

**VISHWA BHARTI PUBLIC SCHOOL,  
GREATER NOIDA  
YEARLY SYLLABUS  
CLASS XI :2026-27**

**ENGLISH CORE - TEXTBOOK PRESCRIBED-**

- 1. ENGLISH READER- HORNBILL**
- 2. SUPPLEMENTARY READER- SNAPSHOT**

| <b>MONTH</b> | <b>BOOK /MAIN SKILL</b>                                     | <b>UNIT/TOPIC</b>                                                                                                                                                                       | <b>EXPERIENTIAL<br/>LEARNING/ACTIVITIES</b>                                                                                                     |
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| APRIL        | HORNBILL<br><br>SNAPSHOT<br><br>WRITING<br><br>SKILL        | <ul style="list-style-type: none"> <li>• THE PORTRAIT OF A LADY</li> <li>• A PHOTOGRAPH (POEM)</li> <li>• THE SUMMER OF THE BEAUTIFUL WHITE HORSE.</li> <li>• SPEECH WRITING</li> </ul> | <ul style="list-style-type: none"> <li>• <b>INTERVIEW A GRANDPARENT/ELDER</b></li> <li>• <b>CREATE A MEMORY PORTRAIT ON A4 SHEET</b></li> </ul> |
| MAY          | HORNBILL<br><br><br><br><br><br><br>SNAPSHOT WRITING SKILLS | <ul style="list-style-type: none"> <li>• WE AREN'T AFRAID TO DIE</li> <li>• LABURNUM TOP</li> <li>• THE ADDRESS</li> <li>• WRITING SKILLS- POSTER MAKING</li> </ul>                     | <ul style="list-style-type: none"> <li>• <b>TRAVELOGUE ON SURVIVAL SKILLS AND TEAMWORK</b></li> <li>• <b>EVACUATION DRILL</b></li> </ul>        |

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| JULY | HORNBILL<br><br><br><br><br><br><br><br><br><br>WRITING SKILLS                                     | <ul style="list-style-type: none"> <li>DISCOVERING TUT-THE SAGA CONTINUES</li> <li>THE VOICE OF THE RAIN (POEM)</li> <li>CLASSIFIED ADVERTISEMENTS</li> </ul>              | <ul style="list-style-type: none"> <li><b>DIAGRAM ACTIVITY-</b> WATER CYCLE</li> <li><b>BE AN ARCHAEOLOGIST-MINI EXCAVATION SIMULATION</b></li> </ul>                        |
| AUG  | HORNBILL<br><br><br><br><br><br><br>SNAPSHOT<br><br><br>READING SKILLS, WRITING SKILLS AND GRAMMAR | <ul style="list-style-type: none"> <li>ADVENTURE</li> <li>FATHER TO SON</li> <li>MOTHER'S DAY</li> <li>NOTE-MAKING AND ABSTRACTIONS</li> <li>INTEGRATED GRAMMAR</li> </ul> | <ul style="list-style-type: none"> <li><b>ROLE PLAY ACTIVITY -</b> APPRECIATING MOTHERS AND FAMILY ROLES</li> <li><b>NOTES MAKING -</b> EXPLORING PARALLEL WORLDS</li> </ul> |
| SEPT | FIRST TERM EXAMINATION                                                                             | <ul style="list-style-type: none"> <li>ASSESSMENT OF SPEAKING &amp; LISTENING SKILLS</li> </ul>                                                                            |                                                                                                                                                                              |
| OCT  | HORNBILL<br><br><br>WRITING SKILLS AND GRAMMAR                                                     | <ul style="list-style-type: none"> <li>SILK ROAD</li> <li>CHILDHOOD</li> <li>DEBATE WRITING</li> <li>INTEGRATED GRAMMAR PRACTICE</li> </ul>                                | <ul style="list-style-type: none"> <li><b>ARTICLE WRITING-</b> ANCIENT WAYS OF TRADE, TRAVEL, AND CULTURAL EXCHANGE</li> </ul>                                               |
| NOV  | HORNBILL<br><br>SNAPSHOT<br><br>WRITING SKILL                                                      | <ul style="list-style-type: none"> <li>THE TALE OF THE MELON CITY BIRTH</li> <li>REVISION.</li> </ul>                                                                      | <b>ROLE -PLAY-</b> “A LAWLESS CITY WITH AN INCOMPETENT RULER.                                                                                                                |

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| DEC      | WRITING SKILLS &<br>GRAMMAR | <ul style="list-style-type: none"><li>● REVISION</li><li>● COMPREHENSION<br/>SKILLS(REVISION)</li></ul>                    | <ul style="list-style-type: none"><li>● <b>INTER CLASS DEBATE</b></li><li>● <b>CLASS TESTS</b><br/>-ORAL/WRITTEN</li></ul> |
| JAN- FEB | REVISION                    | <ul style="list-style-type: none"><li>● REVISION</li><li>● ASSESSMENT OF<br/>SPEAKING &amp; LISTENING<br/>SKILLS</li></ul> | <ul style="list-style-type: none"><li>● <b>PRACTICAL-ASL</b></li></ul>                                                     |

**SUBJECT: MATHS**

**TEXT BOOK PRESCRIBED: NCERT MATHS, EXEMPLAR PROBLEMS IN MATHS**

| MONTH | CHAPTER                            | SUB TOPIC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ACTIVITIES                                                                                                                                                                                                                                                                                                                                                                                                               |
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| APRIL | Chapter -1 SETS                    | Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement.                                                                                                                                                                                                                                                                                                                                                                   | <b>Activity</b><br>To find the number of subsets of a given set and verify that if a set has $n$ elements, then the <b>total number of subsets is <math>2^n</math></b> .<br>To represent set theoretic operations using <b>Venn diagrams</b> .                                                                                                                                                                           |
|       | Chapter -2 RELATIONS AND FUNCTIONS | Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto $R \times R \times R$ ). 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. | ACTIVITY(To understand the concept of Cartesian product and relations between two sets)<br><b>1.To verify that for two sets A and B, if <math>n(A) = p</math> and <math>n(B) = q</math>, then <math>n(A \times B) = pq</math>, and the total number of relations from A to B is <math>2^{pq}</math>.</b><br><b>2.To understand and distinguish between a Relation and a Function</b> with the help of suitable examples. |
|       | Chapter-3 TRIGONOMETRIC FUNCTIONS  | Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Trigonometry Activities</b><br>★ To verify the relation between the degree measure and the radian measure of an angle.<br>★ To find the values of sine and cosine functions in the second, third and fourth quadrants using their values in the first quadrant.                                                                                                                                                       |

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| MAY  | <p><b>Chapter -3<br/>TRIGONOMETRIC FUNCTIONS<br/>(cntd)</b></p> <p><b>Chapter -4<br/>COMPLEX NUMBERS AND QUADRATIC EQUATIONS</b></p> <p><b>Chapter -5<br/>LINEAR INEQUALITIES</b></p> | <p>Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing <math>\sin(x \pm y)</math> and <math>\cos(x \pm y)</math> in terms of <math>\sin x</math>, <math>\sin y</math>, <math>\cos x</math> &amp; <math>\cos y</math> and their simple applications.</p> <p>Need for complex numbers, especially <math>\sqrt{-1}</math>, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane.</p> <p>Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.</p> | <p>★ To prepare a model to illustrate the values of sine and cosine functions for different angles which are multiples of <math>\pi/2</math> and <math>\pi</math>.</p> <p>★ To <b>plot the graphs</b> of <math>\sin x</math>, <math>\sin 2x</math>, <math>2\sin x</math> and <math>\cos x</math> on the same coordinate axes.</p> <p>ACTIVITY<br/>(To develop a clear understanding of complex numbers in mathematics)</p> <p>★ To interpret <b>geometrically the meaning of the imaginary unit <math>i = \sqrt{-1}</math></b> and its integral powers.</p> <p><b>Activity (Graph based)</b><br/><b>To verify the solution set of a linear inequality in two variables using a graph.</b></p> |
| JULY | <p><b>Chapter -6<br/>PERMUTATIONS AND COMBINATIONS</b></p> <p><b>Chapter -7<br/>BINOMIAL THEOREM</b></p>                                                                              | <p>Fundamental principle of counting. Factorial <math>n</math>. (<math>n!</math>) Permutations and combinations, derivation of Formulae for <math>nPr</math> and <math>nCr</math> and their connections, simple applications.</p> <p>Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications.</p>                                                                                                                                                                                                                                                                  | <p>Activity</p> <ul style="list-style-type: none"> <li>• Books Arrangement Activity</li> <li>• Arranging Students Activity (Permutation).</li> <li>• Forming Numbers Using Digits</li> <li>• Selection of Team Members (Combination)</li> </ul> <p>ACTIVITY<br/>(To learn how the coefficients of the binomial expansion are obtained )</p> <p>★ To construct <b>Pascal's Triangle</b> and use it to write the binomial expansion for a given positive integral exponent.</p>                                                                                                                                                                                                                 |

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| AUG | <p><b>Chapter -8<br/>SEQUENCES<br/>AND SERIES</b></p> <p><b>Chapter – 9<br/>STRAIGHT<br/>LINE</b></p>                                            | <p>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.</p> <p>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.</p>                                       | <p>Activity ( To understand the relationship between Arithmetic Mean and Geometric Mean)</p> <ul style="list-style-type: none"> <li>• To demonstrate that the Arithmetic Mean (A.M.) of two different positive numbers is always greater than the Geometric Mean (G.M.).</li> </ul>                                                                                                               |
| OCT | <p><b>Chapter -10<br/>CONIC<br/>SECTIONS</b></p> <p><b>Chapter -11<br/>INTRODUCTI<br/>ON TO<br/>THREE-<br/>DIMENSIONA<br/>L<br/>GEOMETRY</b></p> | <p>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.</p> <p>Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points.</p>                                                                                                                                       | <p>ACTIVITY (To develop a better understanding of conic sections in coordinate geometry)</p> <p>To construct different types of conic sections.</p> <p>To construct a <b>parabola</b> and an <b>ellipse</b> using a rectangle method (<b>OR FOCUS, ECCENTRICITY METHOD</b>).</p> <p>★ To explain the concept of <b>octants</b> formed by <b>three mutually perpendicular planes</b> in space.</p> |
| NOV | <p><b>Chapter-12<br/>LIMITS AND<br/>DERIVATIVE<br/>S</b></p> <p><b>Chapter -13<br/>STATISTICS</b></p>                                            | <p>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 slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.</p> <p>Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.</p> | <p>ACTIVITY (To develop a clear idea of the concept of limits in calculus)</p> <ul style="list-style-type: none"> <li>• To understand the concept of the limit of a function at a point using numerical values.</li> </ul> <p>Derivatives formulas quiz</p>                                                                                                                                       |

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| DEC | Chapter -14<br>PROBABILITY | Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events. | ACTIVITY (To understand probability through sample space)<br><br>To write the sample space when a coin or a die is tossed once, two times, three times and four times. |
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# ACCOUNTANCY

Textbook Prescribed: NCERT, Double Entry Bookkeeping (Financial Accounting) T.S. Grewal

| Month | Topic                                | Subtopic                                                                                                                                                                                                                                                                                                                                                                                                   | ACTIVITIES                                                                                                                           |
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| April | <b>Unit-1: Theoretical Framework</b> | Accounting- concept, objectives, advantages and limitations, types accounting, information; users of accounting information and their needs. Qualitative Characteristics of Accounting Information. Role of Accounting in Business                                                                                                                                                                         | Activity (to introduce the lesson): Probing questions based on Story Telling related to purchase and sell of articles.               |
|       | <b>1. Introduction to Accounting</b> |                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                      |
|       | <b>2. Basic Accounting Terms</b>     | Business Transaction, Capital, Drawings, Liabilities (Non- Current and Current). Assets (Non- Current, Current); Fixed assets (Tangible and intangible), Expenditure (Capital and Revenue), Expense, Income, Profit, Gain, Loss, Purchase, Sales, Goods, Stock, Debtor, Creditor, Voucher, Discount (Trade discount and Cash Discount)                                                                     | To develop the skills of using accounting equation in processing business transactions.                                              |
|       | <b>3. Theory Base of Accounting</b>  | Theory Base of Accounting<br>Fundamental accounting assumptions:<br>GAAP: Concept Business Entity, Money Measurement, Going Concern, Accounting Period, Cost Concept, Dual Aspect, Revenue Recognition, Machinating Full Disclosure, Consistency, Conservatism, Materiality and Objectivity<br><br>System of Accounting.<br><br>Accounting Standards: Applicability in Ind AS Goods and Services Tax (GST) | Story telling Story of kirana shop keeper will be narrated who sells goods in his locality on credit and cash.( Basis of Accounting) |
|       | <b>4. Basis of Accounting</b>        | Basis of Accounting: cash basis and accrual basis Characteristics and Objective.                                                                                                                                                                                                                                                                                                                           |                                                                                                                                      |



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| <b>May</b>               | <b>5.Accounting Equation</b><br><br><b>6. Accounting Procedures: Rules of Debit and Credit</b><br><br><b>7. Origin of Transactions: Source Documents and preparation of vouchers</b>      | Accounting Equation Approach:Meaning and Analysis.<br><br>Rules of Debit and Credit.<br><br>Recording of Business Transactions Voucher and Transactions: Source documents and Vouchers, Preparation of Vouchers                                                                                                                                                                               | Activity (to support learning): Show-casing of real life account books . ( Journal) Self made worksheet Probing questions to the students for building concept of assumption and principles<br><br>Explanations and different types of vouchers and source documents will be shown to them.<br><br>Activity: Prepare / arrange different types of vouchers and source documents and paste it in copy.                                                                                                                                                                                                                                                                              |
| <b>July &amp; August</b> | <b>Unit-2: Accounting Process</b><br><b>8. Journal</b><br><br><b>9. Ledger</b><br><br><b>10. Special Purpose books I-Cash Book</b><br><br><b>11. Special Purpose books II-Other Books</b> | Recording of Transactions: Books of Original Entry- Journal<br><br>Format, Posting from Journal and subsidiary books, Balancing of Accounts.<br><br>Cash Book: Simple, cash book with bank column and petty cashbook purchase book ,sales book , Purchase return,sales return, journal proper<br><br>Note: Including trade discount, freight and cartage Expenses for simple GST calculation. | <b>Activity: Accounting Role Play</b> <br><br><b>Understand the accounting process in a fun way.</b><br><br><b>Procedure:</b> <ol style="list-style-type: none"> <li><b>Assign roles:</b> <ul style="list-style-type: none"> <li>Business Owner</li> <li>Accountant</li> <li>Customer</li> </ul> </li> <li><b>Students act out transactions like buying goods or paying rent.</b></li> <li><b>The “Accountant” records them in the Journal and later posts them to the Ledger.</b></li> </ol><br><b>Outcome:</b><br><b>Students connect real business activities with accounting records.</b> |

**Ch-12 Bank  
Reconciliation  
Statement**

Need and preparation, Bank  
Reconciliation Statement with  
Adjusted Cash Book

**Activity: Transaction to  
Journal Race** 

**Objective:** Practice writing  
journal entries quickly.

**Procedure:**

- 1. Divide the class into two teams.**
- 2. Give each team a list of transactions.**
- 3. One student from each team comes to the board and writes the journal entry.**
- 4. The team with the most correct entries wins.**



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| <p>November and December</p> | <p><b>Part B: Financial Accounting - II</b></p> <p><b>Unit 3:</b></p> <p><b>18. Financial Statements of sole proprietorship</b></p> <p><b>19. Adjustments in preparation of financial statements</b></p> <p><b>20. Accounts for incomplete Records ( Single entry system )</b></p> | <p>Financial Statements</p> <p>Meaning, objectives and importance; Revenue and finances.</p> <p>Capital Receipts; Revenue and Capital Expenditure; Deferred Revenue expenditure.</p> <p>Trading and Profit and Loss Account: Gross Profit, Operating profit and Net profit. Preparation.</p> <p>Balance Sheet: need, grouping and marshalling of assets and liabilities. Preparation.</p> <p>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.</p> <p>Preparation of Trading and Profit and Loss account and Balance Sheet of a sole proprietorship with adjustments.</p> <p>Incomplete Records Features, reasons and limitations.</p> <p>Ascertainment of Profit/Loss by Statement of Affairs method.</p> <p>Difference between accounts from incomplete records and Statement of Affairs. Preparation of Trading, Profit and Loss account and Balance Sheet.</p> | <p><b>Financial Statements of Sole Proprietorship – Profit and Loss Account:</b> Students are given a list of <b>expenses and incomes</b> of a small shop and classify them to prepare a simple <b>Profit and Loss Account</b> to find net profit or loss. 🇮🇳</p> <p>Project file preparation of sole proprietorship firm and prepare journal ,ledger, trail balance and final accounts trading and profit &amp; loss a/c..</p> |
| <p>January</p>               | <p>REVISION</p>                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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**SUBJECT-BUSINESS STUDIES****TEXT BOOK PRESCRIBED: NCERT or POONAM****GANDHI**

| <b>MONTH</b>               | <b>UNITS</b>                                                               | <b>UNIT &amp; SUB UNIT</b>                                                                                                                                                                                                 | <b>ACTIVITIES</b>                                                                                                                |
|----------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>APRIL</b>               | Part-A:<br><br>Unit 1.Evolution and<br><br>Fundamentals of<br><br>Business | Concept Economic and non economic activities<br>Business Risk , Objectives of business,<br>Commerce and trade.<br><br>History of Trade and Commerce in India:<br><br>Economic and non-economic activities<br>Business Risk | Role play on<br>different Economic<br>activities                                                                                 |
| <b>APRIL<br/>&amp; MAY</b> | Unit 2.- Forms of<br>Business Organisation                                 | Different types of<br>Organisation<br>Private Company Vs. Limited Liability<br>Partnership<br><br>Choice of form of business organization                                                                                  | Debate on<br>Advantages and<br>Disadvantages of<br>sole proprietorship<br>and partnership<br>forms of business<br>organization . |

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| JULY   | <p>Unit 3.-Private Public And Global Enterprises</p> <p>Unit4. Business Services</p> | <p><b>Private Sector and public sectors</b> -Forms of public sector enterprises Changing Role of public sector Global Enterprises.</p> <p>Business Services<br/>Meaning and Types<br/>Banking: Types of bank accounts<br/>Banking Services – Bank Draft, Bank Overdraft, Cash Credit<br/>E Banking – meaning, types of digital payments Insurance: Principles<br/>Types of insurance: life, health, fire and marine - concept<br/>Discuss the meaning of different types of insurance-life, health, fire, marine insurance.<br/>Postal Service - Mail, Registered Post, Parcel, Speed Post, Courier - meaning understand the utility of different telecom services</p> | <p>Quizzes and Bingo game on forms of public sector enterprises.</p> <p>Presentation on various types of business services and bank accounts.</p>             |
| August | Unit 5-Emerging Modes of Business                                                    | <p>Emerging Modes of Business<br/>E business – concept, scope, benefits<br/>Outsourcing concepts: BPO, KPO</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>Debate on advantages and disadvantages of e-Business AND traditional business.</p>                                                                         |
|        | Unit 6.-Social responsibility of Business and Business Ethics                        | <p>Social responsibility of Business and Business Ethics Concept of social responsibility Case for social responsibility, Responsibility towards owners, investors, consumers, employees, government and community<br/>Appreciate the role of business in environment protection.<br/>Business Ethics – Concept and elements</p>                                                                                                                                                                                                                                                                                                                                       | <p>Project on Social Responsibility as an objective of each and every organization<br/>Applicability of social Responsibility in different organizations.</p> |

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| SEPT | Unit 7-Formation of a Company.                                                         | Formation of a Company Stages in formation of company Documents prepared for formation of a Company.                                                                                                                                                                                                                                                                                                                                                                            | Extempore on various sources of funds into owner's funds Showing the layout of owners fund and Borrowed <b>funds</b> . |
| OCT  | Unit 8.Sources of Business Finance.                                                    | <p>Concept of Business Finance<br/>Types of business finance<br/>Owners' funds - equity shares, preferences share, retained earnings, Global Depository receipt (GDR), American Depository Receipt (ADR) and International Depository Receipt (IDR) – concept Borrowed funds: debentures and bonds, loan from financial institution and commercial banks, public deposits, trade credit, Inter Corporate Deposits (ICD)</p> <p>Factors determining choice of source of fund</p> |                                                                                                                        |
| NOV  | <p>Unit 9.<br/>Small Scale Business and Enterprises Unit</p> <p>10.Internal Trade.</p> | <p>-Small Scale Industry<br/>- Role Of Govt<br/>-Small Business<br/>-Govt. Assistance<br/>Entrepreneurship Development</p> <p>Internal Trade.Wholesale Trade and Retail trade.<br/>Types of Retailing<br/>Role of Indian Chambers of Commerce<br/>Documents</p>                                                                                                                                                                                                                 | <p>Debate on the role of small Business in India.</p> <p>Project on visit to departmental stores.</p>                  |
| DEC  | Unit 11<br>International Business                                                      | <p>International Business Nature and Significance. Export Procedure.<br/>Import Procedure.<br/>Documents.<br/>World Trade Organisation</p>                                                                                                                                                                                                                                                                                                                                      |                                                                                                                        |
| JAN  | REVISION                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                        |



## **SUBJECT: GEOGRAPHY**

BOOKS: NCERT

1) Fundamentals of Physical Geography

2) India: Physical Environment

3) Practical Work in Geography – Part 1

| <b>MONTHS</b> | <b>CHAPTER</b>                                                                                                             | <b>UNIT/SUB UNITS</b>                                                                                                                                                                                                                                                                                                                                                                    | <b>ACTIVITIES</b>                                                                                                                                                                            |
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| APRIL         | India – Location<br><br>Geography as a Discipline<br><br>Structure and Physiography                                        | Location, space relations, India's place in the world.<br><br>Meaning of geography as an integrating discipline. The fields of geography and its relationship with other disciplines. The approaches to study geography<br>Introduction- The Peninsular block,<br><br>The Himalaya and other peninsular mountains.                                                                       | <ul style="list-style-type: none"><li>● Map Work: States and Union Territories of India.</li><li>● Diagram: The fields of Geography</li><li>● Map Work: Physical features of India</li></ul> |
| MAY           | Structure and Physiography (contd.)<br><br>The Origin and Evolution of the Earth<br><br>Drainage System<br><br>Practical-1 | Physiography, The North and North-eastern mountains, The Northern Plains, The Peninsular plateau, The Coastal Plains, The islands.<br>The Big Bang, Planetesimal theory, Nebular Hypothesis related to the origin of the universe.<br>Concept of river basins, watershed; the Himalayan and the Peninsular rivers<br><br>Maps -types; scales-types; construction of simple linear scale, | <ul style="list-style-type: none"><li>● PPT: Big Bang Theory</li><li>● Model: Delta</li><li>● Diagrams: Ox bow lake, Meanders.</li><li>● Diagrams: Construction of scales</li></ul>          |



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| AUGUST    | Landform and their Evolution            | Erosional and depositional landforms created by different agents like running water, ground water (limestone/Kast topography, glaciers & wind                                                      | <ul style="list-style-type: none"> <li>Short Video: Landforms created by different agents.</li> </ul> |
|           | Climate                                 | Factors affecting climate of the country and its effect on country's economic life; Annual cycle of four main seasons in India; Causes and problems of climate changes; Concept of Global Warming. | Class Discussion on climate change.                                                                   |
|           | Practical- 3                            | Latitudes & longitudes                                                                                                                                                                             |                                                                                                       |
| SEPTEMBER | Composition and Structure of Atmosphere | <p>The composition of the atmosphere. Characteristics &amp; the structure of different layers of atmosphere.</p> <p>Elements of weather and climate</p> <p>REVISION AND TERM1</p>                  | Diagram: Layers of Atmosphere                                                                         |

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| OCTOBER  | Solar Radiation, Heat Balance and Temperature                                                                                                                                                           | Differentiate between solar radiation and terrestrial radiation. Variability of insolation at the surface of the earth. The heat budget of the planet earth. Factors controlling temperature distribution. Inversion of temperature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>Temperature Inversion Demonstration Activity</li> </ul> |
|          | Atmospheric Circulation and Weather Systems                                                                                                                                                             | Permanent pressure belts and the prevailing winds. · Explain different types of winds. · Differentiate between tropical and extra tropical cyclones                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>Diagram: Pressure Belts</li> </ul>                      |
| NOVEMBER | <p>Water in the Atmosphere</p> <p>World Climate and Climate Change<br/>(To be tested through internal assessments in the form of project and presentation)</p> <p>Water (Oceans)</p> <p>Practical-4</p> | <p>Introduction – Evaporation and condensation, Dew, Frost &amp; Fog and Mist Cloud and its types, Precipitation Types of rainfall. World distribution of rainfall</p> <p>Classify climate based on various schemes by Koeppen with the help of a mind map. Causes and effects of global warming. Climate changes.</p> <p>Hydrological cycle, Relief of ocean floor, features (Mid-ocean ridges, seamounts, submarine canyons, guyots, and atolls) horizontal and vertical distribution of oceanic temperature. Factors affecting the salinity of ocean waters.</p> <p>-Map projection- Latitude, longitude and time, typology, construction and properties of projection: Conical with one standard parallel and Mercator's projection. (Only two projections)</p> | <ul style="list-style-type: none"> <li></li> </ul>                                             |

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| DECEMBER | <p>Movements of Ocean</p> <p>Natural Vegetation</p> <p>Practical</p>                                                                                      | <p>Differentiate between tides and currents. Formation of sea waves Importance of tide Major Ocean currents and its effects.</p> <p>-Introduction- Types of forests Tropical evergreen forest, Tropical deciduous forest, Tropical thorn forest</p> <p>-Montana forest, Littoral and swamp forest.</p> <p>Topographical Maps<br/>Introduction to Remote Sensing</p> | <ul style="list-style-type: none"> <li>Model: Cold Ocean Current/Warm Ocean Current</li> <li>Map Work: Types of Forest in India</li> </ul> |
| JANUARY  | <p>Biodiversity and Conservation</p> <p>(To be tested through internal assessments in the form of project and presentation)</p> <p>REVISION AND TERM2</p> |                                                                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>Quiz</li> <li>ClassTests</li> </ul>                                                                 |
| FEB      | REVISION                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                            |

## SUBJECT – PSYCHOLOGY

### Reference book – Introduction to Psychology part I

| MONTH | UNIT                | TOPICS                                                                                                                                                                                                                                                                                                                                                             | ACTIVITIES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| APRIL | What is psychology? | <p>What is psychology</p> <p>Popular notions about discipline of psychology Understanding mind &amp; behaviour</p> <p>Evolution of psychology</p> <p>Branches of psychology Themes of research &amp; application</p> <p>Psychology and other discipline</p> <p>Psychology at work</p> <p>Psychology in everyday life</p> <p>Development of psychology in India</p> | <p>Objective</p> <p>To show students that when we focus strongly on one task, we may miss other obvious things.</p> <p>Steps</p> <p>Tell the student:</p> <p>“I am going to show you a short video. Your task is to count how many times the players wearing white shirts pass the basketball.”</p> <p>Show the famous Invisible Gorilla video (about 30 seconds).</p> <p>After the video ends, ask:</p> <p>“How many passes did you count?”</p> <p>Then ask the important question:</p> <p>“Did you notice anything unusual in the video?”</p> <p>Many students will say no.</p> <p>Tell them:</p> <p>“A person in a gorilla costume walked through the players.”</p> |

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|      |                                  |                                                                                                                                                                                                                                                                  | Replay the video. Students are usually shocked and laugh.                                                                                                                                                                                                                                                                                                                                                                                                                  |
| MAY  | Methods of enquiry in Psychology | <p>Goals of psychological enquiry<br/>Nature of psychological data<br/>Some important methods – observational, experimental and correlation ,survey,psychological testing Case study Analysis of data<br/>Limitations of psychological enquiry<br/>Project 1</p> | <p>Objective</p> <p>To help students experience the Survey Method used in psychology.</p> <p>Steps</p> <p>Give one student a simple question to ask 5 classmates.</p> <p>Example questions:</p> <p>How many hours do you sleep daily?</p> <p>Do you feel stressed before exams? (Yes/No)</p> <p>What helps you relax the most?</p> <p>Ask the student to note down the answers.</p> <p>After collecting responses, ask the student to count and summarize the results.</p> |
| JULY | Human development                | <p>Meaning of development Factors influencing development Context of development</p> <p>Overview of development stages – Infancy, childhood, challenges of adolescence, adulthood &amp; old age</p>                                                              | <p>Objective</p> <p>To help students understand the different stages of human development and how abilities change with age.</p> <p>Steps</p> <p>Give the student a blank paper.</p> <p>Ask them to draw a timeline of life from birth to old age.</p>                                                                                                                                                                                                                     |

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|     |                                               |                                                                                                                                                                                                                                                                                                                                                                                                      | <p>Divide it into stages:</p> <p>Infancy</p> <p>Childhood</p> <p>Adolescence</p> <p>Adulthood</p> <p>Old Age</p> <p>Ask them to write one physical, one emotional, and one cognitive change in each stage.</p>                                                                                      |
| AUG | Sensory, attentional and perceptual processes | <p>Knowing the world</p> <p>Nature and varieties of stimulus<br/>Sense modalities Adaptation<br/>Attentional processes<br/>Selective and sustained attention<br/>Perceptual processes The perceiver</p> <p>Principles of perceptual organization</p> <p>After images, Perceptions of space, depth, and distance Perceptual constancies</p> <p>Illusions, Socio cultural influences on perception</p> | <p>Activity: Show the student an ambiguous image (e.g., duck-rabbit illusion or old woman-young woman illusion).</p> <p>Reflection Questions</p> <p>Why did you see one image first?</p> <p>Can two people see different things in the same stimulus?</p> <p>What factors influence perception?</p> |
| OCT | Learning                                      | <p>Nature of learning<br/>Paradigms of learning<br/>Classical and operant conditioning, observational, cognitive, verbal, concept, and skill learning Factors facilitating learning<br/>Transfer of learning<br/>The learner - learning styles &amp; leaning disabilities<br/>Applications of learning principles</p>                                                                                | <p>Learning Outcome Students understand subjective perception and gestalt principles.</p> <p>Concept: Trial and Error Learning</p> <p>Steps</p>                                                                                                                                                     |



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|     |                      | PROJECT-2                                                                                                                                                                                                                                                                                                                                         | <p>Give the student a simple puzzle (e.g., untangling earphones or a small maze).</p> <p>Ask them to solve it without instructions.</p> <p>Reflection</p> <p>How many attempts did it take?</p> <p>Did you improve with each attempt?</p> <p>Learning Outcome Students experience learning through repeated attempts and mistakes.</p> |
| NOV | Human memory         | <p>Nature of memory, Information processing approach Levels of processing</p> <p>Memory systems –sensory, short term and long-term memory</p> <p>Knowledge representation and organization in memory as a constructive process</p> <p>Nature and causes of forgetting</p> <p>Enhancing memory</p>                                                 | <p>Activity: Read 15 random words slowly (1 word per second).</p> <p>Example words:Apple, River, Chair, Tiger, School, Moon, Pencil, Music, Window, Flower, Phone, Bottle, Train, Book, Candle</p> <p>Ask the student to recall as many as possible.</p> <p>Then repeat with grouped words (e.g., animals, objects).</p>               |
| DEC | Language and thought | <p>Building blocks of thinking Nature and Inter relationship Stages of Cognitive Development Language and Language use Nature of thinking</p> <p>Thought and language</p> <p>Development of language &amp; language use Reasoning Problem solving Decision making</p> <p>Nature and process of creative thinking Developing creative thinking</p> | <p>Concept: Language affects how we categorize things.</p> <p>Steps : Show the student many different shades of blue/green.</p> <p>Ask them to name each color.</p> <p>Ask: “Are these the same color or different?”</p>                                                                                                               |

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| JAN | Motivation & emotions | <p>Nature of motivation, Biological motives, Social and psychological motives – achievements, affiliation and power</p> <p>Maslow’s hierarchy of needs, Nature of emotions Physiological, cognitive, and cultural bases of emotions Expression of emotions</p> <p>Enhancing positive emotions e.g., happiness optimism Managing negative emotions e.g., anger fear</p> | <p>The concept shows different facial expressions. Ask them to: Identify the emotion. Describe a situation where they felt it . Concept Understanding emotional recognition and empathy.</p> |
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## SUBJECT: ECONOMICS

Books Prescribed: **1. Introduction to statistics N.C.E.R.T**

**2. Introductory Microeconomics-N.C.E.R. T**

**3. Elementary statistics-**

**4. Introductory Microeconomics-**

| MONTH | CHAPTER/UNIT | SUBUNIT\TOPIC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ACTIVITY                                                                                                         |
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| APRIL | 1            | <b>Introduction. (Statistics)</b><br><br>What is Economics?<br><br>Meaning and importance, functions and importance of statistics in Economics<br><br><b>Collection Organization and Presentation of data Collection of data –</b>                                                                                                                                                                                                                                                                                                                                                                                     | <b>Prediction of the economic future of the country through poster making competition.</b>                       |
| MAY   | 2b           | 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 Organization<br><b>Organization of Data</b> – Meaning and types of variables; Frequency Distribution.<br><b>Introductory (Microeconomics)</b><br>Meaning of microeconomics and macroeconomics; positive and normative economics.<br><br>Definition of an economy. Central problems of an economy: what, how and for whom to produce; concepts of production possibility frontier and opportunity cost. | <b>Project /PPT on collection of some data by each student from a primary source and from a secondary source</b> |



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|     |                                          | measurement of price elasticity of demand – percentage-change method and total expenditure Method.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                     |
| SEP | <b>Revision for terminal examination</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
| OCT | 6                                        | <p><b>Producer Behavior and Supply</b></p> <p>Meaning of Production Function – Short-Run and Long- Run.</p> <p>Total Product, Average Product and Marginal Product. Returns to a Factor:</p> <p>Law of Variable Proportions</p> <p>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.</p> <p>Revenue - total, average and marginal revenue - meaning and their relationship.</p> <p>Producer's equilibrium - meaning and its conditions in terms of marginal revenue - marginal cost.</p> <p>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.</p> | <b>Integrating it with art of exhibiting through Nukkad natak- Its impact (GST)</b> |

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| NOV         | 7                               | <p><b>Perfect Competition – Price Determination with simple applications.</b></p> <p>Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply. (Short Run Only)</p> <p>Simple Applications of Demand and Supply: Price ceiling, Price floor.</p> | <b>Assignment: Application based questions on Market Forms Discussion on real examples of Various Market Forms</b> |
| DEC         | 3.b                             | <p><b>Correlation</b> – meaning and properties, scatter diagram; Measures of correlation - Karl Pearson's method (two variables ungrouped data), Spearman's rank correlation</p> <p>(Non-Repeated and Repeated Ranks).</p>                                                                             | <b>Assignment based on Correlation Numericals.</b>                                                                 |
|             | 3.c                             | <p><b>Introduction to Index Numbers</b> - meaning, types - Wholesale price index, Consumer price index and Index of Industrial production, uses of index numbers; Inflation and Index numbers.</p>                                                                                                     | <b>Assignment based on Index Number Numericals</b>                                                                 |
| JAN/<br>FEB | <b>Revision for Annual Exam</b> |                                                                                                                                                                                                                                                                                                        |                                                                                                                    |

SUBJECT: PAINTING (049)  
SYLLABUS BOOK - FULLMARKS  
HISTORY OF INDIAN ART

| <b>MONTH<br/>&amp;<br/>UNITS</b> | <b>THEORY (ALL<br/>TOPICS)</b>                                                                                                                                                                   | <b>PRACTICAL</b>                                                             |
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| <b>APRIL -</b>                   | <p>Six Limbs of Indian Painting &amp; Fundamentals of Visual Arts (Elements and Principles)</p> <p>Prehistoric Rock Paintings - Introduction</p> <p>Study of the Prehistoric Rock- Paintings</p> | Still life of objects with pencil shading                                    |
| <b>MAY -</b>                     | <p>Introduction &amp; Prehistoric Rock Paintings and Art of Indus Valley:</p> <p>2. Art of Indus Valley - Introduction</p> <p>3. Study of the Artefacts of this period</p>                       | Still life of objects with pencil shading                                    |
| <b>JULY</b>                      | <p>Buddhist, Jain and Hindu Art:</p> <p>1. The Art during Mauryan, Shunga, Kushana and Gupta Periods.</p>                                                                                        | Painting composition- imaginative painting based on subjects from daily life |
| <b>AUGUST –</b>                  | .The Art of Ajanta Caves                                                                                                                                                                         | Painting composition- imaginative painting based on subjects from daily life |

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| <b>SEPTEMBER</b> | 1. Artistic Aspects of Indian Temple Sculptures - Introduction<br><br>2 Study of Temple-Sculptures | Object and drawing composition and drawing |
| <b>OCTOBER</b>   | 1. Artistic Aspects of Indian Bronzes Sculptures                                                   | Illustration, still life                   |

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| <b>NOVEMBER</b> | Temple Sculptures, Bronzes and Artistic Aspects of Indo- Islamic Architecture: | Nature and objects study                     |
| <b>DEC</b>      | Revision of entire syllabus                                                    | Nature study (outdoor), Portfolio Assessment |







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| <b>AUGUST</b>   | <b>UNIT V :<br/>PHYSICAL FITNESS<br/>HEALTH &amp;<br/>WELLNESS</b>                               | <p>Meaning &amp; Importance of Physical Fitness, Health &amp; Wellness</p> <p>Components &amp; Dimensions of Physical Fitness, Health &amp; Wellness</p> <p>Traditional Sports and Regional Games for promoting wellness</p> <p>Leadership through Physical Activities &amp; sports</p> <p>Introduction to first Aid-Price</p>           | <b>Flexibility Test Activity</b> 🧘            |
| <b>OCTOBER</b>  | <b>UNIT VI:<br/>TEST,<br/>MEASUREMENT &amp;<br/>EVALUATION</b>                                   | <p>Concept of Test, Measurement &amp; Evaluation in Physical Education</p> <p>Classification of Test in Physical Education &amp; Sports</p> <p>Test administration guidelines in Physical Education</p> <p>Calculation of BMI &amp; Waist - Hip Ratio, Skin Fold Ratio</p> <p>Somato Types (Endomorphy, Mesomorphy &amp; Ectomorphy)</p> | <b>SAI Khelo India Fitness Test</b>           |
|                 |                                                                                                  | Measurement of Health Related Fitness                                                                                                                                                                                                                                                                                                    |                                               |
| <b>NOVEMBER</b> | <b>UNIT VII:<br/>FUNDAMENTALS OF<br/>ANATOMY, PHYSIOLOGY<br/>&amp; KINESIOLOGY IN<br/>SPORTS</b> | <p>Definition and Importance of Anatomy,</p> <p>Physiology in exercises &amp; sports</p> <p>Functions of Skeleton System, Classification of Bones &amp; Types of Joints</p>                                                                                                                                                              | <b>Muscle Movement Observation Activity</b> 🧘 |

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|                 | <p><b>UNIT VIII:</b></p> <p><b>FUNDAMENTALS OF KINESIOLOGY AND BIOMECHANICS IN SPORT</b></p> | <p>Functions &amp; Structure of Circulatory System &amp; HEART</p> <p>Functions &amp; Structure of Respiratory System.</p> <p>Properties &amp; Functions of Muscles</p> <p>Definition Importance of Kinesiology &amp; Biomechanics in Sports</p> <p>Principles of Biomechanics</p> <p>Types of Body movement – Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination &amp; Pronation</p> <p>Kinetic Kinematic in Sports</p> <p>Axis and Planes – Concept &amp; its Application in body movements</p> | <p><b>Throwing Angle Activity</b></p>   |
| <b>DECEMBER</b> | <p><b>UNIT IX :</b></p> <p><b>PSYCHOLOGY &amp; SPORTS</b></p>                                | <p>Definition &amp; Importance of Psychology in Physical Education &amp; Sports</p> <p>Team Cohesion and sports</p> <p>Developmental Characteristics at Different Stages of Development</p> <p>Adolescent Problems &amp; their Management</p> <p>Introduction to Psychological Attributes, Attention, Resilience, Mental toughness</p>                                                                                                                                                                                       | <p><b>Reaction Time Activity</b></p>  |

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| JANUARY | <b>UNIT X :</b><br><br><b>TRAINING AND DOPING IN SPORTS</b> | <p>Concept AND Principles of Sports Training</p> <p>1 Training Load : Over Load, Adaptation And Recovery</p> <p>Warming up</p> <p>Limbering down types</p> <p>method and importance.</p> <p>Concept of skill</p> <p>Technique &amp; Style</p> <p>Concept of Doping and its disadvantage</p> <p>Concept of Skill, Technique, Tactics &amp; Strategies</p> | <b>Endurance Running Activity</b>  |
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## POLITICAL SCIENCE

### BOOK-1: - INDIAN CONSTITUTION AT WORK BOOK-2: - POLITICAL THEORY

| MONTH        | Chapter No: & Name                                                                    | Subtopics                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                              |
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| <b>APRIL</b> | Chapter 5 – 5 Legislature<br><br>(BOOK-1- - INDIAN<br>CONSTITUTION AT<br>WORK)        | <p>Topics to be focused on:</p> <p>a) Why do we need a parliament?</p> <p>b) Why do we need two houses of parliament? ·<br/>Rajya Sabha · Lok Sabha</p> <p>c) What does the parliament do? ·<br/>Powers of Rajya Sabha ·<br/>Special Powers of Rajya Sabha</p> <p>d) How does the parliament make laws?</p> <p>e) How does the parliament control the executive?</p> <p>f) What do the committees of parliament do?</p> <p>g) How does the parliament regulate itself?</p> | <p>Students create a flowchart showing how a bill becomes a law.</p> <p>Mock parliament discussion on a proposed school rule.</p>                                                                                                            |
| <b>MAY</b>   | Chapter 1 - Political Theory: An Introduction<br><br>(BOOK-2-<br>POLITICAL<br>THEORY) | <p>Topics to be focused on:</p> <p>a) What is politics?</p> <p>b) What do we study in political theory?</p> <p>c) Putting Political theory into practice</p> <p>d) Why should we study political theory?</p>                                                                                                                                                                                                                                                               | <ol style="list-style-type: none"> <li>Students list five examples from daily life that involve politics and discuss why they are political.</li> <li>Think–Pair–Share: “Why do we need political theory to understand politics?”</li> </ol> |

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|  | <p>Chapter-1-<br/>Constitution: Why and How?</p> <p>(BOOK-1- - INDIAN CONSTITUTION AT WORK)</p> | <p>Topics to be Focused:</p> <p>Why do we need a constitution?</p> <ul style="list-style-type: none"> <li>● Constitution allows coordination and assurance</li> <li>● Specification of decision-making powers</li> <li>● Limitations on the powers of government</li> <li>● Aspirations and goals of a society ● Fundamental identity of a people</li> </ul> <p>The authority of a constitution</p> <ul style="list-style-type: none"> <li>● Mode of promulgation</li> <li>● The substantive provisions of a constitution</li> <li>● Balanced institutional design</li> </ul> | <ol style="list-style-type: none"> <li>1. Draft a mini constitution for the classroom including rights and rules.</li> <li>2. Role play of a Constituent Assembly discussion on important rights.</li> </ol>                          |
|  | <p>Chapter 2 – Freedom</p> <p>(BOOK-2- - POLITICAL THEORY)</p>                                  | <ul style="list-style-type: none"> <li>● The Ideal of Freedom</li> <li>● The sources of Constraints-Why do we need constraints?</li> <li>● The Harm Principle</li> <li>● Negative and Positive Liberty</li> </ul>                                                                                                                                                                                                                                                                                                                                                             | <ol style="list-style-type: none"> <li>1. Students prepare a chart showing Positive Freedom and Negative Freedom with examples.</li> <li>2. Group discussion on situations where freedom may need reasonable restrictions.</li> </ol> |

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| <p><b>JULY</b></p> | <p>Chapter 3- Election and Representation</p> <p>(BOOK-1- - INDIAN CONSTITUTION AT WORK)</p> <p>Chapter-3- Equality</p> <p>(BOOK-2- POLITICAL THEORY)</p> | <p>(i) Topics to be focused.</p> <p>a) Elections and democracy</p> <p><b>b) Election system in India · First Past the Post System · Proportional Representation</b></p> <p>c) Why did India adopt the FPTP system?</p> <p>d) Reservation of constituencies</p> <p><b>e) Free and fair elections · Universal franchise and right to contest · Independent Election Commission</b></p> <p>f) Electoral Reforms.</p> <p>Topics to be focused on.</p> <p>a) Why does equality matter?</p> <ul style="list-style-type: none"> <li>● Equality of opportunities</li> <li>● Natural and Social Inequalities</li> </ul> <p>b) Three dimensions of equality</p> <p>c) Feminism, Socialism</p> <p>d) How can we promote equality?</p> | <ol style="list-style-type: none"> <li>1. Conduct a mock election in the classroom using a secret ballot.</li> <li>2. Students design an election campaign poster for a candidate.</li> </ol> <ol style="list-style-type: none"> <li>1. Students create a mind map showing types of equality: social, economic and political.</li> <li>2. Classroom debate: “Equality of opportunity is more important than equality of outcome.”</li> </ol> |
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|         |                                                                   | b)Just distribution<br>c)John Rawls’s Theory of Justice<br>d) Pursuing Social Justice e)<br>Free Markets versus State Intervention                                                                                                                                                                                                                                                                                      |                                                                                                                                            |
| OCTOBER | Chapter-6- Judiciary<br><br>(BOOK-1- INDIAN CONSTITUTION AT WORK) | Topics to be focused.<br>a) Why do we need an independent judiciary? ·<br>Independence of Judiciary ·<br>Appointment of Judges · Removal of Judges<br><br>b) Structure of the Judiciary<br>c) Jurisdiction of supreme Court ·<br>Original Jurisdiction · Writ Jurisdiction ·<br>Appellate Jurisdiction ·<br>Advisory Jurisdiction<br><br>d) Judicial Activism<br>e) Judiciary and Rights<br>f) Judiciary and Parliament | 1. Students perform a mock court activity with judge, lawyers and witnesses.<br><br>2. Students list important functions of the judiciary. |
|         | Chapter-5- Rights<br>(BOOK-2- POLITICAL THEORY)                   |                                                                                                                                                                                                                                                                                                                                                                                                                         | 1. Students list important rights they enjoy in society and explain their importance.                                                      |

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| <b>NOVEMBER</b> | Chapter-9- Constitution as a Living Document<br><br>(BOOK-1- INDIAN CONSTITUTION AT WORK)   | Topics to be focused: -<br><br>a) Are constitutions static?<br>b) How to amend the constitution?<br>c) Why have there been so many amendments?<br>d) Contents of amendments made so far<br>e) Differing Interpretations<br>f) Amendments through<br>g) Political Consensus<br>h) Controversial Amendments | 1.Students research one constitutional amendment and present its importance.<br><br>2.Students create a timeline of major constitutional amendments.                      |
| <b>DECEMBER</b> | Chapter-8- Secularism<br><br>(BOOK-2- POLITICAL THEORY)                                     | a) What is Secularism?<br><br>• Inter-religious Domination • Intra-religious Domination<br><br>b) Secular State<br>c) The Western model of secularism The Indian model of secularism<br>d) Criticisms of Indian Secularism • Western Import • Minoritism • Interventionist • Vote Bank Politics           | 1.Students prepare a table comparing Indian secularism and Western secularism.<br><br>2.Situation analysis: Discuss how the government should handle religious conflicts. |
| <b>JANUARY</b>  | Chapter-10- The Philosophy of the Constitution<br><br>(BOOK-1- INDIAN CONSTITUTION AT WORK) | a) What is meant by the philosophy of the Constitution? .<br>Constitution as Means of Democratic Transformation<br><br>b) Why do we need to go back to the Constituent Assembly?<br><br>c) What is the political philosophy of our constitution?                                                          | 1.Students analyze key values in the Preamble: Justice, Liberty, Equality and Fraternity.<br><br>2.Students create a poster representing constitutional values.           |

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|  |             | <div>· Individual freedom ·<br/>Social Justice ·<br/>Respect for<br/>diversity and<br/>minority rights ·<br/>Secularism</div> |  |
|  | BOOKS 1 & 2 | COMPLETE REVISION OF<br>THE SYLLABUS                                                                                          |  |

**SUBJECT-SYLLABUS YOGA (SUBJECT CODE - 841)**

| <b>MONTH</b>     | <b>CHAPTER /BOOK<br/>/MAIN SKILL<br/>UNIT/TOPICS</b> | <b>UNIT/TOPIC</b>                                                |                                                     |
|------------------|------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------|
| <b>APRIL</b>     | <b>Subject Specific Skills</b>                       | <b>Unit 1 – Introduction to<br/>Yoga and Yogic Practices - I</b> | <b>Practice of<br/>different<br/>Aashan</b>         |
| <b>MAY</b>       | <b>Employability Skills</b>                          | <b>Unit 1 : Communication<br/>Skills- IV</b>                     | <b>Role Play on<br/>communicatio<br/>n barriers</b> |
| <b>JULY</b>      | <b>Subject Specific Skills</b>                       | <b>Unit 2 – Introduction to<br/>Yoga Texts -</b>                 | <b>Practice of<br/>different Yoga<br/>form</b>      |
| <b>AUGUST</b>    | <b>Employability Skills</b>                          | <b>Unit 2 : Self-<br/>Management Skills-<br/>IV</b>              |                                                     |
| <b>SEPTEMBER</b> | <b>1st term examination</b>                          |                                                                  |                                                     |
| <b>OCTOBER</b>   | <b>Employability Skills</b>                          | <b>Unit 3 – Yoga for Health<br/>Promotion - I</b>                | <b>Project file<br/>based on<br/>chapter</b>        |
| <b>NOVEMBER</b>  | <b>Employability Skills</b>                          | <b>Unit 3 : ICT Skills- IV</b>                                   | <b>Assignment</b>                                   |
| <b>DECEMBER</b>  | <b>Employability Skills</b>                          | <b>Unit 4 : Entrepreneurial<br/>Skills- IV</b>                   | <b>Assignment</b>                                   |
| <b>JANUARY</b>   | <b>Employability Skills</b>                          | <b>Unit 5 : Green Skills- IV</b>                                 | <b>Plantation<br/>activity</b>                      |

**Subject: Hindustani Percussion Instruments**

| Month     | Chapter and sub-topic                                                                         | Activity                              |
|-----------|-----------------------------------------------------------------------------------------------|---------------------------------------|
| April     | Lay and Teentaal, dugun, chaigun, life sketch of Kudau Singh maharaj                          | Practice on Tabla and Padhant on hand |
| May       | Sangeet, Jhaptaal and Ektaal, Kayda in Teentaal                                               | Practice on Tabla and Padhant on hand |
| July      | Kala, some paltas and Tihai of Kayda in Teentaal, tukra in Teentaal                           | Practice on Tabla and Padhant on hand |
| August    | Banaras gharana, Bedum Tihai, Chakkardar Tukra                                                | Practice on Tabla and Padhant on hand |
| September | Revision                                                                                      |                                       |
| October   | Natyashastra with special reference to Awanadya Vadya, Kayda with Palta and Tihai in Jhaptaal | Practice on Tabla and Padhant on hand |
| November  | Life sketch of Nana Panse, Rela in Teentaal                                                   | Practice on Tabla and Padhant on hand |
| December  | Kudau Singh gharana, Rela, Tukra in Jhaptaal                                                  | Practice on Tabla and Padhant on hand |
| January   | Sadharan and chakkardar Paran in Teentaal, Sultaal                                            | Practice on Tabla and Padhant on hand |
| February  | Revision                                                                                      |                                       |

**Reference Book: Introduction to computer science by Preeti Arora**

| Month | Unit No/Chapter No                                     | Topic & Subheadings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Activity                                                                                                                                                                                                                          |
|-------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| April | Unit II:<br>Computational Thinking and Programming - I | <ul style="list-style-type: none"> <li>· 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</li> <li>· 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</li> <li>· Knowledge of data types: number (integer, floating point,</li> </ul>      | <p>Give students a daily-life problem like <b>“Making Tea” or “Withdrawing Money from ATM.”</b></p> <p>Students create <b>step-by-step algorithms and flowcharts</b>.</p> <p>They present and explain the logic to the class.</p> |
|       |                                                        | <p>complex), Boolean, sequence (string, list, tuple), none, mapping (dictionary), mutable and immutable data types</p> <p>Operators: arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators (is, is not), membership operators (in, not in)</p> <ul style="list-style-type: none"> <li>· Expressions, statement, type conversion &amp; input/output: precedence of operators, expression, evaluation of expression, python statement, type conversion (explicit &amp; implicit conversion), accepting data as input from the console and displaying output</li> <li>· Errors: syntax errors, logical errors, runtime errors</li> </ul> |                                                                                                                                                                                                                                   |

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|------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| May  | Unit II:<br>Computational Thinking and Programming - I | <ul style="list-style-type: none"> <li>· Flow of control: introduction, use of indentation, sequential flow, conditional and iterative flow control</li> <li>· Conditional statements: if, if-else, if-elif-else; simple programs: e.g.: absolute value, sort 3 numbers, divisibility.</li> <li>· 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.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>Students write a simple <b>Python program for calculating marks and grade.</b></p> <p>They test different inputs and identify <b>syntax and logical errors.</b></p> <p><b>Number Guessing Game using Python.</b></p> <p>Students create a program using <b>if-else and loops.</b></p>                                                  |
| July | Unit II:<br>Computational Thinking and Programming - I | <ul style="list-style-type: none"> <li>· Strings: introduction, indexing, string operations (concatenation, repetition, membership &amp; slicing), traversing a string using loops, built-in functions: Len(), capitalize(), title(), lower(), upper(), count(), find(), index(), ends with(), starts with(), isalnum(), is alpha(), is digit(), is lower(), is upper(), is space(), strip(), strip(),</li> <li>strip(), replace(), join(), partition(), split().</li> <li>· Lists: introduction, indexing, list operations (concatenation, repetition, membership &amp; 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</li> </ul> | <p>Password Validator Activity<br/>Students create a <b>simple password checker.</b></p> <p>Create a <b>list of students' marks</b> and write a program to find <b>highest, lowest and average marks.</b></p> <p>Classroom Attendance Activity<br/>Students create a list of <b>student names present in class</b> using python code.</p> |



|      |                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                       |
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| Aug  | Unit II:<br>Computational<br>Thinking and<br>Programming -<br>I | <ul style="list-style-type: none"> <li>· Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership and slicing); built-in functions/methods – 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.</li> <li>· Dictionary: introduction, accessing items in a dictionary using keys, mutability of a dictionary (adding a new term, modifying an existing item), traversing a dictionary, built-in functions/methods – Len(), dict(), keys(), values(), items(), get(), update(), del(), del, clear(), from keys(), copy(), pop(), pop item(), set default(), max(), min(), sorted(); 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.</li> </ul> | <p>Frequency Counter Activity</p> <p><b>Student Information Activity</b></p> <p><b>Objective:</b> Understand dictionary creation and accessing values using keys.</p> |
| Sept | TERM-1                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                       |
| Oct  | Unit II:<br>Computational<br>Thinking and<br>Programming -<br>I | <ul style="list-style-type: none"> <li>· Introduction to Python modules: Importing module using ‘import ’ and using from statement, importing math module (pi, e, sqrt(), ceil(), floor(), pow(), fabs(), sin(), cos(), tan()); random module (random(), ran dint(), Rand range()), statistics module (mean(), median(), mode()).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p><b>Geometry Calculator Activity (Math Module)</b></p> <p><b>Objective:</b> Learn to use math module functions like pi, sqrt(), pow().</p>                          |

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| Nov | Unit 1:<br>Introduction of<br>Computer<br>System | <p>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),</p> <p>programming tools and language translators (assembler, compiler &amp; interpreter), application software. Operating system (OS): functions of operating system, OS user interface</p> <p>Boolean logic: NOT, AND, OR, NAND, NOR XOR, truth table, De Morgan's laws and logic circuits</p> <p>Number system: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems.</p> | <p><b>Software Classification Activity</b></p> <p><b>Topic:</b> Types of Software</p> <p><b>Operating System Role Play</b></p> <p><b>Topic:</b> Functions of Operating System</p> |
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|     |                                         | <ul style="list-style-type: none"> <li>· Encoding schemes: ASCII, ISCII and UNICODE (UTF8, UTF32).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                      |
| Dec | Unit III:<br>Society, Law<br>and Ethics | <ul style="list-style-type: none"> <li>· Digital Footprints</li> <li>· Digital society and Netizen: net etiquettes, communication etiquettes, social media etiquettes</li> <li>· Data protection: Intellectual Property Right (copyright, patent, trademark), violation of IPR (plagiarism, copyright infringement, trademark infringement), open source software and licensing (Creative Commons, GPL and Apache)</li> <li>· Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber crime</li> <li>· Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying.</li> <li>· Safely accessing web sites: malware, viruses, trojans, adware</li> <li>· E-waste management: proper disposal of used electronic gadgets</li> <li>· Indian Information Technology Act (IT Act)</li> </ul> | <p><b>Digital Footprint Awareness Activity</b></p> <p><b>Topic:</b> Digital Footprints</p> <p><b>Netiquette Role Play</b></p> <p><b>Topic:</b> Digital Society and Netizen</p> <p><b>Intellectual Property Rights Case Study</b></p> |

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|     |               | <ul style="list-style-type: none"> <li>Technology &amp; Society: Gender and disability issues while teaching and using computers</li> </ul> | <b>Topic:</b> Data Protection & IPR                                              |
| Jan | Project       | Project in Computer science(submission) Revision of the syllabus and lab practice                                                           | One individual project needs to be submitted on the basis of topics in syllabus. |
| Feb | <b>TERM 2</b> |                                                                                                                                             |                                                                                  |

**SUBJECT: BIOLOGY**

**TEXT BOOK PRESCRIBED: NCERT**

| <b>MONTH</b> | <b>CHAPTER</b>                                                                                                                                               | <b>TOPICS AND SUB -TOPICS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>ACTIVITY</b>                                                                                                                                                  |
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| <b>APRIL</b> | <b>Chapter-5:</b><br>Morphology of flowering plants                                                                                                          | Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of family Solanaceae.<br><b>Practicals: 1.</b> To study the vegetative & floral characteristics of Solanaceae families.                                                                                                                                                                                                                                                                                                                                                    | Study different leaf types and venation patterns.                                                                                                                |
| <b>MAY</b>   | <b>Chapter-6:</b><br>Anatomy of flowering plants<br><br><b>Chapter-7:</b><br>Structural Organization in Animals<br><br><b>Chapter-1:</b><br>The Living World | Anatomy and functions of tissue systems in dicots and monocots. Difference between dicot and monocot root, dicot and monocot stem, dorsiventral and isobilateral leaf.<br><br>Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog.<br><br>Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature.<br><br><b>Practicals:</b><br>1. To prepare a temporary slide of T.S. of dicot root, monocot root, dicot stem and monocot stem. | Observe monocot and dicot stem sections.<br><br>Identify animal tissues from prepared slides.<br><br>Prepare a biodiversity list of organisms around the school. |

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| <b>JULY</b> | <b>Chapter-2:</b><br>Biological<br>Classification | Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroid.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Observe pond water microorganisms under a microscope. |
|             | <b>Chapter-3:</b> Plant<br>Kingdom                | Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnosperms and Angiosperms.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Prepare a small herbarium of different plant groups.  |
|             | <b>Chapter-4:</b><br>Animal Kingdom               | <p>Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level (salient features and few examples of each category). (No live animals or specimens should be displayed.)</p> <p><b>Practicals:</b></p> <p>1. 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.</p> <p>2. Virtual specimens/slides/models and identifying features of - Amoeba, Hydra, liver fluke, Ascaris, leech, earthworm, prawn, silkworm, honeybee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.</p> | Make a chart classifying animals into phyla.          |

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| <b>AUGUST</b>    | <b>Chapter-8:</b> Cell-<br>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. | Observe onion peel cells under a microscope.         |
|                  | <b>Chapter-9:</b><br>Biomolecules                     | Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, and nucleic acids; Enzyme - types, properties, enzyme action. (Topics excluded: Nature of Bond Linking Monomers in a Polymer, Dynamic State of Body Constituents – Concept of Metabolism, Metabolic Basis of Living, The Living State).                                                                        | Test food samples for starch, protein, and fats.     |
|                  | <b>Chapter-10:</b> Cell<br>Cycle and Cell<br>Division | Cell cycle, mitosis, meiosis and their significance.<br><br><b>Practicals:</b><br><b>1.</b> Mitosis in onion root tip cells and animals' cells (grasshopper) from permanent slides.                                                                                                                                                                                                                                            | Identify stages of mitosis in onion root tip slides. |
| <b>SEPTEMBER</b> |                                                       | <b>TERM - I EXAMINATION</b>                                                                                                                                                                                                                                                                                                                                                                                                    |                                                      |

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| <b>OCTOBER</b> | <b>Chapter-11:</b><br>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. | Perform a starch test to show photosynthesis.                |
|                | <b>Chapter-12:</b><br>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.                                                                                                      | Demonstrate CO <sub>2</sub> release using germinating seeds. |
|                | <b>Chapter-13:</b><br>Plant- Growth and Development   | Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; plant growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.                                                             | Observe phototropism in a potted plant.                      |

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| <b>NOVEMBER</b> | <b>Chapter-14:</b><br>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.                                                                                           | Compare breathing rates before and after exercise. |
|                 | <b>Chapter-15:</b><br>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.                                      | Measure pulse rate during different activities.    |
|                 | <b>Chapter-16:</b><br>Excretory Products and their Elimination | Modes of excretion - ammoniotelic, 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 - uraemia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant. | Create a simple kidney filtration model.           |



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| <b>DECEMBER</b>             | <b>Chapter-17:</b><br>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.                                                                                                                                                                                   | Observe movements of different body joints. |
|                             | <b>Chapter-18:</b><br>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.                                                                                                                                                                                                                                                                                                | Perform a ruler drop reaction-time test.    |
|                             | <b>Chapter-19:</b><br>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, goitre, exophthalmic goitre, diabetes, Addison's disease. Note: Diseases related to all the human physiological systems to be taught in brief. | Role-play endocrine glands and hormones.    |
| <b>JANUARY and FEBRUARY</b> |                                                             | <b>Revision for Annual Examination</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                             |

**INVESTIGATORY PROJECT:** One investigatory project has to be done by each student independently.

SUBJECT- PHYSICS

Textbook: N.C.E.R.T PART 1 AND 2

| MONTH | UNIT                                                                                     | TOPIC/SUBTOPIC                                                                                                                                                                                                                                                                                                                                                                                         | ACTIVITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| JULY  | <b>UNIT I</b><br>(Physical World and Measurements)<br><br><b>UNIT II</b><br>(Kinematics) | ❖ Fundamental & Derived Units<br>❖ Dimensional Analysis Error Analysis<br>❖ Significant Figures, rules of Rounding Up & mathematical operations involving significant figures.<br>❖ Uniform Motion<br>❖ Formulae for Uniform Motion<br>❖ Position- Time & Velocity-Time Graphs<br>❖ Relative Velocity in One Dimensional Motion<br>❖ Uniformly Accelerated Motion<br>❖ Equations of Accelerated Motion | <p><b>Activity: Measurement Lab</b></p> <ul style="list-style-type: none"> <li>• Give students different objects (book, pen, table).</li> <li>• Ask them to measure <b>length, mass, and time</b> using scale, balance, and stopwatch.</li> <li>• Calculate <b>average value and percentage error</b>.</li> </ul> <p><b>Learning Outcome:</b><br/>Students understand <b>accuracy, precision, and error in measurement</b>.</p> <p><b>Activity: Distance–Time Graph Experiment</b></p> <ul style="list-style-type: none"> <li>• Students walk in a straight line at different speeds.</li> <li>• One student records <b>distance and time</b>.</li> <li>• Plot a <b>distance–time graph</b> on graph paper.</li> </ul> <p><b>Learning Outcome:</b><br/>Students understand <b>uniform and non-uniform motion</b>.</p> |

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| AUG | <p><b>UNIT II</b><br/>(Kinematics to conclude)</p> <p><b>UNIT III</b><br/>(Laws of Motion)</p> | <ul style="list-style-type: none"> <li>❖ Addition &amp; Multiplication of Vectors</li> <li>❖ Motion in a plane: Projectile &amp; Circular motion.</li> <li>❖ Newton's Laws of Motion</li> <li>❖ Friction and Dynamics of Uniform Circular Motion</li> </ul> | <p><b>Activity: Projectile Motion Demonstration</b></p> <ul style="list-style-type: none"> <li>● Throw a small ball at an angle.</li> <li>● Students observe the <b>parabolic path</b>.</li> <li>● Discuss <b>horizontal and vertical components of velocity</b>.</li> </ul> <p><b>Learning Outcome:</b><br/>Understanding <b>projectile motion and vectors</b>.</p> <p><b>Activity: Inertia Demonstration</b></p> <ul style="list-style-type: none"> <li>● Place a card on a glass and put a coin on the card.</li> <li>● Flick the card quickly.</li> </ul> <p><b>Observation:</b><br/>Coin falls straight into the glass.</p> <p><b>Learning Outcome:</b><br/>Demonstrates <b>Newton's First Law (Inertia)</b>.</p> |
| SEP |                                                                                                | <ul style="list-style-type: none"> <li>❖ Revision</li> <li>❖ 1<sup>st</sup> Term Examination</li> </ul>                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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| OCT | <p><b>UNIT IV</b><br/>(Work, Energy &amp; Power)</p> <p><b>UNIT V</b><br/>(Systems of particles &amp; Rotational Motion)</p> | <ul style="list-style-type: none"> <li>❖ Work, Energy &amp; Power</li> <li>❖ Collisions</li> <li>❖ Centre of Mass and Rotational Mechanics</li> <li>❖ Moment of Inertia</li> </ul>                                                                                                                 | <p><b>Activity: Energy Conversion</b></p> <ul style="list-style-type: none"> <li>● Use a <b>rubber band launcher</b> to shoot a paper ball.</li> <li>● Stretch rubber band and release.</li> </ul> <p><b>Discussion:</b><br/>Potential Energy → Kinetic Energy</p> <p><b>System of Particles and Rotational Motion</b></p> <p><b>Activity: Center of Mass</b></p> <ul style="list-style-type: none"> <li>● Ask students to balance a <b>scale or stick on a finger</b>.</li> <li>● Move objects on the stick until it balances.</li> </ul> <p><b>Learning Outcome:</b><br/>Understanding <b>center of mass and equilibrium</b>.</p> |
| NOV | <p><b>UNIT VI</b><br/>(Gravitation)</p> <p><b>UNIT VII</b><br/>(Properties of Bulk Matter)</p>                               | <ul style="list-style-type: none"> <li>❖ Newton's Law of Gravitation</li> <li>❖ Gravitational potential and potential energy</li> <li>❖ Launching of Artificial Satellites</li> <li>❖ Geo-stationary Satellites</li> <li>❖ Elasticity (solids)</li> <li>❖ Hydrostatics (Fluids at rest)</li> </ul> | <p><b>Activity: Free Fall Demonstration</b></p> <ul style="list-style-type: none"> <li>● Drop a paper and a coin together.</li> <li>● Then crumple the paper and drop again.</li> </ul> <p><b>Observation:</b><br/>Air resistance affects motion.</p> <p><b>Learning Outcome:</b><br/>Concept of <b>gravitational acceleration</b>.</p> <p><b>Activity: Elasticity Test</b></p> <ul style="list-style-type: none"> <li>● Hang weights on a <b>rubber band or spring</b>.</li> <li>● Measure extension.</li> </ul>                                                                                                                   |

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|     |                                                                              |                                                                                                                                                                                                                                                                                                                 | <b>Learning Outcome:</b><br>Understand <b>Hooke's Law</b> and elasticity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| DEC | <b>UNIT VII</b><br>(to conclude)<br><br><b>UNIT VIII</b><br>(Thermodynamics) | ❖ Hydrodynamics<br>(Fluids in motion)<br>❖ Thermal properties<br>& Heat transfer<br>❖ Zeroth Law and<br>Thermodynamic<br>processes; Work done in<br>isothermal and adiabatic<br>processes<br><br>1 <sup>st</sup> Law of<br>thermodynamics and its<br>applications<br>❖ 2 <sup>nd</sup> Law of<br>Thermodynamics | <b>Mechanical<br/>Properties of<br/>Fluids</b><br><br><b>Activity: Pressure with Depth</b> <ul style="list-style-type: none"> <li>Make holes at different heights in a bottle filled with water.</li> </ul> <b>Observation:</b><br>Water from lower holes comes out farther.<br><br><b>Learning Outcome:</b><br><b>Pressure increases with depth.</b><br><br><b>Activity: Thermal Expansion</b> <ul style="list-style-type: none"> <li>Heat a metal lid in warm water and try to open a tight jar.</li> </ul> <b>Learning Outcome:</b><br>Understanding <b>thermal expansion.</b><br><br><b>Thermodynamic<br/>S</b><br><br><b>Activity: Heat Transfer</b> <ul style="list-style-type: none"> <li>Place a <b>metal spoon</b> and <b>wooden spoon</b> in hot water.</li> </ul> |

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|            |                                                                                                           |                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>● Touch after some time.</li> </ul> <p><b>Learning Outcome:</b><br/>Understanding <b>conduction and insulating materials</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>JAN</b> | <b>UNIT IX</b><br>( Behaviour of Perfect Gas and Kinetic Theory) <b>UNIT X (Oscillations &amp; Waves)</b> | <ul style="list-style-type: none"> <li>❖ Behaviour of Perfect Gas and Kinetic Theory</li> <li>❖ Oscillatory Motion and SHM</li> <li>❖ Waves &amp; Superposition of Waves</li> </ul> | <p><b>Activity: Simple Pendulum</b></p> <ul style="list-style-type: none"> <li>● Make a pendulum using thread and a small weight.</li> <li>● Measure <b>time period for different lengths</b>.</li> </ul> <p><b>Learning Outcome:</b><br/>Relation between <b>length and time period</b></p> <p><b>Activity: Wave Demonstration</b></p> <ul style="list-style-type: none"> <li>● Use a <b>rope or slinky spring</b>.</li> <li>● Create transverse waves.</li> </ul> <p><b>Learning Outcome:</b><br/>Understanding <b>wavelength, amplitude, and frequency</b>.</p> |
| <b>FEB</b> |                                                                                                           | <ul style="list-style-type: none"> <li>❖ Revision</li> <li>❖ Final Examination</li> </ul>                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**SUBJECT: CHEMISTRY**

Textbooks prescribed

- NCERT Textbook Part I & II

| MONTH | CHAPTER                                           | TOPICS                                                                                                                                                                                                                                                                                                                                                                   | ACTIVITIES                                 |
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| APRIL | Unit 1:<br>Some Basic<br>Concepts of<br>Chemistry | General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry. | Mole calculation game.                     |
|       | Unit 2:<br>Structure of<br>Atom                   | Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle.                                            | Raisin Bread Model-Thomson's Atomic Model. |
|       | Practical                                         | Experiment: To determine the melting point of the given organic compound.<br><br>Experiment: To determine the boiling point of the given organic compound.                                                                                                                                                                                                               |                                            |

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| MAY  | Unit 2:<br>Structure of Atom<br>(contd.)                                        | 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.                             | Alpha Particle Scattering Role Play. |
|      | Unit 3:<br>Classification of Elements and Periodicity in Properties             | Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, Nomenclature of elements with atomic number greater than 100. Periodic trends in properties of elements - atomic radii, ionic radii, inert gas radii. | Everyday Elements Investigation.     |
|      | Practical                                                                       | Experiment: Preparation of standard solution of oxalic acid and sodium carbonate.<br><br>Experiment: Volumetric Analysis; acid-base titration                                                                                                                                                         |                                      |
| JULY | Unit 3:<br>Classification of Elements and Periodicity in Properties<br>(contd.) | Periodic trends in properties of elements - Ionization enthalpy, electron gain enthalpy, electronegativity, valency.                                                                                                                                                                                  | Atomic Size Trend Demonstration.     |



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|     | <p>Unit 4:<br/>Chemical Bonding and Molecular Structure</p> <p>Unit 7:<br/>Redox Reactions</p> | <p>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.</p> <p>Molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), Hydrogen bond.</p> <p>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</p> | <p>Covalent Bond Model Making.</p> <p>Polarity Experiment With Water.</p> <p>Activity -Oxidation Of Apple.</p> <p>Displacement Reaction Activity.</p> |
|     | Practical                                                                                      | <p>Experiment: To prepare crystals of copper Sulphate.</p> <p>Experiment: Salt Analysis- detection of group-1 acid radicals</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                       |
| AUG | Unit 5:<br>Thermodynamics                                                                      | <p>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 U and H, Hess's law of constant heat</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p>Feeling Temperature Change (Exothermic &amp; Endothermic Reactions)</p>                                                                            |

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|        |                           | 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). | Real-Life Thermodynamics Study.                                                                                                  |
|        | Practical                 | Experiment: Detection of group-2 and 3 acid radicals Experiment: Salt Analysis- detection of basic radicals                                                                                                                                                                                                                                                                                    |                                                                                                                                  |
| SEPT   | Revision and Term 1 Exams |                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                  |
| TERM 2 |                           |                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                  |
| OCT    | Unit 6: Equilibrium       | Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle.                                                                                                                                                                                                             | Effect Of Concentration On Equilibrium.(Chromate-Dichromate System)<br><br>Simulation Of Equilibrium Using Students (Role Play). |
|        |                           | 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).                                                                            |                                                                                                                                  |
|        | Practical                 | Experiment: Salt Analysis- detection basic radicals                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |

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| NOV | Unit 8:<br>Organic Chemistry –<br>Some Basic principles and Techniques | General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electrometric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.                                                                                                                                                                                                                                                                                                                                                                                                          | Functional Groups Identification Chart.<br><br>Isomers Model Activity.    |
|     | Practical                                                              | Experiment: To determine the pH of different samples of fruit and vegetable juices.<br><br>Project: Investigatory project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                           |
| DEC | Unit 9:<br>Hydrocarbons                                                | Classification of Hydrocarbons<br>Aliphatic Hydrocarbons: Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. Alkenes - Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition. Alkynes - Nomenclature, structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water. Aromatic Hydrocarbons: Introduction, IUPAC | Field Activity (Fuel Around Us).<br><br>Lab Activity (Unsaturation Test). |

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|     |                         | nomenclature, benzene: resonance, aromaticity,                                                                                                                                                                                                   |                                     |
|     | Practical               | Annual Practical Exam                                                                                                                                                                                                                            |                                     |
| JAN | Unit 9:<br>Hydrocarbons | Chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of functional group in monosubstituted benzene. Carcinogenicity and toxicity. | Simple Experiment (Soot Formation). |
|     | Revision                | Revision Work & Final Exam                                                                                                                                                                                                                       |                                     |
| FEB |                         | Final Exam (contd.)                                                                                                                                                                                                                              |                                     |

SUBJECT: Artificial Intelligence  
PRESCRIBED: N.C.E.R.T

**Reference Book: Orange publications**

| MONTH | CHAPTER                                                     | TOPICS                                                                                                                                                  | ACTIVITIES                                                                                                                                      |
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| APRIL | Unit 1 – Introduction: Artificial Intelligence for Everyone | • What is Artificial Intelligence? • Evolution of AI • Types of AI • Domains of AI • AI Terminologies • Benefits and limitations of AI                  | AI Domains<br>Exploration Activity<br><br>Benefits vs Limitations<br>Debate                                                                     |
| MAY   | Unit 2 – Unlocking your Future in AI                        | The Global Demand • Some Common Job Roles In AI • Essential Skills and Tools for Prospective AI Careers • Opportunities in AI across Various Industries | AI Career Interview Activity<br><br>Topic: Global Demand for AI Professionals<br><br>AI Startup Idea Activity<br><br>Topic: Opportunities in AI |
| JULY  | UNIT 3 - PYTHON PROGRAMMING                                 | Level 1: Basics of python programming, character sets, tokens, modes, operators,                                                                        | Grade Evaluation Activity                                                                                                                       |

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|                  |                                                  | <b>datatypes, Control Statements Level 2: CSV Files, Libraries – NumPy, Pandas, Scikit-learn</b> | <b>Topic: Control Statements</b><br><br><b>Activity:</b><br><b>Students write a program to assign grades based on marks.</b>                                                                                                                                                                                                                                                                                             |
| <b>AUGUST</b>    | <b>UNIT 4 - INTRODUCTION TO CAPSTONE PROJECT</b> | <b>Design Thinking • Empathy Map • Sustainable Development Goals • Capstone Project</b>          | <b>Empathy Map Activity</b><br><br><b>Topic: Empathy Map</b><br><br><b>Activity:</b><br><b>Students select a user group (students, teachers, parents, or school staff) and create an Empathy Map with four sections:</b> <ul style="list-style-type: none"> <li>● <b>What the user Says</b></li> <li>● <b>What the user Thinks</b></li> <li>● <b>What the user Does</b></li> <li>● <b>What the user Feels</b></li> </ul> |
| <b>SEPTEMBER</b> | <b>Revision and I term</b>                       |                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                          |

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| OCTOBER  | UNIT 5 - DATA LITERACY – DATA COLLECTION TO DATA ANALYSIS | <p>What is Data Literacy? • Data Collection • Exploring Data • Statistical Analysis of data • Representation of data, Python Programs for Statistical Analysis and Data Visualization • Introduction to Matrices • Data Pre-processing • Data in Modelling and Evaluation</p>                                                                    | <p><b>Data Visualization Activity</b></p> <p>Topic: Representation of Data</p> <p>Activity: Students create graphs or charts such as:</p> <ul style="list-style-type: none"> <li>• Bar chart</li> <li>• Pie chart</li> <li>• Line graph</li> </ul>                                              |
| NOVEMBER | UNIT 6 – MACHINE LEARNING ALGORITHMS                      | <p>Machine Learning in a nutshell • Types of Machine Learning • Supervised Learning • Understanding Correlation, Regression, Finding the line, Linear Regression algorithm • Classification – How it works, Types, k – Nearest Neighbour algorithm • Unsupervised Learning • Clustering – How it works, Types, k -means Clustering algorithm</p> | <p><b>Correlation Exploration Activity</b></p> <p>Topic: Correlation</p> <p>Activity: Students collect simple data such as:</p> <ul style="list-style-type: none"> <li>• Study hours vs marks</li> <li>• Exercise time vs fitness level</li> </ul> <p>They observe whether the relationship</p> |

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| DECEMBER | <p>UNIT 7 –<br/>LEVERAGING<br/>LINGUISTICS AND<br/>COMPUTER<br/>SCIENCE</p> <p>UNIT 8 – AI ETHICS<br/>AND VALUES</p> | <p>• Understanding Human Language Complexity •<br/>Introduction to Natural Language Processing (NLP) -<br/>Emotion Detection and Sentiment Analysis,<br/>Classification Problems, Chatbot •<br/>Phases of NLP •<br/>Applications of NLP</p> <p>• Ethics in Artificial Intelligence • The five pillars of AI Ethics •<br/>Bias, Bias Awareness, Sources of Bias •<br/>Mitigating Bias in AI Systems • Developing AI Policies • Moral Machine Game •<br/>Survival of the Best Fit Game</p> | <p><b>Human Language Complexity Activity</b></p> <p>Topic: Understanding Human Language Complexity</p> <p>Activity:<br/>Teacher gives students sentences with multiple meanings, such as:</p> <ul style="list-style-type: none"> <li>• <i>“I saw the man with the telescope.”</i></li> </ul> <p>Students discuss:</p> <ul style="list-style-type: none"> <li>• Different possible meanings of the sentence</li> <li>• Why it is difficult for computers to understand human language</li> </ul> |
| JANUARY  | Project                                                                                                              | Project in AI submission)<br>Revision of the syllabus and lab practice                                                                                                                                                                                                                                                                                                                                                                                                                   | One individual project needs to be submitted on the basis of topics in syllabus.                                                                                                                                                                                                                                                                                                                                                                                                                |
| FEBRUARY | Annual examination                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



