescribed selected texts for comprehension will receive greater focus as one of the activities. Learners will be trained to read independently and intelligently, interacting actively with texts and other reference materials (dictionary, thesaurus, encyclopedia, etc.) where necessary. Some pre-reading activity will generally be required, as suggested in the course books. The reading of texts should be followed by post reading activities. It is important to remember that every text can generate different reading strategies. Students should be encouraged to interpret texts in different ways, understand the views of others and present their views on a literary text. Some projects may be assigned to students from time to time, for instance, students may be asked to put together a few literary pieces on a given theme, so as to create a meaningful singular hold.

ENGLISH ELECTIVE

(Code No. 001)

CLASS – XI

Section A

Reading

Two unseen passages and a poem **20 Periods**

1. 12 out of 15 questions from a literary or discursive passage of about 950-1000words. **(1x12=12 marks)**
2. 8 questions to test interpretation and appreciation of a poem of about 10-12 lines. **(1x8=8 marks)**
3. 5 out of 7 questions from a case-based passage (with visual input- statistical data, chart etc.) of 100-120 words to test interpretation. **(1x5=5 marks)**

Section B

Creative Writing Skills **20 Periods**

4. An Essay on an argumentative/discursive/reflective/descriptive topic, leading tocreative rendering, forming and defending of opinions, to be answered in 120-150 words. **(5 marks)**
5. Article on one out of two topics to be answered in 120-150 words.Contemporary topical issues to be a part of Article writing. **(5 marks)**
6. Speech on one out of two topics to be answered in 120-150 words.Contemporary topical issues to be a part of Speech writing. **(5 marks)**

Section C

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

Book: Woven Words **60 Periods**

7. **Reference to the Context**
   i. One Prose extract out of two to assess comprehension, Literary, appreciation and inference.
   ii. One Poetry extract out of two to assess comprehension, Literary, appreciation and inference. **(5+5=10 Marks)**
8. Two Short Answer Question out of three to be answered in 30-40 words to assess understanding, analysis and critical appreciation. Questions should elicit inferential responses through critical thinking. **(2x2=4 marks)**
9. Two Short Answer Question out of three to be answered in 50-60 words to assess understanding, analysis and critical appreciation. Questions should elicit inferential responses through critical thinking. **(3x2=6marks)**

Arms and the Man - [Drama] **20 Periods**

10. Two Long Answer Questions out of three to be answered in 80-100 word**s** toappreciate characters, events and episodes. Questions to provide analytical responses using incidents, events, themes as reference points. **(5x2=10 marks)**

Fiction **20 Periods**

11. One Short Answer Question out of two to be answered in 30-40 words to critically appreciate characters, events, episodes and interpersonal relationships and to form their opinions with reference to content, events and episode. **(2 marks)**

12. One Short Answer Question out of two to be answered in 50-60 words to assess understanding, analysis and critical appreciation. Questions should elicit inferential responses through critical thinking. **(3 marks)**

13. One Long Answer Question out of two to be answered in 120-150 words to testliterary appreciation and to draw inferences. Questions should elicit creative responses and develop ability to form opinions. **(5 marks)**

Seminar (20 marks)

- Presentation - book review /a play /a short story/a novel/novella (tale, table, and parable) to be followed by a question-answer session.
- Poetry reading to be followed by interpretative tasks based on close reading and literary analysis of the text.
- Critical review of a film/ documentary or a play.
- Conducting a theatre workshop to be followed by a discussion

Note: Teachers may develop their own rubrics to assess the performance of studentsobjectively

The parameters for assessing Speaking skills as given in the curriculum for English Core may be referred to.

Prescribed Books:

1. **Text book: Woven Words** published by NCERT
2. **Fiction: The Old Man and the Sea** (Novel unabridged) by Ernest Hemingway
3. **Drama: Arms and the Man** by George Bernard Shaw

Book-Woven Words- *Short Stories*

- *The Lament*
- *A Pair of Mustachios*
- *The Rocking-horse Winner*
- *The Adventure of the Three Garridebs*
- *Pappachi's Moth*
- *The Third and Final Continent*

Book-Woven Words-*Poetry*

- *The Peacock*
- *Let me Not to the Marriage of True Minds*
- *Coming*
- *Telephone Conversation*
- *The World is too Much With Us*
- *Mother Tongue*
- *Hawk Roosting*
- *Ode to a Nightingale*

Book-Woven Words-Essays

- *My Watch*
- *My Three Passions*
- *Patterns of Creativity*
- *Tribal Verse*
- *What is a Good Book?*
- *The Story*
- *Bridges*

Question Paper Design 2022-23
English Elective Class XI

MARKS 80+20=100

Section	**Competencies**	**Total marks**	**% Weightage**
Comprehension	Conceptual understanding, decoding, analyzing, inferring, interpreting, appreciating, literary, conventions and vocabulary	25	31.25%
Creative Writing	Reasoning, appropriacy of style and tone, use of appropriate format and fluency	15	18.75%
Literature Texts	Recalling, reasoning, appreciating literary conventions illustrating with relevant quotations from the texts, giving opinions and justifying with fluency	20	25%
Drama	Recalling, reasoning, appreciating literary conventions, illustrating with relevant quotations from the texts, giving opinions and justifying with fluency	10	12.50%
Fiction	Recalling, reasoning, appreciating literary conventions, illustrating with relevant quotations from the texts, giving opinions and justifying with fluency	10	12.50%
	TOTAL	**80**	**100%**
Seminar	Seeking information and clarifying, illustrating with relevant quotations from the texts, reasoning, diction, articulation clarity of pronunciation, using appropriate language conventions Addressing participants using appropriate titles or nomenclatures andoverall fluency	20	-
	Grand Total	**100**	

ENTREPRENEURSHIP
CLASS XI-XII (2022-23)
(CODE NO. 066)

Rationale

School curriculum is a dynamic process. It continuously evolves itself reflecting the needs and aspirations of learners. In recent times, our society is influenced by knowledge creation and technological advancements. Competencies affecting Innovation and creativity have become important in all walks of life, including business context. This makes entrepreneurship education even more important for enhancing quality of life.

Entrepreneurship plays an influential role in the economic growth and development of the country. As the world economy is changing so is the dynamism of the business world. The aim of this course is to instill and kindle the spirit of Entrepreneurship amongst students. The idea of this course is to create “job providers rather than job seekers”.

Objectives:

- To develop Entrepreneurial mindset among Higher Secondary School children.
- To encourage school children to opt for self-employment as a viable option for earning dignified means of living.
- To enable students to appreciate the dynamic changes happening in the economy.
- To acquaint the students about the role of Entrepreneurship in the growth and economic development of the nation.
- To promote Entrepreneurship as life-skills to improve quality of life, skills of creation and management of entrepreneurial pursuits.

COURSE STRUCTURE
CLASS–XI (2022-23)

Theory Paper

Time: 3 hours **Maximum marks: 70**

S. No.	Unit	No. of Periods	Marks
Unit 1	Entrepreneurship: Concept and Functions	15	**15**
Unit 2	An Entrepreneur	25	
Unit 3	Entrepreneurial Journey	30	**20**
Unit 4	Entrepreneurship as Innovation and Problem Solving	30	
Unit 5	Understanding the Market	40	**15**
Unit 6	Business Finance and Arithmetic	30	**20**
Unit 7	Resource Mobilization	30	
	PROJECT WORK	40	**30**
	Total	**240**	**100**

COURSE CONTENT

Unit 1: Entrepreneurship: Concept and Functions	**15 Periods**
Competencies- Vision, Decision making, Logical, Critical and Analytical Thinking, Managing Skills	
Contents	**Learning Outcomes**
• Entrepreneurship – Concept, Functions and Need • Why Entrepreneurship for You • Myths about Entrepreneurship • Advantage and Limitations of Entrepreneurship • Process of Entrepreneurship • Entrepreneurship – The Indian Scenario	After going through this unit, the student/ learner would be able to: • Understand the concept of Entrepreneurship • Explain the functions of an Entrepreneur • Appreciate the need for Entrepreneurship in our economy • Assess how entrepreneurship can help shape one's career • State the myths, advantages and limitations of Entrepreneurship • Discuss the steps in the process of Entrepreneurship • Describe the current scenario of Entrepreneurial activity in India
Unit 2: An Entrepreneur	**25 Periods**
Competencies: Need Achievement, Motivation, Ethics, opportunity seeking, Passion, Independence	
Contents	**Learning Outcomes**
• Why be an Entrepreneur • Types of Entrepreneurs • Competencies and characteristics • Entrepreneurial Values, Attitudes and Motivation • Intrapreneur: Meaning and Importance	After going through this unit, the student/ learner would be able to: • Understand the motivation to become an entrepreneur • Differentiate between various types of entrepreneurs • Explain the competencies of an Entrepreneur • Appreciate the importance of Ethical Entrepreneurship • Appreciate the difference between Entrepreneur and Intrapreneur

Unit 3: Entrepreneurship Journey	**30 Periods**
Competencies: **Scanning the environment; Information seeking; creativity; Innovativeness; divergent thinking; Perseverance**	
Contents	**Learning Outcomes**
• Idea generation. • Feasibility Study and opportunity assessment • Business Plan: meaning, purpose and elements • Execution of Business Plan	After going through this unit, the student/ learner would be able to: • Understand ways of idea generation. • Discuss the concept of types of feasibility study • Draft a basic business plan • Understand the reasons for success and failure of business plan
Unit 4: Entrepreneurship as Innovation and Problem Solving	**30 Periods**
Competencies: Risk taking; Determination; Initiative; problem solving ability; Adaptability to changing technologies	
Contents	**Learning Outcomes**
• Entrepreneurs as problem solvers • Innovations and Entrepreneurial Ventures – Global and Indian • Role of Technology – E-commerce and Social Media • Social Entrepreneurship - Concept	After going through this unit, the student/ learner would be able to: • Understand the role of entrepreneurs as problem solvers • Appreciate the role of global and Indian innovations in entrepreneurial ventures • Understand the use of technology and digitization for new businesses. • Discuss the concept of social entrepreneurship

Unit 5: Understanding the Market	**40 Periods**
Competencies: Task oriented, Opportunity seeking, resourcefulness, organizational skills, Analytical and logical reasoning	
Contents	**Learning Outcomes**
• Market: Concept, Types • Micro and Macro Market Environment • Market Research - Concept, Importance and Process • Marketing Mix	After going through this unit, the student/ learner would be able to: • Scan the market environment • Learn how to conduct market research • Understand the elements of marketing mix
Unit 6: Business Finance and Arithmetic	**30 Periods**
Competencies: Arithmetic skills, critical analysis, decision making, self-confidence, problem solving	
Contents	**Learning Outcomes**
• Unit of Sale, Unit Price and Unit Cost - for single product or service • Types of Costs - Start up, Variable and Fixed • Break Even Analysis - for single product or service	After going through this unit, the student/ learner would be able to: • Discuss - Unit Cost, Unit of Sale, Unit Price of a product or service • Understand the components of COST - Start-up and operational costs • Calculate break even of single product and service

Unit 7: Resource Mobilization	**30 Periods**
Competencies: Resourcefulness; Collaboration; Managing Risk; Organizational Skills; Informed Decision Making	
Contents	**Learning Outcomes**
• Types of Resources – Physical, Human, Financial and Intangible. • Selection and utilization of human resources and professionals like Accountants, Lawyers, Auditors, Board Members, etc.	After going through this unit, the student/ learner would be able to: • Identify the different types of resource tools – Physical and material, Human, Financial, Intangibles

PROJECT WORK

Students have to do **TWO projects** in the entire academic session.

Assessment details for the project work:

- 10 Marks each for 02 Projects
- 5 Marks for Numerical Assessment
- 5 marks for Viva Voce

TOPICS FOR THE PROJECT:

1. Visit of the District Industries Centre and prepare a report of activities and programs undertaken by them
2. Conduct a case study of any entrepreneurial venture in your nearby area.
3. Field Visit: Visit any business firm near your locality; interact with the owner of the business firm and prepare a field report on parameters like: type of business, scale of business, product/service dealing in, target customer, problems faced and measures to solve the faced challenges.
4. Learn to Earn
5. Know your State Handicraft and Handlooms as a means of economic activity for the livelihood of people and intellectual property rights attached to them for the promotion of local specific skills.

1. The objectives of the project work:

Objectives of project work are to enable learners to:

- probe deeper into personal enquiry, initiate action and reflect on knowledge and skills, views etc. acquired during the course of class XI-XII.
- analyse and evaluate real world scenarios using theoretical constructs and arguments
- demonstrate the application of critical and creative thinking skills and abilities to produce an independent and extended piece of work
- follow up aspects in which learners have interest
- develop the communication skills to argue logically

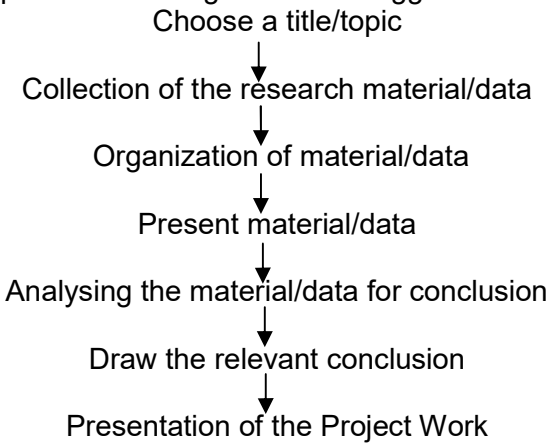
2. Role of the teacher:

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

- help each learner select the topic 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 must understand the relevance and usage of primary evidence and other sources in their projects and duly acknowledge the same;
- ensure that the 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.
- prepare the learner for the presentation of the project work.
- arrange a presentation of the project file.

3. Steps involved in the conduct of the project:

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



4. **Expected Checklist for the Project Work:**

- Introduction of topic/title
- Identifying the product/service/entrepreneur
- Identify the State handicraft
- Various stakeholders and effect on each of them
- Use of different tools for market assessment and it's analysis
- Calculation of various costs involved in the selling process
- 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.

5. Viva-Voce

- At the end of the academic session, each learner will present the research work in the Project File to the 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.

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

ENTREPRENEURSHIP (Code no. 066)
QUESTION PAPER DESIGN
CLASS XI (2022-23)

S.No.	Competencies	Total Marks	% Weightage
1.	**Remembering**: Exhibit memory of previously learned material by recalling facts, listing elements, terms and basic concepts **Understanding**: Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	20	28.5%
2.	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in different ways.	30	43%
3.	**Analysing and Evaluating:** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations, integrated learning; 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	20	28.5%
	TOTAL	**70**	**100%**

Fine Arts (2022-23)

A student may offer any one of the following course:

(a) **Painting** (Code No.049)
OR
(b) **Graphics** (Code No.050)
OR
(c) **Sculpture** (Code No.051)
OR
(d) **Applied Art-Commercial Art** (Code No.052)

The following art terminologies for all the four subjects are prescribed only for reference and general enrichment.

1	Six limbs of Indian Painting	Sadangas
2	Fundamentals of Visual Arts	
	Elements	Point, line, colour, tone, texture and space.
	Principles	Unity, harmony, balance, rhythm, emphasis and proportion,
3	Drawing & Painting and materials	Abstraction and stylization, Foreshortening, perspective, eye level, fixed point of view, Vanishing point, ratio-proportion, sketching, drawing light and shade, still- life, land-scape, anatomy, vertical, horizontal, two and three dimensional, transparent and opaque Paper (Cartridge, handmade canvas and Hard- board Handmade, ect.), Pencil, water colour, acrylic colour, transparent
4	Media of Composition	Collage, Mosaic, Painting, Mural, Fresco, Batik Tie and Dye.
5	Sculpture	Relief and round sculpture, modeling with clay, terra-cotta, carving in wood, stone, bronze casting, plaster of Paris and metal welding.
6	Graphics	Linocut, relief printing, etching, Lithography, silk screen printing,.
7	Applied Art – Commercial Art	Book cover design and illustration, cartoon, poster, Advertisements, newspaper and magazine, animation and printing processes, photography, computer-graphic, hoarding and T.V, letter press and offset printing
8	Portfolio Assessment Method	

Introduction

The Art Portfolio will consist of a compilation of all art works, from sketch to finished product. The submission would include both the original and improved versions of assigned tasks reflective of gradual improvement. Step by step development of the work will be assessed in all units.

Components of a Portfolio:

- Schedule of work
- Research Skills
- Resources and materials
- Study of connections with artists / art movements
- Art making skills
- Personal artist statement
- Studies (e.g.,composition/techniques-medium)
- Picture of the final work (reflective skills)
- Evaluation of final work (affective skills)
- Any kind of personalized notes in relation to artwork

Profile of Learners Growth Values and Attitudes Rubric. The learner develops the ability to:

- Respect, appreciate and demonstrate an open mind towards the artistic expression of others
- Appears enthusiastic and willing to study artistic expressions from other cultures or regions of the world that are very different from own.
- Accept different forms and styles and tries to explore their meaning.
- Be sensitive towards other's creations
- Be ready to research and transfer his/her learning to his / her own art
- Take initiative
- Be responsible for his/her own learning and progress
- Apply theoretical knowledge in practical contexts
- Possess information and communication technology skills
- Be resourceful and organize information effectively
- Listen attentively

PORTFOLIO ASSESSMENT FOR FINE ARTS MAY BE DONE ON

THE BASIS OF FOLLOWING CRITERIA

Creativity: Candidates are required to produce evidence that demonstrates a creative approach to problem-solving. Evidence should also include the ability to interpret a given brief and original approaches to produce a solution. Sketchbooks, notebooks and relevant support material should form part of this evidence.

1. Drawing
2. Detailed Study - observation, record, analysis, interpreting a variety of subject
3. Mood reflected
4. Follow-up of the Fundamentals of Visual Arts (Elements and Principles)
5. Message the artist wants to convey

Innovation: The knowledge gained with the help of case study (historical importance, great artist). How has the above been understood in relation to the topic or the theme taken up by the student?

Technique: To foster creativity and self-expression (basic understanding of colour concept and application in relation to colour and texture of the material used by the student). Size, details, proportion required according to the base used for the painting medium chosen according to their art stream. Techniques studied from folk style, contemporary art or traditional art should be used while creating a new concept.

The learners:

- Discover their potential for creativity, self-expression and visual awareness through painting.
- Feel confident with the chosen medium as a means of communicating and generating ideas.
- Develop observation, recording, manipulation and application skills.
- Experiment with a range of media and techniques.
- Relate their work to other artists work and understand the historical context of this work.
- Understand the basic principles of colour.
- Develop critical awareness.

Execution of Work

- Highlight the method of work giving a historical study of the work.
- Originality in the presentation (paintings, sketches, etc.)
- Demonstrate an understanding of basic colour principles, colour mixing and representation.
- Employ a variety of traditional and experimental techniques and processes
- Use a variety of media and materials
- Observe, record, analyses, interpret a variety of subjects, including:
  – the manufactured environment
  – the natural environment
  – the human figure
- Present evidence of personal enquiry and self-expression
- Discuss and relate own work to recognize artists work

- Observe colour in other craft and design areas
- Make informed critical judgment on work in progress

Experimentation

A. **Progressive Work:** Candidates are required to show evidence of research carried out. It is expected that their skills will demonstrate evidence of process and the exploration of a wide range of subjects. An accepted standard of achievement using a range of media and material should be an integral part of the candidate's development.
B. **Skills:** Sound aesthetic judgment and organizational skills should be demonstrated in the process of presented by a candidate.
C. **Logical organization and collection of creations.**
D. **Critical evaluation and aesthetic judgment applied**

(A) PAINTING (Code No. 049)

Introduction

The course in Painting at Senior Secondary stage as an elective subject is aimed to develop aesthetic sense of the students through the understanding of various important well known aspects and modes of visual art expression in India's rich cultural heritage from the period of Indus valley to the present time. It also encompasses practical exercises in drawing and painting to develop their mental faculties of observation, imagination, creation and physical skills required for its expressions.

Objectives

A) Theory (History of Indian Art)

The objective of including the history of Indian Art for the students is to familiarise them with the various styles and modes of art expressions from different parts of India. This would enrich their vision and enable them to appreciate and develop an aesthetic sensibility to enjoy the beauty of nature and life. The students will also have an opportunity to observe and study the evolution of its mutations and synthesis with other style and the rise of an altogether new style. The students should be made aware of art as a human experience. The teachers should be able to expose them to the wide range of artistic impressions, the media and the tools used. The history of Indian art is a long one. Hence the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation. Examples included in the course of study are selected because of their aesthetic qualities and are intended purely as guidelines.

B) Practicals

The purpose of introducing practical exercises in painting is to help and enable the Students:

- To develop skill of using drawing and painting material (surface, tools and equipment, etc.) effectively.
- To sharpen their observation skills through study of common objects and various geometrical and non-geometrical forms found in life and nature.
- To develop their skills to draw and paint these observations.
- To develop an understanding of painting-composition (The use of the elements and the principles of painting-composition).
- To create the forms and the colour schemes in imagination with an ability to express them effectively in drawing and painting.
- To express the different feelings and moods of life and nature in lines, forms and colours.

CLASS-XI (THEORY) (2022-23)
(Code No. 049)

One Theory Paper **30 Marks**
Unit wise Weightage **Time: 2 Hours**

Units		Periods	Marks
	History of Indian Art		
1	Pre-Historic rock paintings and art of Indus Valley	24	10
2	Buddhist, Jain and Hindu Art	24	10
3	Temple Sculptures, Bronzes and Artistic aspects of Indo-Islamic architecture	24	10
		72	**30**

Unit	Content	24 Periods
1.	A. Pre-Historic Rock-Paintings Introduction 1) Period and Location 2) Study and appreciation of following Pre-historic paintings: i. Wizard's Dance, Bhimbethaka	
	B. Introduction 1) Period and Location. 2) Extension: In about 1500 miles. i. Harappa &Mohenjo-daro (Now in Pakistan) ii. Ropar, Lothal, Rangpur, Alamgirpur, Kali Bangan, Banawali and Dholavira (in India)	
2	Study and appreciation of following: Sculptures and Terra cottas: i. Dancing girl (Mohenjo-daro) Bronze, 10.5 x 5 x 2.5 cm. Circa 2500 B.C. (Collection: National Museum, New Delhi). ii. Male Torso(Harappa) Red lime Stone, 9.2 x 5.8 x 3 cms. Circa 2500 B.C. (Collection: National Museum, New Delhi) iii. Mother Goddess (Mohenjo-daro) terracotta, 22 x 8 x 5 c Circa 2500 B.C. (Collection: National Museum, New Delhi).	
3	**Study and appreciation of following Seal:**	
	i. Bull (Mohenjo-daro) Stone (Steatite), 2.5 x 2.5 x 1.4 cm. Circa 2500 B.C. (Collection: National Museum, New Delhi). Decoration on earthen wares: Painted earthen-ware (Jar) Mohenjo-daro (Collection: National Museum, New Delhi).	

Unit 2	**Buddhist, Jain and Hindu Art (3rd century B.C. to 8th century A.D.)**	**24 Periods**
1.	General Introduction to Art during Mauryan, Shunga, Kushana (Gandhara and Mathura styles) and Gupta period:	
2.	Study and appreciation of following Sculptures:	
	i. Lion Capital from Sarnath (Mauryan period) Polished sandstone, Circa 3rd Century B.C. (Collection: Sarnath Museum, U.P.)	
	ii. Chauri Bearer from Didar Ganj (Yakshi) (Mauryan period) Polished sandstone Circa 3rd Century B.C.(Collection: Patna Museum, Bihar)	
	iii. Seated Buddha from Katra Mound, Mathura-(Kushan Period-Mathura Style) Red-spotted Sand Stone, Circa 3rd Century AD. (Collection: Govt. Museum, Mathura)	
	iv. Jain Tirathankara (Gupta period) Stone Circa 5th Century A.D. (Collection: State Museum, Lucknow U.P.)	
3.	**Introduction to Ajanta Location** Period, No of caves, Chaitya and Vihara, paintings and sculptures, subject matter and technique etc.	
Unit 3	**Temple Sculpture, Bronzes and artistic aspects of Indo-Islamic Architecture**	**24 Periods**
(A)	Artistic aspects of Indian Temple sculpture (6th Century A.D. to 13th Century A.D.) 1) Introduction to Temple Sculpture (6th Century A.D. to 13th Century A.D.) 2) Study and appreciation of following Temple-Sculptures: i. Descent of Ganga (Pallava period, Mahabalipuram, Tamil Nadu), granite rock Circa 7th Century A.D.	
	ii. Trimuti (Elephanta, Maharashtra) Stone Circa 9th Century A.D.	
	iii. Lakshmi Narayana (Kandariya Mahadev Temple) (Chandela period, Khajuraho, Madhya Pradesh) Stone Circa 10th Century A.D.	
	iv. Cymbal Player, Sun Temple (Ganga Dynasty, Konark, Orrisa) Stone Circa 13th Century A.D.	
	v. Mother and Child (Vimal-Shah Temple, Solanki Dynasty, Dilwara, Mount Abu; Rajasthan) white marble, Circa 13th Century A.D.	
(B)	**Bronzes :**	
	1. Introduction to Indian Bronzes.	
	2. Method of casting (solid and hollow)	
	3. Study and appreciation of following South Indian Bronze:	
	i. Nataraj (Chola period Thanjavur Distt.,Tamil Nadu) 12th Century A.D. (Collection : National Museum, New Delhi)	

(C)	**Artistic aspects of the indo-Islamic architecture:** 1. Introduction 2. Study and appreciation of following architecture: i. Qutub Minar, Delhi ii. Gol Gumbad of Bijapur	

CLASS-XI (2022-23)
(PRACTICAL)

One Practical Paper **70 Marks**

Time: 6 Hours (3+3)

Unit wise Weightage

Units	Content	Periods	Marks
1	Nature and Object Study	50	25
2	Painting Composition	50	25
3	Portfolio Assessment	48	20
		148	70

Unit 1: Nature and Object Study **25 Marks 50 Periods**

Study of two or three natural and geometric forms in pencil with light and shade from a fixed point of view. Natural forms like plants, vegetables, fruits and flowers, etc., are to be used. Geometrical forms of objects like cubes, cones, prisms, cylinders and spheres should be used.

Unit 2: Painting Composition **25 Marks 50 Periods**

(i) Simple exercises of basic design in variation of geometric and rhythmic shapes in geometrical and decorative designs and colours to understand designs as organised visual arrangements. 10 Marks 25 Periods

(ii) Sketches from life and nature 15 Marks 25 Periods

Unit 3: Portfolio Assessment **20 Marks 48 Periods**

(a) Record of the entire years' performance from sketch to finished product. 10 Marks

(b) Five selected nature and object study exercises in any media done during session including the minimum of two still life exercises. 05 Marks

(c) One selected work of paintings composition done during the year 03 Marks

(d) Two selected works of paintings done during the year 02 Marks

These selected works prepared during the course by the candidates and certified by the school authorities as the work done in the school will be placed before the examiners for assessment.

Note:

1. The candidates should be given one hour-break after first three hours.
2. The time-table to be so framed as to allow the students to work continuously for minimum of two periods at a stretch.

GEOGRAPHY
XI-XII (2022-23)
(Code No. 029)

Geography is introduced as an elective subject at the senior secondary stage. After ten years of general education, students branch out at the beginning of this stage and are exposed to the rigors of the discipline for the first time. Being an entry point for the higher education, students choose Geography for pursuing their academic interest and, therefore, need a broader and deeper understanding of the subject. For others, geographical knowledge is useful in daily lives because it is a valuable medium for the education of young people. Its contribution lies in the content, cognitive processes, skills and values that Geography promotes and thus helps the students explore, understand and evaluate the environmental and social dimensions of the world in a better manner.

Since Geography explores the relationship between people and their environment, it includes studies of physical and human environments and their interactions at different scales-local, state/region, nation and the world. The fundamental principles responsible for the varieties in the distributional pattern of physical and human features and phenomena over the earth's surface need to be understood properly. Application of these principles would be taken up through selected case studies from the world and India. Thus, the physical and human environment of India and study of some issues from a geographical point of view will be covered in greater detail. Students will be exposed to different methods used in geographical investigations.

Objectives:

The course in Geography will help learners to:

- Familiarize with key concepts, terminology and core principles of Geography.
- Describe locations and correlate with Geographical Perspectives.
- List/describe what students might see, hear, and smell at a place.
- List/describe ways a place is linked with other places.
- Compare conditions and connections in one place to another.
- Analyze/describe how conditions in one place can affect nearby places.
- Identify regions as places that are similar or connected.
- Describe and interpret the spatial pattern features on a thematic map.
- Search for, recognize and understand the processes and patterns of the spatial arrangement of the natural features as well as human aspects and phenomena on the earth's surface.
- Understand and analyze the inter-relationship between physical and human environments and utilize such knowledge in reflecting on issues related to community.

- Apply geographical knowledge and methods of inquiry to emerging situations or problems at different levels-local, regional, national and global.
- Develop geographical skills, relating to collection, processing and analysis of spatial data/ information and preparation of report including maps and graphs and use of computers where ever possible; and to be sensitive to issues.
- The child will develop the competency to analyze, evaluate, interpret and apply the acquired knowledge to determine the environmental issues effectively.

COURSE STRUCTURE

CLASS XI (2022-23)

One Theory Paper **70 Marks**
3 Hours

Part	Units	No. of Periods	Marks
A	**Fundamentals of Physical Geography**	**89**	**35 Marks**
	Unit-1: Geography as a discipline	06	**30**
	Unit-2: The Earth	11	
	Unit-3: Landforms	20	
	Unit-4: Climate	30	
	Unit-5: Water (Oceans)	10	
	Unit-6: Life on the Earth	07	
	Map and diagram	05	**5**
B	**India-Physical Environment**	**78**	**35 Marks**
	Unit-7: Introduction	04	**30**
	Unit-8: Physiography	28	
	Unit-9: Climate and Natural Vegetation	28	
	Unit-10: Natural hazards and disasters	14	
	Map and Diagram	04	**5**
	Total	**167**	**70 Marks**
C	**Practical Work in Geography Part I**	**50**	**30 Marks**
	Unit-1: Fundamentals of Maps	25	**15 Marks**
	Unit-2: Topographic Maps	25	**10 Marks**
	Practical Record Book and Viva		**5 Marks**

COURSE CONTENT

Part A:	Fundamentals of Physical Geography	89 Periods
Unit 1:	**Geography as a Discipline** ▪ Geography as an integrating discipline, as a science of spatial attributes ▪ Branches of Geography: Physical Geography and Human Geography	**06 Periods**
Unit 2:	**The Earth** ▪ Origin and evolution of the earth ▪ Interior of the earth Earthquakes and volcanoes: causes, types and effects ▪ Distribution of oceans and continents : Wegener's continental drift theory and plate tectonics	**11 Periods**
Unit 3:	**Landforms** ▪ Geomorphic processes: weathering; mass wasting; erosion and deposition; soil-formation ▪ Landforms and their evolution- Brief erosional and depositional features	**20 Periods**
Unit 4:	**Climate** ▪ Atmosphere- composition and structure; elements of weather and climate ▪ Solar Radiation-Insolation-angle of incidence and distribution; heat budget of the earth-heating and cooling of atmosphere (conduction, convection, terrestrial radiation and advection); temperature- factors controlling temperature; distribution of temperature-horizontal and vertical; inversion of temperature ▪ Atmospheric circulation and weather systems - Pressure-pressure belts; winds-planetary, seasonal and local; air masses and fronts; tropical and extra tropical cyclones ▪ Water in the atmosphere-Precipitation-evaporation; condensation-dew, frost, fog, mist and cloud; rainfall-types and world distribution ▪ World Climate and Global Concerns	**30 Periods**

Unit 5:	**Water (Oceans)** ▪ Basics of Oceanography ▪ Oceans - distribution of temperature and salinity ▪ Movements of ocean water-waves, tides and currents; submarine reliefs	**10 Periods**
Unit 6:	**Life on the Earth** ▪ Biosphere - importance of plants and other organisms; biodiversity and conservation	**07 Periods**
Map work on identification of features based on 1 to 6 units on the outline Physical/Political map of the world.		**05 Periods**
Part B:	**India-Physical Environment**	**78 Periods**
Unit 7:	**Introduction** ▪ India : Location, space relations, India's place in the world	**04 Periods**
Unit 8:	**Physiography** ▪ Structure and Relief; Physiographic Divisions ▪ Drainage systems: Concept of river basins, watershed; the Himalayan and the Peninsular rivers	**28 Periods**
Unit 9:	**Climate, Vegetation and Soil** ▪ Weather and climate - spatial and temporal distribution of temperature, Indian monsoon: mechanism, onset and withdrawal ▪ Natural vegetation-forest types and distribution; wild life; conservation; biosphere reserves	**28 Periods**
Unit 10:	**Hazards and Disasters: Causes, Consequences andManagement** ▪ Floods, Cloudbursts ▪ Droughts: types and impact ▪ Earthquakes and Tsunami Cyclones: features and impact ▪ Landslides	**14 Periods**
Map Work of features based on above units for locating andlabeling on the outline Political/Physical map of India		**04 Periods**

Part C:	**Practical Work in Geography Part I**	**50 Periods**
Unit 1:	**Fundamentals of Maps** ▪ Geo spatial data, Concept of Geographical data matrix; Point, line, area data ▪ Maps - types; scales-types; construction of simple linear scale, measuring distance; finding direction and use of symbols ▪ Map projection- Latitude, longitude and time, typology, construction and properties of projection: Conical with one standard parallel and Mercator's projection. (only two projections)	**25 Periods**
Unit 2:	**Topographic and Weather Maps** ▪ Study of topographic maps (1 : 50,000 or 1 : 25,000 Survey of India maps); contour cross section and identification of landforms-slopes, hills, valleys, waterfall, cliffs; distribution of settlements ▪ Satellite imageries, stages in remote sensing data- acquisition, platform and sensors and data products, (photographic and digital)	**25 Periods**
	Practical Record Book and Viva Voce **Viva to be based on Practical Unit I and II only.**	

हिंदी (आधार) (कोड सं.– 302)
कक्षा 11वीं–12वीं (2022 -23)

प्रस्तावना :

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 सामान्य से ऊपर उस स्तर तक ले जाने की आवश्यकता होती है, जहाँ भाषा का प्रयोग भिन्न-भिन्न व्यवहार-क्षेत्रों की मांगों के अनुरूप किया जा सके। आधार पाठ्यक्रम, साहित्यिक बोध के साथ-साथ भाषाई 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 सम्यक् दृष्टि का विकास हो सकेगा।

राष्ट्रीय पाठ्यचर्या की रूपरेखा, नई शिक्षा नीति 2020 तथा केंद्रीय माध्यमिक शिक्षा बोर्ड द्वारा समय-समय पर दक्षता आधारित शिक्षा, कला समेकित अधिगम, अनुभवात्मक अधिगम को अपनाने की प्रेरणा दी 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 करता 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 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 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 ही 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 ही 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 ही अधिक व्यक्त करेंगे, उतनी ही ज़्यादा स्पष्टता उनमें 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 जरूरी है कि शिक्षार्थियों को सिर्फ 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 भी जरूरी 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 को 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 जरूरत 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 जरूरी 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 जरूरत है। इनके प्रदर्शन के क्रम में इन पर लगातार बातचीत के जरिए 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 सिर्फ 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 जरूरी 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, कवितापाठ 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 शृंखला 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 ।

- **वाचन - श्रवण कौशल एवं परियोजना कार्य का मूल्यांकन विद्यालय स्तर पर आंतरिक परीक्षक द्वारा ही किया जाएगा।**

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, नई शिक्षा नीति 2020 तथा केन्द्रीय माध्यमिक शिक्षा बोर्ड द्वारा समय-समय पर अनुभवात्मक अधिगम, आनंदपूर्ण अधिगम की बात की 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 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 स्त्रोत को अवश्य अंकित करना चाहिए।
- चित्र, रेखाचित्र, विज्ञापन, ग्राफ, विषय से संबंधित आँकड़े, विषय से संबंधित समाचार की कतरनें एकत्रित के जानी चाहिए।
- प्रमाणस्वरूप सम्मिलित किए गए आँकड़े, चित्र, विज्ञापन आदि के स्त्रोत अंकित करने के साथ-साथ समाचार-पत्र, पत्रिकाओं के नाम एवं दिनांक भी लिखने 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 विषय**
    - कोविड -19 और हम
    - 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।

हिंदी (आधार) (कोड सं. 302) कक्षा –11वीं (2022 -23)
परीक्षा हेतु पाठ्यक्रम विनिर्देशन

- **प्रश्न-पत्र दो खण्डों - खंड 'अ' और 'ब' का होगा|**
- **खंड 'अ' में 45 वस्तुपरक प्रश्न पूछे जाएँगे जिनमें से केवल 40 प्रश्नों के ही उत्तर देने होगें |**
- **खंड 'ब' में वर्णनात्मक प्रश्न पूछे जाएँगे| प्रश्नों में उचित आंतरिक विकल्प दिए जाएँगे |**

भारांक 100 **निर्धारित समय 3 घंटे**

खंड अ (वस्तुपरक प्रश्न)			
विषयवस्तु			**भार**
1	**अपठित गद्यांश**		**15**
	अ	एक अपठित गद्यांश (अधिकतम 300 शब्दों का) (1 अंक x 10 प्रश्न)	10
	ब	दो अपठित पद्यांशों में से कोई एक पद्यांश (अधिकतम 150 शब्दों का) (1 अंक x 5 प्रश्न)	05
2	**पाठ्यपुस्तक अभिव्यक्ति और माध्यम की इकाई एक से पाठ संख्या 1 तथा 2 पर आधारित**		**05**
	बहुविकल्पात्मक प्रश्न (1 अंक x 5 प्रश्न)		05
3	**पाठ्यपुस्तक आरोह भाग – 1 से बहुविकल्पात्मक प्रश्न**		**10**
	अ	पठित काव्यांश पर पाँच बहुविकल्पी प्रश्न (1 अंक x 05 प्रश्न)	05
	ब	पठित गद्यांश पर पाँच बहुविकल्पी प्रश्न (1 अंक x 05 प्रश्न)	05
4	**पूरक पाठ्यपुस्तक वितान भाग-1 से बहुविकल्पात्मक प्रश्न**		**10**
	अ	पठित पाठों पर दस बहुविकल्पी प्रश्न (1 अंक x 10 प्रश्न)	10
खंड – ब (वर्णनात्मक प्रश्न)			
विषयवस्तु			**भार**
5	**पाठ्यपुस्तक अभिव्यक्ति और माध्यम से सृजनात्मक लेखन और व्यावहारिक लेखन पाठ संख्या 1, 2, 9, 10, 14, 15 तथा 16 पर आधारित**		**20**
	1	दिए गए चार अप्रत्याशित विषयों में से किसी एक विषय पर लगभग 120 शब्दों में रचनात्मक लेखन (6 अंक x 1 प्रश्न)	05
	2	औपचारिक पत्र लेखन। (5 अंक x 1 प्रश्न) (विकल्प सहित)	05
	3	डायरी लेखन, कथा - पटकथा विषयों पर लेखन पर आधारित दो प्रश्न (3 अंक x 2 प्रश्न) (विकल्प सहित) (लगभग 60 शब्दों में)	06

	4	स्ववृत्त लेखन और रोजगार संबंधी आवेदन पत्र तथा शब्दकोश, संदर्भ ग्रंथों की उपयोगी विधि और परिचय पर आधारित तीन में से दो प्रश्न (2 अंक x 2 प्रश्न) (विकल्प सहित) (लगभग 40 शब्दों में)	04
6	**पाठ्यपुस्तक आरोह भाग – 1**		**20**
	1	काव्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 60 शब्दों में) (3 अंक x 2 प्रश्न)	6
	2	काव्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 40 शब्दों में) (2 अंक x 2 प्रश्न)	4
	3	गद्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 60 शब्दों में) (3 अंक x 2 प्रश्न)	6
	4	गद्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 40 शब्दों में) (2 अंक x 2 प्रश्न)	4
7	**(अ) श्रवण तथा वाचन**		**10**
	(ब) परियोजना कार्य		**10**
कुल अंक			**100**

प्रस्तावित पुस्तकें :

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।

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 (ऐच्छिक) कोड संख्या - 002
कक्षा 11वीं - 12वीं (2022-23)

प्रस्तावना:

उच्चतर माध्यमिक स्तर में प्रवेश लेने वाला विद्यार्थी पहली बार सामान्य शिक्षा से विशेष अनुशासन की शिक्षा की ओर उन्मुख होता है। दस वर्षों में विद्यार्थी भाषा के कौशलों से परिचित हो जाता है। भाषा और साहित्य के स्तर पर उसका दायरा अब घर, पास-पड़ोस, स्कूल, प्रांत और देश से होता हुआ धीरे-धीरे विश्व तक फैल जाता है। वह इस उम्र में पहुँच चुका है कि देश की सांस्कृतिक, सामाजिक, राजनीतिक और आर्थिक समस्याओं पर विचार-विमर्श कर सके, एक ज़िम्मेदार नागरिक की तरह अपनी ज़िम्मेदारियाँ को समझ सके तथा देश और खुद को सही दिशा दे सकने में भाषा की ताकत को पहचान सके। ऐसे दृढ़ भाषिक और वैचारिक आधार के साथ जब विद्यार्थी आता है तो उसे विमर्श की भाषा के रूप में हिंदी की व्यापक समझ और प्रयोग में दक्ष बनाना सबसे पहला उद्देश्य होगा। किशोरावस्था से युवावस्था के इस नाज़ुक मोड़ पर किसी भी विषय का चुनाव करते समय बच्चे और उनके अभिभावक इस बात को लेकर सबसे अधिक चिंतित रहते हैं कि चयनित विषय उनके भविष्य और जीविका के अवसरों में मदद करेगा कि नहीं। इस उम्र के विद्यार्थियों में चिंतन और निर्णय करने की प्रवृत्ति भी प्रबल होती है। इसी आधार पर वे अपने मानसिक, सामाजिक, बौद्धिक और भाषिक विकास के प्रति भी सचेत होते हैं और अपने भावी अध्ययन की दिशा तय करते हैं। इस स्तर पर ऐच्छिक हिंदी का अध्ययन एक सृजनात्मक, साहित्यिक, सांस्कृतिक और विभिन्न प्रयुक्तियों की भाषा के रूप में होगा। इस बात पर भी बल दिया जाएगा कि निरंतर विकसित होती हिंदी के अखिल भारतीय स्वरूप से बच्चे का रिश्ता बन सके।

इस स्तर पर विद्यार्थियों में भाषा के लिखित प्रयोग के साथ-साथ उसके मौखिक प्रयोग की कुशलता और दक्षता का विकास भी ज़रूरी है। प्रयास यह भी होगा कि विद्यार्थी अपने बिखरे हुए विचारों और भावों की सहज और मौलिक अभिव्यक्ति की क्षमता हासिल कर सके।

राष्ट्रीय पाठ्यचर्या की रूपरेखा, नई शिक्षा नीति 2020 तथा केंद्रीय माध्यमिक शिक्षा बोर्ड द्वारा समय-समय पर दक्षता आधारित शिक्षा, कला समेकित अधिगम, अनुभवात्मक अधिगम को अपनाने की प्रेरणा दी 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।

योग्यता वह क्षमता, कौशल, ज्ञान और दृष्टिकोण है जो व्यक्ति को वास्तविक जीवन में कार्य करने में सहायता करता 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 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 छात्र 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 शिक्षार्थियोंोंं 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. विद्यार्थी 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 विद्यार्थी को जनसंचार तथा प्रकाशन जैसे विभिन्न-क्षेत्रों में अपनी क्षमता व्यक्त करने का अवसर प्रदान कर सकता है।
6. विद्यार्थी दो भिन्न पाठों की पाठ्यवस्तु पर चिंतन करके उनके मध्य की संबद्धता पर अपने विचार अभिव्यक्त करने में सक्षम हो सकेंगे।
7. विद्यार्थी रटे-रटाए वाक्यों के स्थान पर अभिव्यक्तिपरक/ स्थिति आधारित/ उच्च चिंतन क्षमता प्रश्नों पर सहजता से अपने विचार प्रकट कर सकेंगे।

उद्देश्य:

- सृजनात्मक साहित्य की सराहना, उसका आनंद उठाना और उसके प्रति सृजनात्मक और आलोचनात्मक दृष्टि का विकास करना।
- साहित्य की विविध विधाओं (कविता, कहानी, निबंध आदि), महत्त्वपूर्ण कवियों और रचनाकारों, प्रमुख धाराओं और शैलियों का परिचय करवाना।
- भाषा की सृजनात्मक बारीकियों और व्यावहारिक प्रयोगों का बोध तथा संदर्भ और समय के अनुसार प्रभावशाली ढंग से उसकी मौखिक और लिखित अभिव्यक्ति करना।
- विभिन्न ज्ञानानुशासनों के विमर्श की भाषा के रूप में हिंदी की विशिष्ट प्रकृति एवं क्षमता का बोध करवाना।
- साहित्य की प्रभावशाली क्षमता का उपयोग करते हुए सभी प्रकार की विविधताओं (धर्म, जाति, लिंग, वर्ग, भाषा आदि) एवं अंतरों के प्रति सकारात्मक और संवेदनशील व्यवहार का विकास करना।
- देश-विदेश में प्रचलित हिंदी के रूपों से परिचित करवाना।
- संचार-माध्यमों (प्रिंट और इलेक्ट्रॉनिक) में प्रयुक्त हिंदी की प्रकृति से अवगत करवाना और नवीन विधियों के प्रयोग की क्षमता का विकास करना।
- साहित्य की व्यापक धारा के बीच रखकर विशिष्ट रचनाओं का विश्लेषण और विवेचन करने की क्षमता हासिल करना।
- विपरीत परिस्थितियों में भी भाषा का प्रयोग शांति के साथ करना।
- अमूर्त विषयों पर प्रयुक्त भाषा का विकास और कल्पनाशीलता और मौलिक चिंतन के लिए प्रयोग करना।

शिक्षण-युक्तियाँ:

इन कक्षाओं में उचित वातावरण-निर्माण में अध्यापकों की भूमिका सदैव उत्प्रेरक एवं सहायक की होनी चाहिए। उनको भाषा और साहित्य की पढ़ाई में इस बात पर ध्यान देने की ज़रूरत होगी कि-

- कक्षा का वातावरण संवादात्मक हो ताकि अध्यापक, विद्यार्थी और पुस्तक-तीनों के बीच एक रिश्ता बन सके।

- बच्चों को स्वतंत्र रूप से बोलने, लिखने और पढ़ने दिया जाए और फिर उनसे होने वाली भूलों की पहचान करवाकर अध्यापक अपनी पढ़ाने की शैली में परिवर्तन करे।
- ऐसे शिक्षण-बिंदुओं की पहचान की जाए, जिससे कक्षा में विद्यार्थी की सक्रिय भागीदारी रहे और अध्यापक भी उनका साथी बना रहे।
- भिन्न क्षमता वाले विद्यार्थियों के लिए उपयुक्त शिक्षण-सामग्री का उपयोग किया जाए तथा किसी भी प्रकार से उन्हें अन्य विद्यार्थियों से कमतर या अलग न समझा जाए।
- कक्षा में अध्यापक को हर प्रकार की विविधताओं(लिंग, धर्म, जाति, वर्ग आदि) के प्रति सकारात्मक और संवेदनशील वातावरण निर्मित करना चाहिए।
- सृजनात्मकता के अभ्यास के लिए विद्यार्थी से साल में कम से कम दो रचनाएँ लिखवाई जाएँ।

श्रवण तथा वाचन परीक्षा हेतु दिशा निर्देश

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

वाचन(बोलना)(5अंक): 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।

श्रवण (सुनना) एवं वाचन(बोलना) 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।
- किसी निर्धारित विषय पर बोलना:जिससे विद्यार्थी 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 विषय के अनुकूल तीनों कालों का प्रयोग अपेक्षित है।
- निर्धारित विषय परीक्षार्थी के अनुभव-जगत के हों।
- शिक्षार्थी को विषय केंद्रित स्वतंत्र अभिव्यक्ति का अवसर प्रदान करें।

कौशलों के अंतरण का मूल्यांकन

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

	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 सुसंबद्ध 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 अधिक 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। वह उद्देश्य के अनुकूल सुनने की कुशलता प्रदर्शित करता है।	5	उद्देश्य और श्रोता के लिए उपयुक्त शैली को अपना सकता है, ऐसा करते समय वह केवल मामूली गलतियाँ करता है।

परियोजना कार्य - कुल अंक 10

विषय वस्तु - 5 अंक

भाषा एवं प्रस्तुति - 3 अंक

शोध एवं मौलिकता - 2 अंक

- हिंदी भाषा और साहित्य से जुड़े विविध विषयों/साहित्यकारों/समकालीन लेखों/ भाषा के तकनीकी पक्ष/प्रभाव/अनुप्रयोग/साहित्य के सामाजिक संदर्भों एवं जीवन-मूल्य संबंधी प्रभावों आदि पर परियोजना कार्य दिए जाने चाहिए ।
- सत्र के प्रारंभ में ही विधार्थी को विषय चुनने का अवसर मिले ताकि उसे शोध, तैयारी और लेखन के लिए पर्याप्त समय मिल सके ।
- श्रवण-वाचन कौशल एवं परियोजना कार्य का मूल्यांकन विद्यालय स्तर पर आंतरिक परीक्षक द्वारा ही किया जाएगा।

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

परियोजना का महत्व

- व्यक्तिगत स्तर पर खोज , कार्रवाई 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 सोच 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 विद्यार्थियों 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 विद्यार्थी 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 करने 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 स्त्रोत 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 स्त्रोत अंकित करने के साथ-साथ समाचार-पत्र, पत्रिकाओं के नाम एवं दिनांक भी लिखने चाहिए।
- साहित्यकोश, संदर्भ-ग्रंथ, शब्दकोश की मदद 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 - जयशंकर प्रसाद)**
- विभिन्न कवियों की कविताओं का तुलनात्मक अध्ययन,
- भाषा शैली, विशेषताएँ
- वर्तमान के साथ प्रासंगिकता इत्यादि।
- **भारतीय ग्रामीण का जीवन (पाठ - सूरदास की झोपड़ी)**
    - आज़ादी से पहले, बाद में तथा वर्तमान में स्थिति
    - सुधार की आवश्यकताएँ
    - आपकी भूमिका/ योगदान/ सुझाव
- **समकालीन विषय**
    - कोविड -19 और हम
    - 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।

परियोजना की शब्द सीमा 2000 शब्दों की होनी चाहिए।

हिंदी (ऐच्छिक)(कोड सं.002) कक्षा -11वीं(वर्ष 2022-23)

- **प्रश्न-पत्र दो खण्डों - खंड 'अ' और 'ब' का होगा|**
- **खंड 'अ' में 48 वस्तुपरक प्रश्न पूछे जाएँगे जिनमें से केवल 40 प्रश्नों के ही उत्तर देने होगें |**
- **खंड 'ब' में वर्णनात्मक प्रश्न पूछे जाएँगे| प्रश्नों में उचित आंतरिक विकल्प दिए जाएँगे |**

भारांक 80 **निर्धारित समय 3 घंटे**

खंड अ (वस्तुपरक प्रश्न) 40 अंक			
विषयवस्तु			**भार**
1	**अपठित गद्यांश**		**18**
	अ	एक अपठित गद्यांश (लगभग 300 शब्दों का) बिना किसी विकल्प के (1 अंक x 10 प्रश्न)	10
	ब	दो अपठित पद्यांशों में से कोई एक पद्यांश करना होगा| (लगभग 150 शब्दों के) (1 अंक x 8 प्रश्न)	08
2	**अभिव्यक्ति और माध्यम पुस्तक के आधार पर**		**05**
	इकाई एक - जनसंचार माध्यम और लेखन (पाठ 1 और 2) पर आधारित बहुविकल्पात्मक प्रश्न (1 अंक x 5 प्रश्न)		05
3	**पाठ्यपुस्तक अंतरा भाग - 1 से बहुविकल्पात्मक प्रश्न**		**12**
	अ	पठित काव्यांश पर छह बहुविकल्पात्मक प्रश्न (1 अंक x 06 प्रश्न)	06
	ब	पठित गद्यांश पर छह बहुविकल्पात्मक प्रश्न (1 अंक x 06 प्रश्न)	06
4	**पूरक पाठ्यपुस्तक अंतराल भाग-1 से बहुविकल्पात्मक प्रश्न**		**05**
	अ	पठित पाठों पर पाँच बहुविकल्पात्मक प्रश्न (1 अंक x 5 प्रश्न)	05

खंड - ब (वर्णनात्मक प्रश्न) 40 अंक			
विषयवस्तु			**भार**
5	**अभिव्यक्ति और माध्यम पुस्तक के आधार पर** इकाई - दो सृजनात्मक लेखन पाठ 9, 10 और इकाई - तीन व्यावहारिक लेखन पाठ 14, 15, 16		**17**
	1	दी गई स्थिति/ घटना के आधार पर दृश्य लेखन (विकल्प सहित) लगभग 120 शब्दों में (5 अंक x1 प्रश्न)	05
	2	औपचारिक - पत्र/ स्ववृत लेखन/ रोजगार संबंधी आवेदन पत्र (विकल्प सहित) लगभग 120 शब्दों में (5 अंक x1 प्रश्न)	05
	3	व्यावहारिक लेखन (प्रतिवेदन, प्रेस-विज्ञप्ति, परिपत्र, कार्यसूची, कार्यवृत से संबंधित (विकल्प सहित) (3 अंक x 1 प्रश्न)	03
	4	अभिव्यक्ति और माध्यम पुस्तक से पठित पाठों पर आधारित दो प्रश्नों के उत्तर (लगभग 40 शब्दों में) (2 अंक x 2 प्रश्न)	04
6	**पाठ्यपुस्तक अंतरा भाग - 1+ अंतराल भाग - 1**		**20+3=23**
	1	काव्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 40 शब्दों में) (2 अंक x 2 प्रश्न)	4
	2	एक काव्यांश की सप्रसंग व्याख्या (विकल्प सहित) (6 अंक x 1 प्रश्न)	6
	3	गद्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 40 शब्दों में) (2 अंक x 2 प्रश्न)	4
	4	एक गद्यांश की सप्रसंग व्याख्या (6 अंक x1 प्रश्न)	6
7		**अंतराल भाग - 1**	**3**

		पाठों की विषयवस्तु पर आधारित एक प्रश्न (विकल्प सहित) (3 अंक x 1 प्रश्न)	3
8	**(अ) श्रवण तथा वाचन**		**10**
	(ब) परियोजना कार्य		**10**
कुल अंक			**100**

प्रस्तावित पुस्तकें:

- **अंतरा, भाग-1,** एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित नवीनतम संस्करण
- **अंतराल, भाग-1,** एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित नवीनतम संस्करण
- '**अभिव्यक्ति और माध्यम**', एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित नवीनतम संस्करण

नोट : निम्नलिखित पाठों से प्रश्न नहीं पूछे जाएँगे ।

पाठ्यपुस्तक - अंतरा भाग-1

1. नए की जन्म कुंडली (एक) (पूरा पाठ)
2. पद्माकर (पूरा पाठ)
3. महादेवी वर्मा - सब आँखों के आँसू उजले (घटाया गया पाठ का अंश और उससे संबंधित प्रश्न अभ्यास
4. नरेंद्र शर्मा - नींद उचट जाती है (पूरा पाठ)

अनुपूरक पाठ्यपुस्तक - अंतराल

1.अंडे के छिलके (एकांकी) पूरा पाठ

HISTORY
CLASS XI-XII (2022-23)
(Code No. 027)

Rationale

Through a focus on a series of critical historical issues and debates (class XI) or on a range of important historical sources (class XII), the students would be introduced to a set of important historical events and processes. A discussion of these themes, it is hoped, would allow students not only to know about these events and processes, but also to discover the excitement of reading history. However, practical way of assessing whether the learning objectives have been actualized or not, can be ensured 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 organically linked and complementary to each other.

Objectives:

- Effort in these senior secondary classes would be to emphasize to students 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 store/relate/compare developments in different situations, analyze connections between similar processes located in different time periods, and discover the relationship between different methods of enquiry within history and the allied disciplines.
- The syllabus in class XI is organized around some major themes in the world history. The themes have been selected so as to (i) focus on some important developments in different spheres-political, social, cultural and economic, (ii) study not only the grand narratives of development-urbanization, industrialization and modernization-but also to know about the processes of displacements and marginalization. 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
    - an introduction to a critical debate associated with the issue.
- 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 analyze 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 organized around four sub heads:
    - a detailed overview of the events, issues and processes under discussion
    - a summary of the present state of research on the theme
    - an account of how knowledge about the theme has been acquired
    - an excerpt from a primary source related to the theme, explaining how it has been used 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 text books 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 time-lines
- discussing the particular event or process in relation to developments in other places and other times.

COURSE STRUCTURE
CLASS XI (2022-23)

One-Theory Paper **80Marks**
3 Hours

S.NO	THEMES	No. of Periods	Marks
1.	Introduction to World History	**10**	
Section A: Early Societies			
2.	Introduction	5	
3.	Writing and City Life	20	10
Section B: Empires			
4.	Introduction	5	
5.	An empire across three continents	20	10
6.	Nomadic Empires	20	10
	Section C: Changing Traditions Introduction	5	
7.	The Three Orders	20	10
8.	Changing Cultural Traditions	20	10
Section D: Paths to Modernization			
9.	Introduction	5	
10.	Displacing Indigenous People	20	10
11.	Paths To Modernization	20	15
12.	MAP WORK OF THE RELATED THEMES	15	5
	Total		**80**
	Project work	**25**	**20**
	Total	**210**	**100 Marks**

CLASS-XI: THEMES IN WORLD HISTORY		
THEMES	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**
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	● Familiarize the learner with the nature of early urban Centre's. ● Discuss whether writing is significant as a marker of civilization.	At the completion of this unit students will be able to: ● Compare and analyze the transformation from Neolithic to Bronze Age Civilization in order to understand the myriad spheres of human development. ● Elucidate the interwoven social and cultural aspects of civilization in order to understand the connection between city life and culture of contemporary civilizations. ● Analyze the outcomes of a sustained tradition of writing.
An Empire across Three Continents Focus: Roman Empire, 27 BCE to 600 CE a) Political evolution b) Economic Expansion c) Religion-culture foundation d) Late Antiquity e) Historians' view on the Institution of Slavery	● Familiarize the learner with the history of a major world empire ● Discuss whether slavery was a significant element in the economy.	At the completion of this unit students will be able to: ● Explain and relate the dynamics of the Roman Empire in order to understand their polity, economy, society and culture. ● Analyze the implications of Roman's contacts with the subcontinent Empires ● Examine the domains of cultural transformation in that period
NOMADIC EMPIRES Focus: The Mongol, 13th to 14th century a) The nature of nomadism b) Formation of empires c) Conquests and relations with other states d) Historians' views on nomadic societies and state formation	• Familiarize the learner with the varieties of nomadic society and their institutions. • Discuss whether state formation is possible in nomadic societies.	At the completion of this unit students will be able to: • 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. • Analyze 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.
The Three Orders. **Focus**: Western Europe 13th-16th century a) Feudal society and economy b) Formation of state c) Church and society d) Historians' views on decline of feudalism	● Familiarize the learner with the nature of the economy and society of this period and the changes within them. ● Show how the debate on the decline of feudalism helps in understanding processes of transition.	At the completion of this unit students will be able to: ● Explain the myriad aspects of feudalism with special 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.
Changing Cultural Traditions Focus: Europe 14th-17th century a) New ideas and new trends in literature and arts b) Relationship with earlier ideas c) The contribution of West Asia d) Historians' viewpoint on the validity of the notion 'European Renaissance	● Explore the intellectual trends in the period. ● Familiarize students with the paintings and buildings of the period. ● Introduce the debate around the idea of 'Renaissance'.	At the completion of this unit students will be able to ● Analyze 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. ● Recognize major influences on the architectural, artistic, and literary developments in order to understand the facades of Renaissance. ● Critical analysis of the Roman Catholic Church by Martin Luther and Erasmus and their impact on later reforms. ● Evaluate the Roman Catholic Church's response to the Protestant Reformation in the forms of the Counter and Catholic Reformations

Displacing Indigenous People **Focus**: North America and Australia, 18th to 20th century a) European colonists in North America and Australia b) Formation of White Settler societies c) Displacement and repression of local people d) Historians' viewpoint on the impact of European settlement on indigenous population	● Sensitize students to the processes of displacements that accompanied the development of America and Australia. ● Understand the implications of such processes for the displaced populations.	At the completion of this unit students will be able to ● Recount some aspects of the history of the native people of America to understand their condition. ● To analyze the realms of settlement of Europeans in Australia and America. ● Compare and contrast the lives and roles of indigenous people in these continents
Paths to Modernization Focus: East Asia, late 19th to 20th century a) Militarization and economic growth in Japan b) China and the communist alternative c) Historians' Debate on the meaning of 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)**	● Make students aware that transformation in the modern world takes many different forms. ● Show how notions like 'modernization' need to be critically assessed.	At the completion of this unit students will be able to ● Deduce the histories of China and Japan from the phase of imperialism to modernization ● Explore the Japanese political, cultural and economic system prior to and after the Meiji Restoration. ● Analyze the domains of Japanese nationalism prior and after the Second World War. ● Summarize the nationalist upsurge in China from Dr Sun Yet Sen to Mao Ze Dong to understand the era of communism. ● To analyze the Chinese path to modernization under Deng Xio Ping and Zhou en Lai in order to understand the transformation from rigid communism to liberal socialism.
Map Work on The Related Themes		

HOME SCIENCE (Code No. 064)

(CLASS – XI AND XII)
(2022-2023)

Preface

The course in Home Science encompasses five areas namely, Foods and Nutrition, Human Development and Family Studies, Fabric and Apparel, Resource Management and Communication and Extension. All these domains have their specific content in focus that contributes to the study of the individual and the family in Indian social cultural context.

The purpose of Home Science is the creation of an environment and outlook to enable learner to live a richer and more purposeful life, become future ready and develop 21st century life skills for work, livelihood and careers. All the domains within the home science discipline provide ample scope for professional avenues of higher education and career opportunities. They range from professions catering to various health and service institutions/agencies, educational organizations, industry and business houses of textiles, garments, food industry, teaching learning materials, ergonomically appropriate equipment and work situations. The subject integrates the application of various sciences and humanities to improve Human Environment, Family Nutrition, Management of Resources and Child Development.

In class XI, the “Self and family” and the “Home” are focal points for understanding the dynamics for individual lives and social interactions.

In class XII, the emphasis is on “Work and careers” through the life span.

Learning Objectives:

The Home Science curriculum at senior secondary level has been framed to enable the learners to:

1. develop an understanding of the self and one’s role and responsibilities as a productive individual and as a member of family, community and society.
2. integrate learning across diverse domains and undertake a critical analysis of issues and concerns specific to family, community and society.
3. appreciate the discipline of Home Science for professional careers.
4. acquaint learners with the basic knowledge specific to five domains

namely, Foods and nutrition, Human Development and Family studies, Fabric and Apparel, Resource Management and Communication and Extension.

5. develop functional skills in the five domains for career and employment.
6. equip learners for enrichment and higher studies.

Learning outcomes:

After undertaking the course students will be able to:

1. function as a productive and responsible individual in relation to self, family, community and society.
2. apply the basics of human development with specific reference to self, family and community.
3. utilize the skills of judicious management of various resources.
4. be sensitized to fabric and apparel, their selection and care.
5. inculcate healthy food habits and lifestyle to enable prevention and management of diseases.
6. become alert and aware consumer.
7. appreciate the potential of entrepreneurship and other varied professional opportunities to make informed career choices.

HOME SCIENCE (2022-2023)

CLASS XI

Introduction:

In class XI, the “Self and family” and the “Home” are focal points for understanding the dynamics for individual lives and social interactions. The curriculum is divided in five units. Unit I introduces the concept of home science. Unit II begins with the stage of adolescence and related concerns. Unit III deals with the expanding interactions of the adolescent with others in family, school, community and society, and the needs emerging from each of these contexts. Unit IV and V focus on childhood and adulthood respectively.

Course Structure: Theory & Practical

Time: 3 Hrs.

Theory: 70 Marks
Practical: 30 Marks

No.	Units	Marks	No.of Pd.
1.	Introduction to Home Science	02	04
2.	Understanding oneself: Adolescence	20	35
3.	Understanding Family, Community and Society	15	35
4.	Childhood	15	24
5.	Adulthood	18	28
	Total	**70**	**126**
	Practical	**30**	**28**
	Grand Total	**100**	**154**

Class XI

Theory: 70Marks

Unit I Introduction to Home Science

Unit II: Understanding oneself: Adolescence

Ch.- Understanding the Self.

A. 'Who am I'?

B. Development and Characteristics of the Self(Development characteristics and needs of adolescents)

C. Influences on Identity

Ch.- Food, Nutrition, Health and Fitness

Ch. - Management of Resources
Ch.- Fabric Around us
Ch-Media and Communication Technology

Unit III: Understating family, community and society

Ch. - Concerns and needs in diverse contexts:

a. Nutrition, Health and Hygiene

b. Resources Availability and Management

Unit IV: Childhood

Ch.-Survival, Growth and Development
Ch.- Nutrition, Health and Wellbeing
Ch.- Our Apparel

UnitV: Adulthood
Ch.- Health and Wellness
Ch.- Financial Management and planning
Ch.- Care and Maintenance of fabrics

HOME SCIENCE (2022-23)

CLASS XI

UNIT I: INTRODUCTION TO HOME SCIENCE

- What is Home Science
- Areas of Home Science
- Home Science is important for both boys and girls
- Career options of Home Science

UNIT II: UNDERSTANDING ONESELF: ADOLESCENCE

Unit II focus on the stage of adolescence – the stage of life to which you belong at present. This unit deals with understanding your own self in terms of your personal and social identity, your nutritional and health requirements, management of basic resources of time and space, fabrics around you, and your communication skills. The last chapter of the unit situates the adolescent in the context of the family and larger society, thereby linking it to the next unit that deals with the individual in relation to her/his family, school, community and society.

CHAPTER : UNDERSTANDING THE SELF

- What is Self?
  - Personal dimension
  - Social dimension
  - Self- concept
  - Self esteem

- What is Identity?
  - Personal identity
  - Social identity

- Self during Infancy: characteristics
- Self during early childhood: characteristics
- Self during middle childhood: characteristics
- Self during adolescence: characteristics
  - Identity development
  - Identity crisis

- Real vs Ideal self

- Influences on identity
    - Developing a sense of self and identity
    - Influences on formation of identity
        - Biological and physical changes
        - Socio-cultural context
        - Emotional changes
        - Cognitive changes

CHAPTER : FOOD, NUTRITION, HEALTH AND FITNESS

- Introduction
- Definition of
    - Food
    - Nutrition
    - Nutrients
- Balanced diet
    - Definition
    - RDA
- Health and Fitness
- Using Basic food Groups for planning Balanced Diets
    - Food guide pyramid.
- Vegetarian food Guide
- Dietary patterns in Adolescence
        - Irregular meals and skipping meals
        - Snacking
        - Fast foods
        - Dieting
- Modifying diet related behaviour
        - Diet journal
        - Exercise
        - Substance use and abuse
        - Healthy eating habits
        - Snacks
        - Drinking water
- Factors influencing eating behaviour

- Eating disorders at adolescence

- Key terms and their meaning

CHAPTER : MANAGEMENT OF RESOURCES

- Introduction
- Classification of resources
    - Human /non-human resources
    - Individual / shared resources
    - Natural / community resources
- Human and non-human resources
    - Human resources
        - Knowledge
        - Motivation/ interest
        - Skills/ strength/ aptitude
        - Time
        - Energy
    - Non-human resources
        - Money
        - Material resources
- Individual and shared resources
    - Individual resources
    - shared resources
- Natural and community resources
    - Natural resources
    - community resources
- Characteristics of resources
    - Utility
    - Accessibility
    - Interchangeability
    - Manageable
- Managing Resources
    - Management process
    - Planning
        - Steps in planning
    - Organising
    - Implementing
    - Controlling
    - Evaluation

CHAPTER : FABRIC AROUND US

- Definition of yarns, fibres, textile products, finishing.
- Introduction to fibre properties
- Classification of textile fibres
  - Filament/staple fibres
  - Natural/Manufactured (manmade) fibres
- Types of Natural Fibres
  - Cellulosic fibres
  - Protein fibres
  - Mineral fibres
  - Natural rubber
- Types of Manufactured Fibres
  - Regenerated cellulosic fibres
  - Modified cellulosic fibres
  - Protein fibres
  - Non-cellulosic fibres
  - Mineral fibres
- Some Important fibres and their properties
  - Cotton
  - Linen
  - Wool
  - Silk
  - Rayon
  - Nylon
  - Polyester
  - Acrylic
  - Elastomeric fibres
- Yarns
- Yarn processing
  - Cleaning
  - Making into a sliver
  - Attenuating, drawing out and twisting
- Yarn terminology
  - Yarn number
  - Yarn twist
  - Yarn and thread
- Fabric production
  - Weaving

- Knitting
- Braiding
- Nets
- Laces

- Textile Finishing
  - Finishing with colour
  - Printing

CHAPTER-MEDIA COMMUNICATION TECHNOLOGY

- Communication and Communication Technology
  - What is Communication
  - Classification of communication
  - How does communication takes place
- What is media
  - Media classification and functions
- What is communication technology
  - Classification of communication technologies
  - Modern communication technologies

UNITIII: UNDERSTANDING FAMILY, COMMUNITY AND SOCIETY

The chapters in Unit II were all addressed to you for the understanding of self and of the factors that influence your decision making. Let us now move on to understanding the family, the community and the society that you are a part of. In the first section- the focus will be on relationships and interactions with significant others, i.e. those important to you in these contexts. The second section- will discuss concerns and needs, such as those of health, work, resources, education and textile tradition in the adolescent's diverse social contexts.

CHAPTER : CONCERNS AND NEEDS IN DIVERSE CONTEXTS

A. NUTRITION, HEALTH AND HYGIENE

- Health and its Dimensions
    - Social health
    - Mental health
    - Physical health
- Health care Indicators of Health
- Nutrition and Health
- Importance of nutrients
- Factors affecting nutritional well being
    - Food and nutrient security
    - Care for the vulnerable
    - Good health for all
    - Safe environment
- Nutritional Problems and their consequences
    - Malnutrition
    - Under nutrition
    - Over nutrition
- Hygiene and Sanitation
    - Personal Hygiene
    - Environmental Hygiene
    - Food Hygiene
    - Water safety-Qualities of potable water, methods of water purification(Boiling, chlorine, storage and electric filter ,RO)

B. RESOURCES AVAILABILITY AND MANAGEMENT

- Time Management

- Definition of time plan
- How good is your time management (Activity)?
- Steps in making time plan
- Tips for effective time management
- Tools in time management---Peak load period, Work curve, Rest /break periods, Work simplification

➢ Space Management

- Space and the home
- Principles of space planning

UNIT IV: CHILDHOOD

The theme of this unit is 'Childhood'. You may wonder why did the book address the adolescent years first and childhood later. Well, it is because if you as an adolescent understand issues about yourself first, it would be easier to grasp the issues that are concerned with the stage of childhood, and later with adulthood. In this unit you will be studying about children's growth and development, critical concerns about their health and nutrition, education and clothing. As we would like children with disabilities to be an inclusive part of our society, the chapters provide us important information on their needs and ways to meet them.

CHAPTER : SURVIVAL GROWTH AND DEVELOPMENT

- The meaning of survival
- Growth and development
- Areas of development
    - Physical development
    - Motor development
    - Cognitive development
    - Sensory development
    - Language development
    - Social development
    - Emotional development
- Good Nutrition
- Stages in development
    - Neonate
        - Reflexes
        - Sensory capabilities
- Development across stages from infancy to adolescence
    - Physical and motor development
    - Language development
    - Socio –emotional development
    - Cognitive development
        - Mental processes involved in thinking
        - Stages of cognitive development
            - Sensory motor stage
            - Pre-operational stage
            - Concrete operational stage

- ❖ Formal operational stage

CHAPTER : NUTRITION, HEALTH AND WELL-BEING

- Introduction
- Nutrition, Health and Well-being during infancy (birth – 12 months)
    - Dietary requirements of infants
    - Breast feeding
        - Benefits of breast feeding
    - Feeding the low birth weight infants
    - Complementary foods
    - Guidelines for complementary feeding
    - Immunization
    - Common health and nutrition problems in infants and young children
- Nutrition, Health and well-being of preschool children (1-6 years)
    - Nutritional needs of preschool children
    - Guidelines for healthy eating for pre-schoolers
    - Planning balanced meals for preschool children
    - Some examples of low-cost snacks
    - Feeding children with specific needs
    - Immunization
- Nutrition, Health and well-being of school-age children (7-12 years)
    - Nutritional requirements of school children
    - Planning diets for school-age children
    - Factors that influence diet intake of preschool-age and school-age children
    - Healthy habits
    - Health and nutrition issues of school age children

CHAPTER: OUR APPAREL

- Clothing functions and the selection of clothes
    - Modesty
    - Protection
    - Status and prestige
    - Adornment
- Factors affecting selection of clothing in India
    - Age
    - Climate and season
    - Occasion
    - Fashion
    - Income
- Understanding children's basic clothing needs
    - Comfort
    - Safety
    - Self help
    - Appearance
    - Allowance for growth
    - Easy care
    - Fabrics
- Clothing requirements at different childhood stages
    - Infancy (birth to six months)
    - Creeping age (6 months to one year)
    - Toddlerhood (1-2 years)
    - Preschool age (2-6 years)
    - Elementary school years (5-11 years)
    - Adolescents (11-19 years)
    - Clothes for children with special needs

UNIT V: ADULTHOOD

With the advent of adulthood, the adolescent passes through the portal of what may be termed as the "real world". One enters the world of higher education, work and marriage, and gets involved in establishing one's own family. Hence responsibilities of the individual increases manifold. In this unit you will learn about the major factors that play a role in determining the quality of adult life, these being health and wellness, financial planning and management, maintenance of fabrics and apparel that one uses personally as well as in the home, and appreciation of different perspectives in communication. The unit concludes with the chapter on individual responsibilities and rights, not only for one's own self, but also in relation to the family and larger society.

CHAPTER : HEALTH AND WELLNESS

- Importance of health and fitness
- Healthy & Unhealthy diet
- BMI
- Do's and Don'ts for health promoting diets
- Fitness
- Importance of exercise and physical activities in adulthood
- Wellness
- Qualities of a person who is rated high on wellness
- Dimensions of wellness
  - Social aspect
  - Physical aspect
  - Intellectual aspect
  - Occupational aspect
  - Emotional aspect
  - Spiritual aspect
  - Environmental aspect
  - Financial aspect
- Stress and coping with stress
- Simple techniques to cope with stress
  - Relaxation
  - Talking with friends/family
  - Reading
  - Spirituality
  - Music
  - Hobby

- Yoga

CHAPTER : FINANCIAL MANAGEMENT AND PLANNING

- Financial management
- Financial planning
- Management
- Money and its importance
- Family Income
    - Money income
    - Real income: Direct and Indirect income
    - Psychic income
- Income management
- Budget
- Steps in making budget
- Advantages of planning family budgets
- Control in money management
    - Checking to see how well the plan is progressing
        - Mental and mechanical check
        - Records and accounts
    - Adjusting wherever necessary
    - Evaluation
- Savings
- Investment
- Principles underlying sound investments
    - Safety to the principle amount
    - Reasonable rate of interest
    - Liquidity
    - Recognition of effect of world conditions
    - Easy accessibility and convenience
    - Investing in needed commodities
    - Tax efficiency
    - After investment service
    - Time period
    - Capacity
- Savings and investment avenues
    - Post office
    - Banks

- Unit Trust of India
- NSC
- Mutual funds
- Provident funds
- Chit fund
- Life insurance and medical insurance
- Pension scheme
- Gold, house, land
- Others (new schemes)

- Credit
- Need of credit
- 4C's of credit: character, capacity, capital means, collateral,

CHAPTER : CARE AND MAINTENANCE OF FABRICS

- Mending
- Laundering
  - Stain removal
    - Vegetable stains
    - Animal stains
    - Oil stains
    - Mineral stains
    - Dye bleeding
  - Techniques of stain removal
    - Scraping
    - Dipping
    - Sponging
    - Drop method
  - Reagent for stain removal
  - Common stains and method of removing
- Removal of dirt: the cleaning process
  - Soaps and detergents
  - Methods of washing: friction, kneading & squeezing, suction, washing by machine

- Finishing
  - Blues and optical brighteners
  - Starches and stiffening agents
- Ironing
- Dry cleaning

- Storage of textile products
- Factors affecting fabric care
    - Yarn structure
    - Fabric construction
    - Colour and finishes
- Care label

NOTE:

- **Wherever required latest data/figures to be used.**
- **Latest RDA's to be used.**

PRACTICALS FOR CLASS XI

1. Understanding oneself with reference to:
   a) Physical development in terms of age, height, weight, hip and chest circumference.
   b) Sexual maturity (Age at menarche ,Development of breasts : girls).
   Growth of beard, change in voice:boys)
2. Observe developmental norms: (Physical, Motor, Language and social - emotional) birth to three years.
3. List and discuss 4-5 areas of agreement and disagreement with
   a) Mother
   b) Father
   c) Siblings/ Friends
   d) Teacher
4. a) Record own diet for a day
   b) Evaluate qualitatively for adequacy
5. Preparation of different healthy snacks for an adolescent suitable in her/his context.
6. a) Record one day's activities relating to time use and work
   b) Prepare a time plan for yourself
7. Plan a budget for a given situation/purpose.
8. a) Record the fabrics and apparel used in a day
   b) Categorize them according to functionality
9. Relationship of fibre properties to their usage:
   a) Thermal property and flammability
   b) Moisture absorbency and comfort
10. (a) Analyze label of any one garment with respect to: Clarity, fiber content, size and care instructions.
    (b) Prepare one care label of any garment.
    (c) Analyze two different fabric samples for color fastness.

Scheme for practical examination — 30 Marks

1. Observe developmental norms: (Physical, Motor, Language and social emotional) birth to three years.

   5 marks

   OR

   List and discuss 4-5 areas of agreement and disagreement with

   a) Mother
   b) Father
   c) Siblings/ Friends
   d) Teacher

2. Preparation of healthy snacks for an adolescent. 7marks

3. Plan a budget for a given situation/purpose. 3 marks

4. Prepare a time plan for yourself. 3 marks

5. Relationship of fibre properties to their usage: 5 marks

   a) Thermal property and flammability
   b) Moisture absorbency and comfort

   OR

   Prepare one care label of any garment.

6. File 5 marks

7. Viva 2 marks

Prescribed textbook: Human Ecology and Family Sciences(For class XI): Part I and Part II

LEGAL STUDIES (2022- 23)

Class XI-XII (Code No. 074)

The Latin maxim *ignorantia juris neminem excusat*, in plain, which reads as 'ignorance of law is not an excuse'. This is one of the age old principles followed under the Roman Law and even in our own Common Law. If every person of discretion is to know what law is, an effort to teach law outside the remit of a professional law school may have significant social benefits.

Law is a subject which has been traditionally taught in Universities for almost eight centuries. Learning law outside the settings of a professional law school has a number of perceived benefits. Some familiarity with law enhances one's understanding of public affairs and an awareness of one's entitlements and duties as a citizen. It may also be helpful in eliminating some of the mistaken notions about law and some of the inveterate prejudices about law, lawyers and the legal system as such. Another advantage is that an understanding of law can undoubtedly encourage talented students to pursue a career in law – an objective which is laudable in its own right.

The pitfalls of learning law outside the settings of a professional school are rooted in two key assumptions:

1) law is too vast and complicated to be taught in a non-professional setting;
2) the lack of professional trainers and experienced teachers could lead to incorrect appreciation and understanding of law. If an understanding of law is mis-formed or ill-formed as some academicians think, it may require greater efforts to unlearn whatever was learnt earlier. Both these criticisms have attracted detailed scrutiny, but at least a few countries have introduced law at the High School level.

The experience of countries that have introduced law has been by and large optimistic. The Central Board of Secondary Education is introducing Legal Studies at the Class XI level. The proposal is to introduce one module in Class XI and a second module in Class XII.

Objectives

- To provide a background of the evolution of the Indian legal system in a short and concise form.
- To focus on the applicability of *justice, equity and good conscience* and more importantly the development of Common Law system in India.
- To provide exposure on various systems of law such as Common Law, Civil Law etc.

- To develop an understanding of the essential features of the Indian Constitution, including the role and importance of Fundamental Rights, Separation of Powers, Structure and operation of Courts, concept of precedent in judicial functioning, the of legislation, basic principles of statutory interpretation, etc.
- To deal with principles of practical utility such as the concept of Rule of Law, principles of justice, differences between criminal and civil cases, the concept of crime and the fundamental theories of punishment, rights available to the accused at various stages of the criminal investigative process, or the key components of Human Rights, etc.
- To understand the fundamental concept and subject matter of property, contract and tort.
- To understand the rudimentary aspects of contract law such as formation of contract, terms and conditions, discharge, etc.
- To enables students to form an understanding of rights and duties and various categories of liability principles which form the bedrock for an understanding of Law.

Competencies expected after this course

Students will be able to:

i. acquire knowledge of legal theory, laws, legal procedure, drafting, interpretation and application of laws;
ii. identify legal issues from facts, differentiate between ratio decidendi and obiter dicta;
iii. ask relevant and probing questions to understand the differences among facts, opinions, analyse judgments and recognize and meaningfully respond to legal fallacies;
iv. apply the law, and draw conclusions by applying analytical reasoning;
v. apply knowledge and understanding of law, legal theory and procedure to solve legal problems;
vi. evaluate, seek feedback and modify solutions to legal problems;
vii. carry out legal research;
viii. acquire values such as justice, fairness, openness, honesty, integrity, respect for diversity, and respect for the rule of law; and
ix. prepare themselves for pursuing higher education in the field of Law

Class XI (2022–23)

(BASED ON REVISED BOOK WITH NEW CHAPTERS)

S.no.	Units	Periods	Marks
1	**Introduction to Political Institutions**	40	15
2	**Basic Features of The Constitution of India**	40	15
3	**Jurisprudence, Nature and Sources of Laws**	40	15
4	**Judiciary : Constitutional, Civil And Criminal Courts And Processes**	40	20
5	**Family Justice System**	40	15
6	**Project**	**20**	**20**
	Total	**220**	**100**

Contents:

S no.	**Unit**	**Topics**
Unit I	**Introduction to Political Institutions**	
1.	**Concept of State**	I. What is a State? II. The concept of State and Article 12 of the Indian Constitution III. What is a Government? IV. Emergence of the State from Society V. Definition of State
2.	**Forms and Organs of Government**	I .Introduction to the Organs of Government II. Forms of Government A. Monarchy B. Aristocracy C. Dictatorship D. Democracy III. Main organs of Government and its functions A. General Functions of Legislature as Organ of Government B. General Functions of Executive as Organ of Government C. General Functions of Judiciary as an Organ of the Government

3.	**Separation of Powers**	I. Concept of Separation of Powers II. Historical Background and Evolution of Montesquieu's Doctrine of Separation of Powers A. Montesquieu's Doctrine of Separation of Powers B. Basic Features of the Doctrine Separation of Powers as Enunciated by Montesquieu C. Checks and Balances of Power D. Impact of the Doctrine III. Evaluation of The Doctrine of Separation of Powers A. Key Benefits and Advantages of The Doctrine of Separation of Powers B. Defects of the Doctrine IV. Separation of Powers In Practice A. Separation of Powers in Britain B. Separation of Powers in the United States of America C. Separation of Powers in India
Unit 2	**Basic Features of The Constitution of India**	
1.	**Salient Features of The Constitution of India**	i. Meaning of the term Constitution ii. Definition of the term Constitution iii. Historical Perspective of Indian Constitution iv. Salient Features of The Constitution of India A. A Modern Constitution B. Lengthiest written Constitution C. Preamble to the Constitution D. Fundamental Rights; Directive Principles of State Policy; Fundamental Duties E. Constitutional Provision for Amendment of the Indian Constitution F. Adult Suffrage G. Single Citizenship H. Independent Judiciary I. Emergency Provisions J. Federal in form Unitary in character K. Division of Power- Centre- State Relations L. Schedules to the Constitution
Unit 3	**Jurisprudence, Nature and Sources of Laws**	
2.	**Classification of Laws**	I. Classification of Law based on Subject matter II. Classification of Law based on Scope of Law III. Classification of Law based on Jurisdiction
3.	**Sources of Law**	i. I.Where does law come from? ii. II. Custom as a source of Law iii. Importance of Custom as a source of Law in India iv. Judicial Precedent as a Source of Law v. V. Legislation as a Source of Law

4.	**Law Reform**	i. Need for Law Reform ii. Law Reforms in India iii. III. Recent Law Reforms in Independent India
5.	**Cyber Laws, Safety and Security in India**	i. Introduction ii. Why do we need Cyber Laws iii. What is Cyber Law? iv. What is Cyber safety and Security? v. What is cyber Crime? vi. Categories of Cyber Crime vii. Cyber law in India viii. Scope and Extent of The Information and Technology Act, 2000(IT Act) ix. IX. What was Section 66A of IT Act, 2000?
Unit 4	**JUDICIARY : CONSTITUTIONAL, CIVIL AND CRIMINAL COURTS AND PROCESSES**	
	Judiciary: Constitutional, Civil and Criminal Courts and Processes	i. Introduction: Establishment of the Supreme Court and High Courts ii. CONSTITUTION, ROLES AND IMPARTIALITY a. Independence and Impartiality of the Supreme Court b. Structure and Hierarchy of the Courts in India c. The civil process and functioning of Civil courts III. THE CIVIL COURT STRUCTURE a. Common legal terminology b. Types of jurisdiction c. Res subjudice and Res judicata in code of civil procedure 1908 IV. STRUCTURE AND FUNCTIONING OF CRIMINAL COURTS IN INDIA a) Types of offences b) Criminal investigation and First Information Report c) The criminal process- Investigation and prosecution d) Doctrine of autrefois acquit and autrefois convict V. Other courts in India a) Family Courts b) Administrative Tribunals
Unit 5	**Family Justice System**	

1.	**Institutional Framework; Marriage and Divorce**	I. Nature of Family law in India II. Human rights and gender perspective III. Institutional framework- family Courts IV. Role of women in the creation of family courts V. Role of lawyers and counselors in Family courts VI. Role of counselors and gender issues VII. Marriage and Divorce
5.	**Prevention of Violence against Women**	I. What is Domestic abuse / violence? II. International legal framework III. Laws in India on prevention of violence against women
	PROJECT WORK- One Project	

PROJECT GUIDELINES CLASS 11

Students can opt for any ONE Project from the three topics given.

Topic 1: Students can prepare a research paper on any legal problem from the textbook/around them that needs immediate redressal.

Some suggested topics-

- Uniform civil code
- Law reforms in India
- Juvenile justice
- Death penalty
- Any other course related topic

OR

Topic 2- Conduct research and draft a report on any recent legislation/ amendment that brought about a social change, for example: Consumer Protection Act, Information Technology Act, Right to Information Act etc.

Examine the conditions that give rise to the need for law reform; − The agencies of reform; − Mechanisms of reform; − Assess the effectiveness of law reform in achieving just outcomes with regards to the issue

OBJECTIVES for Topic 1 & 2 -

- The project work aims to enable students to:
- identify a legal problem and provide its remedy
- select relevant legal sources and conduct research
- analyse and distinguish between types of cases
- apply case laws and relevant statutory laws

METHODOLOGY for Topic 1 & 2-

The project file should be at least 15 pages.

Steps:-

- Choose a topic
- Gather information from various sources
- Write a statement of purpose of the project
- Support it with research evidence
- Presentation of project should include headings
- List the sources

Or

Topic 3 - 'Understanding the important elements of JUDICIAL DECISION '

OBJECTIVES-

- The project work aims to enable students to:
- identify a legal problem and provide its remedy
- select relevant legal sources and conduct research
- analyse and distinguish between types of cases
- apply case laws and relevant statutory laws
- understand parts of a judicial decision

METHODOLOGY-

1) The student is required to select any 5 decided cases where in One case is of criminal nature, one is civil nature, one is constitutional, one is international context and one is of student's choice (PIL if possible)
2) The research on the cases must include the following points:
   a. Name of the case
   b. Parties to the case
   c. Nature of the case (Civil, criminal or Constitutional)
   d. Facts of the case and issues involved
   e. Decision of the case
   f. Citation of the case

MATHEMATICS (XI-XII)

(Code No. 041)

Session – 2022-23

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 (2022-23)

One Paper Total Period–240 [35 Minutes each]

Three Hours **Max Marks: 80**

No.	Units	No. of Periods	Marks
I.	Sets and Functions	60	23
II.	Algebra	50	25
III.	Coordinate Geometry	50	12
IV.	Calculus	40	08
V.	Statistics and Probability	40	12
	Total	240	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** **(20) Periods**

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** **(20) Periods**

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 (upto 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** **(20) Periods**

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 sin2x + cos2x = 1, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing *sin (x±y)* and *cos (x±y)* in terms of sin*x*, sin*y*, cos*x* & cos*y* and their simple applications. Deducing identities like the following:

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

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

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

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

Identities related to sin2*x*, cos2*x*, tan2 *x*, sin3*x*, cos3*x* and tan3*x*.

Unit-II: Algebra

1. **Complex Numbers and Quadratic Equations** **(10) Periods**

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** **(10) Periods**

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

3. **Permutations and Combinations** **(10) Periods**

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

4. **Binomial Theorem** **(10) Periods**

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

5. **Sequence and Series** **(10) Periods**

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 (15) Periods

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 (25) Periods

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 (10) Periods

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

Unit-IV: Calculus

1. Limits and Derivatives (40) Periods

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. Derivatives of polynomial and trigonometric functions.

Unit-V Statistics and Probability

1. Statistics (20) Periods

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

2. Probability (20) Periods

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 (2022-23)

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:

PHYSICAL EDUCATION (048)
Class XI (2022–23)

Theory **Max. Marks 70**

Unit I Changing Trends & Career in Physical Education

- Concept, Aims & Objectives of Physical Education
- Changing Trends in Sports- playing surface, wearable gears and sports equipment, technological advancements
- Career Options in Physical Education
- Khelo-India and Fit-India Program

Unit II Olympism

- Ancient and Modern Olympics
- Olympism – Concept and Olympics Values (Excellence, Friendship & Respect)
- Olympics - Symbols, Motto, Flag, Oath, and Anthem
- Olympic Movement Structure - IOC, NOC, IFS, Other members

Unit III Yoga

- Meaning & Importance of Yoga
- Introduction to Ashtanga Yoga
- Introduction to Yogic Kriyas (Shat Karma)

Unit IV Physical Education & Sports for CWSN (Children with Special Needs - Divyang)

- Concept of Disability and Disorder
- Types of Disability, its causes & nature (Intellectual disability, Physical disability)
- Aim & Objective of Adaptive Physical Education
- Role of various professionals for children with special needs (Counsellor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist & Special Educator)

Unit V Physical Fitness, Health and Wellness

- Meaning and Importance of Wellness, Health and Physical Fitness
- Components/Dimensions of Wellness, Health and Physical Fitness
- Traditional Sports & Regional Games for promoting wellness

Unit VI Test, Measurement & Evaluation

- Concept of Test, Measurement & Evaluation in Physical Education & sports.
- Classification of Test in Physical Education and Sports.
- Test administration guidelines in physical education and sports

Unit VII Fundamentals of Anatomy, Physiology in Sports

- Definition and Importance of Anatomy and Physiology in exercise and sports
- Functions of Skeletal system, classification of bone and types of joints.
- Function and Structure of Circulatory system and heart.
- Function and Structure of Respiratory system.

Unit VIII Fundamentals of Kinesiology and Biomechanics in Sports

- Definition and Importance of Kinesiology and Biomechanics in sports
- Principles of Biomechanics
- Types of Body Movements - Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation
- Axis and Planes – Concept and its application in body movements

Unit IX Psychology & Sports

- Definition & Importance of Psychology in Physical Education & Sports
- Adolescent Problems & Their Management
- Team Cohesion and Sports

Unit X Training and Doping in Sports

- Concept and Principles of Sports Training
- Training Load: Over Load, Adaptation, and Recovery
- Concept of Doping and its disadvantages

Practical **Max. Marks 30**

01.	Physical Fitness Test: SAI Khelo India Test, Brockport Physical Fitness Test (BPFT)*	6 Marks
02.	Proficiency in Games and Sports (Skill of any one IOA recognised Sport/Game of Choice)**	7 Marks
03.	Yogic Practices	7 Marks
04.	Record File ***	5 Marks
05.	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: Labelled diagram of 400 M Track & Field with computations.
- Practical-2: Describe Changing Trends in Sports & Games in terms of changes in Playing surface, Wearable gears, Equipment, Technological advancements.
- Practical-3: Labelled diagram of field & equipment of any one IOA recognised Sport/Game of choice.

PHYSICS
Class XI-XII (Code No.42)
(2022-23)

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 – 2022-23 (Theory)

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

		No. of Periods	Marks
Unit–I	**Physical World and Measurement**	**08**	**23**
	Chapter–2: Units and Measurements		
Unit-II	**Kinematics**	**24**	
	Chapter–3: Motion in a Straight Line		
	Chapter–4: Motion in a Plane		
Unit–III	**Laws of Motion**	**14**	
	Chapter–5: Laws of Motion		
Unit–IV	**Work, Energy and Power**	**14**	**17**
	Chapter–6: Work, Energy and Power		
Unit–V	**Motion of System of Particles and Rigid Body**	**18**	
	Chapter–7: System of Particles and Rotational Motion		
Unit-VI	**Gravitation**	**12**	
	Chapter–8: Gravitation		
Unit–VII	**Properties of Bulk Matter**	**24**	**20**
	Chapter–9: Mechanical Properties of Solids		
	Chapter–10: Mechanical Properties of Fluids		
	Chapter–11: Thermal Properties of Matter		
Unit–VIII	**Thermodynamics**	**12**	
	Chapter–12: Thermodynamics		
Unit–IX	**Behaviour of Perfect Gases and Kinetic Theory of Gases**	**08**	
	Chapter–13: Kinetic Theory		
Unit–X	**Oscillations and Waves**	**26**	**10**
	Chapter–14: Oscillations		
	Chapter–15: Waves		
Total		**160**	**70**

Unit I: Physical World and Measurement 08 Periods

Chapter–2: Units and Measurements

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

Unit II: Kinematics 24 Periods

Chapter–3: 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, and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical treatment).

Chapter–4: 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 14 Periods

Chapter–5: 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 14 Periods

Chapter–6: 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 18Periods

Chapter–7: 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 12 Periods

Chapter–8: 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 velocity,

orbital velocity of a satellite.

Unit VII: Properties of Bulk Matter **24 Periods**

Chapter–9: 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.

Chapter–10: 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.

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–11: 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 **12 Periods**

Chapter–12: Thermodynamics

Thermal equilibrium and definition of temperature zeroth law of thermodynamics, heat, work and internal energy. First law of thermodynamics,

Second law of thermodynamics: gaseous state of matter, change of condition

of gaseous state -isothermal, adiabatic, reversible, irreversible, and cyclic processes.

Unit IX: Behavior of Perfect Gases and Kinetic Theory of Gases 08 Periods

Chapter–13: 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 26 Periods

Chapter–14: Oscillations

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

Simple harmonic motion (S.H.M) 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–15: 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

Total Periods: 60

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 L-T^2 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 L-T^2 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 2022-23 is not to be tested by schools.

POLITICAL SCIENCE (Code No. 028)

(2022-23)

Rationale

At the senior secondary level, students who opt for Political Science are given an opportunity to get exposed to the diverse concepts of the discipline helping them to be a global citizen and develop skills to understand, apply and evaluate. At this level, there is a need to enable students to have the skills to engage with political processes that surround them and provide them with an understanding of the historical context that has shaped the present. The different courses expose the students to various streams of the discipline of Political Science: Political Theory, Indian Politics and International Politics. Concerns of the other two streams - Comparative Politics and Public Administration- are accommodated at different places in these courses. In introducing these streams, special care has been taken not to burden the students with the current jargon of the discipline. The basic idea here is to lay the foundations for a serious engagement with the discipline and develop competencies related to Political Science to prepare them for higher education, learning and knowledge.

Competencies and Outcomes:

1. Indian Constitution at Work:

1.1 Competency: Understanding, identifying and analyzing the key features, historical processes and working of the Constitution of India.

1.2 Outcomes: The students will:

1.2.1 Understand the historical processes and the circumstances in which the Constitution was drafted.

1.2.2 Be familiar with the diverse perspectives that guided the makers of the Indian Constitution.

1.2.3 Identify key features of the Constitution and compare these to other constitutions in the world.

1.2.4 Analyse the working of the Constitution in real life.

2. Political Theory:

2.1 Competency: Understanding, critically evaluating and applying political theory

2.2 Outcomes: After the course the students will:

2.2.1 Understand different themes and thinkers associated with the real life.

2.2.2 Develop the skills for logical reasoning

2.2.3 Meaningfully participate in the issues and concerns of political life surrounding them.

3. Contemporary World Politics:

3.1 Competency: Understanding, analyzing the Contemporary World Politics

3.2 Outcomes: After the course the students will:

3.2.1 Understand the contemporary world.

3.2.2 Understand the key political events and processes in the post-cold war era.

3.2.3 Analyze various global institutions, processes and events shaping their lives.

4. Politics in India after Independence:

4.1 Competency: Critically evaluate and understand, analyze politics in India after Independence

4.2 Outcomes: After the course the students will:

4.2.1 Understand and analyze constitutional institutions, figures and their working in the post-independence period; political events, trends, other facts and figures and contribution of eminent personalities from the post-independence to contemporary India.

4.2.2 Develop their capacity to link political policies and processes with contemporary realities.

4.2.3 Encourage the students to understand and analyse the challenges for contemporary India.

POLITICAL SCIENCE (028)
Class XI (2022-23)

Total Marks = 100(80+20)

A.Theory **Max Marks: 80**
Time: 3 hrs.

Part A: Indian Constitution at Work

Units	Contents	Marks
1	Constitution	12
2	Election and Representation	10
3	The Legislature	
4	The Executive	08
5	The Judiciary	
6	Federalism	10
7	Local Governments	
	Total	**40**

Part B: Political Theory

Units	Contents	Marks
8	Political Theory: An Introduction	04
9	Liberty	10
10	Equality	
11	Justice	08
12	Rights	
13	Citizenship	10
14	Nationalism	
15	Secularism	08
	Total	**40**

B. Project Work: **20 Marks**

Grand Total = 100 Marks

COURSE CONTENT

Part A: Indian Constitution at Work

1. Constitution **28 Periods**

Constitution: Why and How, The Making of the Constitution, Fundamental Rights and Duties, Directive Principles of State Policy, constitutional Amendments.

2. Election and Representation **12 Periods**

Elections and Democracy, Election System in India, Electoral Reforms.

3. Legislature **16 Periods**

Why do we need a Parliament? Unicameral / Bicameral Legislature. Functions and Power of the Parliament, Parliamentary committees. Parliamentary Officials: Speaker, Deputy Speaker, Parliamentary Secretary.

4. Executive **16 Periods**

What is an Executive? Different Types of Executive. Parliamentary Executive in India, Prime Minister and Council of Ministers. Permanent Executive: Bureaucracy.

5. Judiciary **16 Periods**

Why do we need an Independent Judiciary? Structure of the Judiciary, Judicial Review, Judicial Activism, Judicial Over-reach.

6. Federalism **14 Periods**

What is Federalism? Evolution & Growth of the Indian Federalism: Quasi Federalism, Cooperative Federalism & Competitive Federalism.

7. Local Governments **12 Periods**

Why do we need Local Governments? Growth of Local Government in India, 73rd and 74th Amendments, Working and Challenges of Local Governments.

Part B: Political Theory

8. Political Theory: An Introduction **08 Periods**

What is Politics? Politics V/s Political Theory, Importance of Political Theory.

9. Liberty **12 Periods**

Liberty V.s Freedom, Negative and Positive Liberty.

10. Equality **12 Periods**

What is Equality? Significance of Equality. Various dimensions of Equality. How can we promote Equality?

11. Justice **14 Periods**

What is Justice? Different dimensions of Justice, Distributive Justice.

12. Rights **14 Periods**

What are Rights? Where do Rights come from? Legal Rights and the State. Kinds of Rights. Human Rights.

13. Citizenship **12 Periods**

What is citizenship? Citizen and Citizenship, Citizen and Nation, Global Citizenship

14. Nationalism **16 Periods**

Nations and Nationalism, Variants of Nationalism, Nationalism, Pluralism and Multiculturalism.

15. Secularism **18 Periods**

What is Secularism? What is Secular State? The Western and the Indian perspectives to Secularism. Salient Features of Indian Secularism.

Prescribed Books:

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

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

Question Paper Design (2022-23) POLITICAL SCIENCE (CODE NO. 028) CLASS XI TIME: 3 Hours Max. Marks: 80	
S.No.	**Competencies**
1	**Demonstrative Knowledge + Understanding** (Knowledge based simple recall questions, to know specific facts, terms, concepts, principles or theories, identify, define, or recite, information) (Comprehension – to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase information)
2	**Knowledge / Conceptual Application** (Use abstract information in concrete situation, to apply knowledge to new situations; use given content to interpret a situation, provide an example or solve a problem)
3	**Formulation Analysis, Evaluation and Creativity** Analysis & Synthesis- classify, compare, contrast, or differentiate between different pieces of information; organize and/or integrate unique pieces of information from a variety of sources; includes map interpretation

Project Work: 20 Marks

Details of Project Work

1. The Project work will be implemented for 20 Marks.
2. Out of 20 marks, 10 marks are to be allotted to viva voce and 10 marks for project work.
3. For class XII, the evaluation for 20 marks project work should be done jointly by the internal as well as the external examiners.
4. The project can be individual/pair/group of 4-5 each. The Project can be made on the topics given in the syllabus of a particular class.
5. The suggestive list of activities for project work is as follows: -
   Role Play, Skit, Presentation, Model, Field Survey, Mock Drills/Mock Event etc.
6. 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.