Text Books

Subject	Book	Publication
Core English (301)	Flamingo (Text Book)	NCERT
	Vistas (Supplementary Reader)	NCER
	Novel: The Invisible Man by H. G. Wells	Rachna Sagar
Mathematics (041)	A text book for Class XII Part I & II	NCERT
Physics (042)	A Text Book for Class-XII Part I	NCERT
	A Text Book for Class-XII Part II	NCERT
	Lab Manual	NCERT
Chemistry (043)	A Text Book for Class – XII Part I	NCERT
	A Text Book for Class – XII Part II	NCERT
	Comprehensive – Practical Chemistry Class XII	Laxmi
Biology (044)	A Text Book for Class-XII	NCERT
	Lab Manual	Arya
Computer Science (083)	Computer Science C++ Volume I & II by Sumita Arora	Dhanpat Rai & Sons
Physical Education (048)	Health & Physical Education	Saraswati
	Physical Education Practical File	Saraswati

NOTEBOOKS/STATIONERY

Subject	Register	Practical File/ Graph Book
English (Single Line)	2	-
Mathematics	4	1 (Graph Pad)
Physics	4	1 Record Book by classmate
Chemistry	3	1 Record Book by classmate
Biology	2	-
Computer Science (Single Line)	2	
Physical Education	1	1

English

MONTH: APRIL

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Flamingo - Poem **Writing Skills** **Reading Skills**	Familiarization with the course and marking scheme	**Writing Skills –** • Notice, Poster **Reading Skills** • Note-Making	**Flamingo** • My Mother at Sixty-Six **Flamingo** • The Last Lesson	**Flamingo** • Lost Spring **Writing Skills** • Article	**Novel** • Introduction to the Novel & the Novelist • Chapters 1-3 **Writing Skills** • Invitation **Reading Comprehension**
Learning Objectives	To– • develop proficiency in English both in receptive and productive skills • understand the difference between what is said and what is implied • develop familiarity with the poetic uses of language • write in a style appropriate for communicative purposes				
Expected Learning Outcome	• Understanding the universality of the themes • Social awareness and values • Expand notes into a piece of writing				
Teaching Aids	• PPT, Internet, Newspaper, Reference Book, CBSE Curriculum, Sample Invitation Cards				
Assessment	• Classroom discussions • Writing work as class and home assignment • Reference to context				

MONTH: MAY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Flamingo – Poem, Prose **Vistas – Lessons** **Novel** **Writing Skills**	**Flamingo** • A Thing of Beauty **Writing Skills** • Letter to the Editor	**Flamingo** • Deep Water **Vistas** • The Tiger King	**Vistas** • On the Face of it **Writing Skills** • Invitation - Replies	**Novel** • Chapters 1-3 (Revision) • Chapters 4-7 **Writing Skills**

				• Debate/Speech Writing

Learning Objectives	To - • grasp the global meaning of the text, its gist and understand how its theme and sub-themes relate • assess and analyse the attitude and bias of the author • develop the advanced skills of reasoning, inferring, analysing, evaluating and creating
Expected Learning Outcome	• Understanding human Psychology • Knowledge of satire, humour and irony • Sensitising the students to the people, who are differently-abled • Appropriate format and language for writing skills
Teaching Aids	• PPT, Newspaper, Videos
Assessment	• Classroom discussions • Writing work as class and home assignment • Reference to context

MONTH: JULY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Flamingo – Prose **Vistas – Lesson** **Novel** **Writing Skills**	**Flamingo** • The Rattrap **Writing Skills** • Advertisement	**Novel** • Chapters 8 – 12 **Writing Skills** • Letter (Busi/Off) Making Enquiries	**Vistas** • Memories of Childhood **Novel** • Chapters 13-15 **Writing Skills** • Advertisement	**Flamingo** • Indigo **Writing Skills** • Letter - Asking for and giving information	**CYCLE TESTS**
Learning Objectives	To - • perceive the overall meaning and organisation of the text • identify the main points and supporting details • develop the ability to be logically persuasive in defending one's opinion • explore and evaluate features of character, plot, setting, etc.				
Expected Learning Outcome	• Reading and appreciating the classic/historical events				

	• Understanding the theme, characters and incidents in the novel
	• Focus on answering questions based on text
	• Understanding the social issues
	• Plan, organise and present ideas coherently
Teaching Aids	• PPT, Text Book, Internet, Newspaper
Assessment	• Classroom Discussions
	• Practice of writing skills
	• Written work as class and home assignment

MONTH: AUGUST

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Flamingo **Novel** **Writing Skills**	**Flamingo** • Keeping Quiet **Writing Skills** • Speech	**Novel** • Chapters 16-18 **Writing Skills** • Advertisements	**Novel** • Chapters 19-23 **Writing Skills** • Letter – Job Application	**Novel** • Chapters 24-25 **Writing Skills** • Letter – Placing Orders
Learning Objectives	To - • retrieve and synthesize information from a range of reference material using study skills such as skimming and scanning • develop familiarity with the poetic uses of language • develop the advanced skills of reasoning, inferring, analysing, evaluating and creating			
Expected Learning Outcome	• Understanding the central idea of the poem • Understanding the theme, characters and incidents in the novel • Appropriate format and language for writing skills			
Teaching Aids	• PPT, Newspaper			
Assessment	• Classroom discussion on the portrayal of characters in fiction • Practice of writing skills			

MONTH: SEPTEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Revision **Flamingo - Poem**	**Writing Skills** • Letter – Placing Orders / Complaint	• Revision • Vistas • Flamingo - Prose • Writing skills	**Term –I Exam**	**Term -I Exam**	**Follow-up of TE-1** **Flamingo** • Aunt Jennifer's Tigers
Learning Objectives	To - • consolidate language structures • reflect on the issues related to women and gender bias				
Expected Learning Outcome	• Revision of poem with focus on poetic devices • Appreciating poetry				
Teaching Aids	• Sample Papers, PPT				
Assessment	• Revision work and examination				

MONTH: OCTOBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Vistas - Lesson **Writing Skills** **Flamingo – Peom** **Novel**	**Flamingo** • Aunt Jennifer's Tigers (Contd.) **Vistas** • Evans Tries an O' Level	**Flamingo** • An Elementary School Classroom in a Slum **Novel** • Chapters 26-28	**Vistas** • The Enemy	**Vistas** • The Enemy (Contd.)
Learning Objectives	To - • appreciate and analyse special features of languages that differentiate literary texts from non-literary ones • critically examine a text and comment on different aspects • appreciate figurative use of language in poetry • promote advanced language skills			
Expected Learning Outcome	• Understanding criminal psychology • Appreciation of poem with focus on poetic devices • Appreciating the values of responsibility and humanity			

	• Be logically persuasive in defending one's opinion
Teaching Aids	• PPT, Internet, Videos
Assessment	• Classroom discussion on the portrayal of characters in fiction • Practice of writing skills • Learning values and importance of professional ethics

MONTH: NOVEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Flamingo **Vistas** **Revision**	**Flamingo** • Going Places	Revision	**Pre-Board - I**	**Pre-Board - I**
Learning Objectives	To - • personally respond to literary texts • identify the elements of style such as humour, pathos, satire and irony, etc. • revise the language structures already learnt			
Expected Learning Outcome	• Style of writing by merging two parallel stories • Understanding of human nature and portrayal of characters • Usage of the words and language appropriate for the theme of adolescent hero-worship and fantasy			
Teaching Aids	• PPT, Sample Papers			
Assessment	• Classroom discussion • Practice – Sample Papers			

MONTH: DECEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Pre-Board Examination	**Vistas** • Should Wizard Hit Mommy	Revision	Revision	Revision	**Common Pre-Board**

MONTH: JANUARY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Common Pre-Board	**Common Pre-Board**	**Common Pre-Board**	Revision	Revision

Mathematics

MONTH: APRIL

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 3: Matrices **Chapter 4 :** Determinants **Chapter 1 :** Relations & Functions	Familiarization with the course and marking scheme	• Concept, notation, order, equality, types of matrices • Addition/Subtraction & Scalar multiplication of matrices • Multiplication of Matrices • Transpose of a matrix, Meaning & Properties of Symmetric & Skew-Symmetric Matrix • Concept of Elementary Row & Column Operations	• Concept of Minors & Cofactor, Properties of Cofactors • Adjoint of a Matrix • Inverse of a Matrix • Application of Matrices	• Matrix method • Properties of Determinants	• Types of relations: Reflexive, symmetric, transitive and equivalence relations • One-One and Onto functions • Composite functions
Learning Objective	To enable the students to - • define a Matrix • classify Matrix • critically analyze & evaluate the inverse of matrix • evaluate a determinants using Properties • define & recognize different types of Relations & functions				
Expected Learning Outcome	Students would be able to • define a Matrix • classify Matrix • critically analyze & evaluate the inverse of matrix • apply their knowledge to evaluate a determinants using Properties • define & recognize different types of Relations & functions				
Assessment/ Activity	• Class and Home Assignment • By Detailed Questioning from the Students in Class room Teaching				
Teaching Aids /Resources	• Smart Board, Exemplar NCERT				

MONTH: MAY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 1 : Relations & Functions (Continued) **Chapter 2: Inverse Trigonometric Functions** **Chapter 5: Diffrentiation**	• Inverse of a function. • Binary operations. • Definition, range, domain, principal value branches of inverse trigonometric functions • Graphs of inverse trigonometric functions	• Elementary properties of inverse trigonometric functions. • Continuity of a Function at a point • Differentiability of a Function at a point	• Derivative of composite functions, chain rule, • Derivatives of inverse trigonometric functions • Derivative of implicit functions • Derivatives of logarithmic & exponential functions	• Logarithmic differentiation • Derivative of functions expressed in parametric forms. • Second order derivatives • Rolle's and Lagrange's Mean Value Theorems and their geometric interpretation
Learning Objective	To enable the students to - • understand the definition of a Binary Operation & its Commutativity & Associativity • remember & understand the Principal value braches of inverse trigonometric functions • apply their knowledge to use Elementary properties of inverse trigonometric functions • critically analyze & evaluate the Continuity & Differentiability of a function at a point			
Expected Learning Outcome	Students would be able to • understand the definition of a Binary Operation & its Commutativity & Associativity • remember & understand the Principal value braches of inverse trigonometric functions • apply their knowledge to use Elementary properties of inverse trigonometric functions • critically analyze & evaluate the Continuity & Differentiability of a function at a point			
Assessment/ Activity	• Class and Home Assignment • By Detailed Questioning from the Students in Class room Teaching			
Teaching Aids /Resources	• Smart Board, Exemplar NCERT			

MONTH: JULY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 6: Application of Derivatives **Chapter 7 : Integration**	• Rate of change of Bodies/Quantities • Increasing/decreasing • Functions • Use of derivatives in approximation	• Tangents and Normals • Concept of Maxima & Minima • Application of Maxima & Minima	• Concept of Integration • Integration of the Polynomial Functions • Integration of a variety of functions by substitution • Integration of the Trigonometric Functions	Revision	**CYCLE TESTS**
Learning Objective	To enable the students to - • execute the Knowledge for the Applications of Derivatives • relate the concept of Differentiation with concept of Integration • critically analyze & evaluate the Integration of Different functions				
Expected Learning Outcome	Students would be able to – • execute their Knowledge for the Applications of Derivatives • relate the concept of Differentiation with concept of Integration • critically analyze & evaluate the Integration of Different functions				
Assessment/ Activity	• Class and Home Assignment • By Detailed Questioning from the Students in Class room Teaching				
Teaching Aids /Resources	• Smart Board, Exemplar NCERT				

MONTH: AUGUST

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 7: Integration **Chapter 8 : Application of Integrals**	• Discussion of the Question Paper of Mid-Term Exam • Integration on the basis of Standard Formulas • Integration by Partial Fractions	• Integration by Parts • Definite integrals as a limit of a sum • Fundamental Theorem of Calculus & its application	• Basic properties of definite integrals and evaluation of definite integrals	• Applications in finding the area under simple curves especially lines, circles / parabolas /ellipses (in standard form only) • Area between the two above said curves

Learning Objective	To enable the students to – • describe various methods of integration • understand the Geometrical Interpretation of Definite Integrals • memorize & critically analyze various of Properties of Definite Integrals • relate their knowledge & understanding with the applications of integrals
Expected Learning Outcome	Students would be able to • describe various methods of integration • understand the Geometrical Interpretation of Definite Integrals • memorize & critically analyze various of Properties of Definite Integrals • relate their knowledge & understanding with the applications of integrals
Assessment/ Activity	• Class and Home Assignment • By Detailed Questioning from the Students in Class room Teaching
Teaching Aids /Resources	• Smart Board, Exemplar NCERT

MONTH: SEPTEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 9 : Diffrential Equations	• Definition, order and degree of a Differential Equation • Meaning of General and particular solutions of a differential equation, • Formation of differential equation whose general solution is given	Revision	**Term -I Exam**	**Term –I Exam**	Discussion of the Question Paper of Term-I Exam
Learning Objective	To enable the students to - • understand the concept of L.P.P. • relate their knowledge & understanding with the applications of L.P.P. • define the differential equation • formulate the differential equation of an equation				

Expected Learning Outcome	Students would be able to-
	• understand the concept of L.P.P.
	• relate their knowledge & understanding with the applications of L.P.P.
	• define the differential equation
	• formulate the differential equation of an equation
Assessment/ Activity	• Class and Home Assignment
	• By Detailed Questioning from the Students in Class room Teaching
Teaching Aids /Resources	• Smart Board, Exemplar NCERT

MONTH: OCTOBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 9 : Diffrential Equations **Chapter 10 : Vectors**	• Solution of a Differential Equation by separating the variables • Solution of a Homogeneous Differential Equation • Solution of a Linear Differential Equation & an Irreducible Differential Equation	• Vectors and scalars, magnitude and direction of a vector, • Types of vectors, • d.r. & d.c's of a vector • Components of a vector, addition of vectors, multiplication of a vector by a scalar, • Position vector of a point dividing a line segment in a given ratio • Scalar (dot) product of Vectors	• Vector (cross) product of vectors • Scalar triple product of vectors	• Direction cosines and direction ratios of a line joining two points • Cartesian and vector equation of a line • Angle between two lines • Coplanar and Skew lines, shortest distance between two lines
Learning Objective	To enable the students to - • use analytical methods to find the solution of a given differential equation • compare and contrast scalars & vectors • classify the vectors & its properties • understand the concept of product of two vectors and its properties • understand & relate the properties of a vectors			
Expected Learning Outcome	Students would be able to - • use analytical methods to find the solution of a given differential equation • compare and contrast scalars & vectors			

	• classify the vectors • describe the Properties of product of two vectors • understand & relate properties of a vectors
Assessment/ Activity	• Class and Home Assignment • By Detailed Questioning from the Students in Class room Teaching
Teaching Aids /Resources	• Smart Board, Exemplar NCERT

MONTH: NOVEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week

Chapter 11 : Three Dimensional Geometry	• Cartesian and vector equation of a plane
	• Angle between
	  - two planes
	  - a line and a plane.
	• Distance of a point from a plane
	• Revision
		Revision	**Pre-Board – I**	**Pre-Board – I**

Learning Objective	To enable the students to – • visualize the different conditions of a line in three dimensional geometry • analyze & illustrate different conditions for a plane & a line			
Expected Learning Outcome	Students would be able to – • visualize the different conditions of a line in three dimensional geometry • analyze & illustrate different conditions for plane & line			
Assessment/ Activity	• Class and Home Assignment • By Detailed Questioning from the Students in Class room Teaching			
Teaching Aids /Resources	• Smart Board, Exemplar NCERT			

MONTH: DECEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 12: Linear Programming Problems **Chapter 13: Probability**	• Different types of L.P. problems • Mathematical formulation of L.P.P. • Graphical method of solution for problems in two variables, feasible and infeasible regions/solutions • Conditional Probability • Multiplication theorem on probability • Independent Events	• Total Probability • Baye's theorem • Random variable and its probability distribution • Mean and variance of random variable • Repeated independent trials and Binomial distribution	Revision	Revision	**Common Pre- Board**
Learning Objective	To enable the students to - • evaluate the conditional probability of various events • identify the various approaches of probabilities • solve problems on various approaches of probabilities				
Expected Learning Outcome	Students would be able to - • evaluate the conditional probability of various events • identify the various approaches of probabilities • solve problems on various approaches of probabilities				
Assessment/ Activity	• Class and Home Assignment • By Detailed Questioning from the Students in Class room Teaching				
Teaching Aids /Resources	• Smart Board, Exemplar NCERT				

MONTH: JANUARY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
	Winter Break Common Pre-Board	**Winter Break Common Pre-Board**	Revision	Revision
Assessment/ Activity	• Practice tests • Class and Home Assignment • By Detailed Questioning from the Students in Class room Teaching			
Teaching Aids /Resources	• Smart Board, Exemplar NCERT			

Science

Physics

MONTH: APRIL

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 1: Electric Charges & Fields **Chapter 2:** Electric Potential & Capacitance	Familiarization with the course and marking scheme	**Chapter -1** • Electric Charges; Conservation of charge • Coulomb's law • Electric field • Electric dipole	**Chapter -1** • Torque on a dipole in uniform electric field • Electric flux • Gauss's theorem • Applications of Gauss's theorem	**Chapter -2** • Electric potential, potential difference • Equipotential surfaces • Conductors and insulators • Free charges and bound charges inside a conductor • Dielectrics and electric polarization	**Chapter -2** • Capacitors and combination of capacitors in series and in parallel • Capacitance of a parallel plate capacitor with and without dielectric medium • Energy stored in a capacitor
Practical	• Any three experiments* (list of Experiments and Activities attached at the end of syllabus)				
Learning Objectives	To enable the students to– • explain the properties of electric field lines. • comprehend the concept of electric flux • define the potential difference between two points in an electric field. • understand that capacitor is a device that stores electrical energy				
Expected Learning Outcomes	Students would be able to: • obtain electric field intensity at a point due to a point charge, for a system of charges distributed discretely and continuous charge distribution. • apply Gauss's theorem to find electric field due to continuous charge distributions.				
Teaching Aids	• Charts/power point presentations				

MONTH: MAY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 3 : Current Electricity **Chapter 4:** Magnetic Effects Of Current	**Chapter -3** • Electric current • Drift velocity, mobility • Ohm's law, electrical resistance • Series and parallel combinations of resistors • Temperature dependence of resistance	**Chapter -3** • Internal resistance of a cell, potential difference and emf of a cell • Combination of cells in series and in parallel • Kirchhoff's laws and simple applications • Wheatstone bridge, metre bridge	**Chapter -3** • Potentiometer and its applications **Chapter -4** • Force on a moving charge in uniform magnetic and electric fields • Cyclotron • Force on a current-carrying conductor in a uniform magnetic field	**Chapter -4** • Force between two parallel current-carrying conductors • Biot - Savart law and its applications • Ampere's law and its applications • Straight and toroidal solenoids
Practical	• Any two experiments*			
Learning Objectives	To enable the students to - • differentiate between the emf of a cell and its terminal potential difference. • understand Ampere's law and its applications • understand the principle of Wheatstone bridge and use it to measure resistance of a conductor			
Expected Learning Outcomes	• Students will be able to: • Apply potentiometer principle to compare emf&find internal resistance of a cell. • analyze circuits containing more than one source of emf using Kirchhoff's laws • Understand that a magnetic force does not produce any change in the speed of a moving charge			
Teaching Aids	• Charts/power point presentations			
Assessment	• Cass Aassignments, Home Assignments			

MONTH: JULY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 4: Magnetic Effects of Current **Chapter 5:** Magnetism **Chapter 6:** Electromagnetic Induction	**Chapter -4** • Torque experienced by a current loop in uniform magnetic field • Moving coil galvanometer and its conversion to ammeter and voltmeter	• **Chapter -5** • Magnetic dipole moment of a revolving electron • Magnetic field intensity due to a magnetic dipole • Torque on a magnetic dipole (bar magnet) in a uniform magnetic field • Earth's magnetic field and magnetic elements	• **Chapter -5** • Para-, dia- and ferro - magnetic substances, with examples **Chapter -6** • Electromagnetic induction • Faraday's laws • induced emf and current • Lenz's Law • Eddy currents.	**Chapter -6** • Self and mutual induction • Revision	**CYCLE TESTS**
Practical	• Any three experiments*				
Learning Objectives	To enable the students to - • understand the working principle of moving coil galvanometer • comprehend the origin of Earth's magnetism • explain Eddy Currents and demonstrate the same through simple experiments				
Expected Learning Outcomes	Students will be able to: • explain how a galvanometer can be converted to ammeter and voltmeter • state the basic properties of dia, para&ferro- magnetic materials. • give examples where eddy currents are desirable and undesirable.				
Teaching Aids	• Charts/power point presentations				
Assessment	Class Assignments, Home Assignments				

MONTH: AUGUST

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 7: Alternating Currents **Chapter 8:** Electromagnetic Waves **Chapter 9:** Ray Optics	**Chapter -7** • Transformer • AC generator • Alternating currents • peak and rms value of alternating current/voltage	**Chapter -7** • Reactance and impedance • LC oscillations • LCR series circuit • Resonance • power in AC circuits, wattless current	**Chapter -8** • Need for displacement current • Electromagnetic waves and their characteristics • Electromagnetic spectrum **Chapter -9** • Reflection of light • Spherical mirrors, mirror formula	**Chapter -9** • Refraction of light • Total internal reflection and its applications • Refraction at spherical surfaces, lenses, thin lens formula • Lens Maker's formula
Practical	• Any three experiments*			
Learning Objectives	To enable the students to - • understand the working of transformer and AC generator • describe the characteristic properties and uses of each part of EM spectrum. • draw ray diagrams and derive expressions for Mirror formula and Lens formula			
Expected Learning Outcomes	Students will be able to: • differentiate between step-up and step-down transformer • distinguish between the instantaneous value, the peak value and the rms value of an alternating current • recognize that the role of impedance in an AC circuit is analogous to the role of a resistance in a DC circuit			
Teaching Aids	• Charts/power point presentations			
Assessment	• Cass Assignments, Home Assignments			

MONTH: SEPTEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 9: Ray Optics **Chapter 10:** Wave Optics	**Chapter -9** • Refraction and dispersion of light through a prism • Scattering of light • Microscopes (Simple & Compound microscope)	**Chapter -9** • Astronomical telescopes (reflecting and refracting) and their magnifying powers • Revision	**Term-I Exam.**	**Term –I Exam.**	**Chapter -10** • Wave front and Huygen's principle
Practical	• Any one experiment*				

Learning Objectives	To enable the students to -
	• understand the phenomena based on scattering of light
	• understand the working of optical fibres and its applications.
	• understand the working of microscope and telescopes.
Expected Learning Outcomes	Students would be able to:
	• draw ray diagrams for image formation for different positions of the object in case of mirror & lens.
	• derive the equations for refraction at spherical surface.
	• differentiate between reflecting and refracting type telescopes
Teaching Aids	• Charts/power point presentations
Assessment	• Class Assignments, Home Assignments

MONTH: OCTOBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 10: Wave Optics **Chapter 11:** Dual Nature of Matter & Radiation **Chapter 12:** Atoms **Chapter 13:** Nuclei	**Chapter -10** • Reflection and refraction using Huygen's principle. • Interference • Young's double slit experiment • Diffraction due to a single slit • Resolving power of microscopes and astronomical telescope • Polarisation of light • Brewster's law	**Chapter -11** • Dual nature of radiation • Photoelectric effect • Einstein's photoelectric equation-particle nature of light • Matter waves-wave nature of particles, de Broglie relation • Davisson-Germer experiment	**Chapter -12** • Alpha-particle scattering experiment • Rutherford's model of atom • Bohr model • Energy levels, hydrogen spectrum	**Chapter -13** • Composition and size of nucleus • Mass-energy relation, mass defect • Binding energy per nucleon and its variation with mass number • Radioactivity • Nuclear fission, fusion
Practical	• Any two experiments*			
Learning Objectives	To enable the students to - • understand the conditions for observing sustained interference of light • comprehend the phenomenon of photoelectric emission • distinguish between particle nature and wave nature of light • understand properties of alpha particles, β-particles and gamma- rays			

Expected Learning Outcomes	Students would be able to: • differentiate between interference and diffraction pattern • represent the observations of photoelectric effect graphically • explain the spectrum of H-atom in terms of energy level diagram • explain graphical variation of nuclear binding energy/nucleon with the mass number
Teaching Aids	• Charts/power point presentations
Assessment	• Class Assignments, Home Assignments

MONTH: NOVEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 14: Electronic Devices	**Chapter -14** • Intrinsic & Extrinsic semiconductor • Semiconductor diode – I-V characteristics in forward and reverse bias • Diode as a rectifier –half wave & full wave • LED, Photodiode, Solar cell, Zener diode	Revision	**Pre-Board -I**	**Pre-Board -I**
Practical	• Any one experiment*			
Learning Objectives	To enable the students to - • differentiate conductors, insulators and semiconductors on the basis of their different energy band diagrams • differentiate p-type and n-type semiconductors			
Expected Learning Outcomes	Students would be able to: • explain the I-V characteristics of a junction diode in forward and reverse bias • explain the working of optoelectronic devices			
Teaching Aids	• Charts/power point presentations			
Assessment	• Class Assignments, Home Assignments			

MONTH: DECEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 14: Electronic Devices **Chapter 15 :** Communication Systems	**Chapter -14** • Junction transistor, transistor action • Characteristics of a transistor • Transistor as a switch • Transistor as an amplifier • Transistor as an Oscillator • Logic gates (OR, AND, NOT, NAND and NOR)	**Chapter -15** • Elements of a communication system • Propagation of electromagnetic waves in the atmosphere • Production and detection of an amplitude-modulated wave	Revision	Revision	**Common Pre-board**
Practical	• Practice of experiments*				
Learning Objectives	To enable the students to - • understand the functioning of photoelectric devices • understand the functioning of different logic circuits such as NOT, OR, AND, NOR and NAND logic gates				
Expected Learning Outcomes	Students will be able to: • explain the I-V characteristics of a junction diode in forward and reverse bias • explain the input and output characteristics of a transistor • explain the functioning of transistor as a switch, amplifier and oscillator • explain the space wave propagation				
Teaching Aids	• Charts/power point presentations				
Assessment	• Class Assignments, Homew Assignments				

MONTH: JANUARY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
	Winter Break **Common Pre-Board**	**Winter Break** **Common Pre-Board**	Revision	Revision
Practical	Practice of experiments			
Learning Objectives	Revision of the difficult topics from the syllabus			
Expected Learning Outcomes	Students would be able to solve sample papers.			
Teaching Aids	Reference books, Sample papers			
Assessment	Pre-board Exams			

List of Experiments and Activities for Class XII

Practicals

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

1. Record of at least 15 Experiments [with a minimum of 6 from each section], to be performed by the students.
2. Record of at least 5 Activities [with a minimum of 2 each from section A and section B], to be demonstrated by the teachers.
3. The Report of the project to be carried out by the students.

SECTION–A

Experiments

1. To determine resistance per cm of a given wire by plotting a graph for potential difference versus current.
2. To find resistance of a given wire using meter bridge and hence determine the resistivity (specific resistance) of its material
3. To verify the laws of combination (series) of resistances using a meter bridge.
4. To verify the laws of combination (parallel) of resistances using a meter bridge.
5. To compare the EMF of two given primary cells using potentiometer.
6. To determine the internal resistance of given primary cell using potentiometer.
7. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
8. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.
9. To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.
10. To find the frequency of AC mains with a sonometer.

Activities *(For the purpose of demonstration only)*

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

Experiments

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

Activities *(For the purpose of demonstration only)*

1. To identify a diode, an LED, a transistor, an IC, a resistor and a capacitor from a mixed collection of such items.
2. Use of multimeter to (i) identify base of transistor, (ii) distinguish between npn and pnp type transistors, (iii) see the unidirectional flow of current in case of a diode and an LED, (iv) check whether a given electronic component (e.g., diode, transistor or IC) is in working order.
3. To study effect of intensity of light (by varying distance of the source) on an LDR.
4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
5. To observe polarization of light using two Polaroid's.
6. To observe diffraction of light due to a thin slit.
7. To study the nature and size of the image formed by a (i) convex lens, (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

Chemistry

MONTH: APRIL

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Unit-2: Solutions **Unit-3:** Electrochemistry	Familiarization with the course and marking scheme	**Unit-2**: • Types of solutions • Method to express conc.of solution • Henry's law, Raoult's law • Ideal & non ideal solution.	• Colligative properties. • Numericals based on colligative properties • Abnormal molecular mass. • **Assignment/ NCERT Text Book problems**	**Unit-3**: • Difference between Electrochemical cell and Electrolytic cell. • Nernst equation • Conductivity, Resistivity.	• Variation of conductivity with dilution. • Kohlrausch'sLaw & numericals • Batteries &Fuel cells • Corrosion& its Mechanism. • **Assignment/ NCERT Text Book problems**
Practical	• Determination of concentration and strength of $KMnO_4$ solution by titrating it against a standard solution of Mohr salt and Oxalic acid.				
Learning Objectives	Familiarizing the students with • Henry's and Raoult's law, Colligative properties and correlating them to molar masses of the solutes. • nernst equation, conductivity, laws of electrolysis and different cells. • mechanism of electrochemical process of corrosion.				
Expected Learning Outcomes	• Student would be able to • Apply colligative properties and Nernst equation to solve the numericals. • Explain the deviations of real solution from Raoult's law and justify the variation of conductivity and molar conductivity of solution with dilution.				
Assessment/ Activity	• Classroom discussion, Home assignment and class written work.				
Teaching Aids /Resources	• Smart Board, Chart and Quiz.				

MONTH: MAY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Unit-4 Chemical Kinetics **Unit-5** Surface Chemistry **Unit-1:** Solid State.	**Unit-4**: • Average & instantaneous rate of reaction • Rate expression. • Rate constant and Order of a reaction . • Integrated rate equation for zero &first order. • Half- life of zero and first order reactions	• Numericals related to integrated equations. • Collision theory. • **Assignment/NCERT Text Book problems** **Unit-5:** • Physical &chemical adsorption and Difference between these two.	• Freundlich adsorption isotherm. • Catalyst role in industry. • Colloidal state and its preparation, properties and purification. • Emulsions and its types with examples. • **Assignment/NCERT Text Book problems**	**Unit-1** • Crystalline & Amorphous solids. • Classification of solids. • No of unit cells in a close packed structure. • Packing efficiency &Numericals.
Practical	• Preparation of Lyophobic and Lyophilic sol. • To study the effect of concentration on the rate of reaction between $Na_2S_2O_3$ and HCl.			
Learning Objectives	Familiarizing the students with • molecularity and order of a reaction, deriving integrated rate equations for the zero and first order reactions. • temperature dependence of rate of reaction • mechanism of adsorption, explaining the factors controlling adsorption and enumerating the nature of colloidal state • classifying crystalline solids based on nature of binding forces, calculating the packing efficiency of cubic unit cells.			
Expected Learning Outcomes	Student would be able to • recall and use the different rate equations to solve the numericals. • explain the important features of adsorption and different catalytic activities. • correlate the stability with packing efficiency of different crystals.			
Assessment/ Activity	• Classroom discussion, Home assignment and class written work (Numerical practice & Nomenclature)			
Teaching Aids /Resources	• Smart Board, Chart and quiz.			

MONTH: JULY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Unit-1: Solid state **Unit-7** The P- Block Elements	**Unit-1:Contd.** • Packing efficiency &Numericals • Defects and magnetic properties. • **Assignment/NCERT Text Book problems**	**Unit-7:** • General trends of group 15 and16 • Important Compounds of group 15 and 16. • Allotropic forms of P and S. • Chemistry of some important compounds.	• Structure of Oxo acids of N and S. • Preparation, properties & uses of halogens and Interhalogens. • **Assignment/ NCERT Text Book problems**	Revision	**CYCLE TESTS**
Practical	• To separate the colour pigments by paper chromatography, preparation of potash alum.				
Learning Objectives	Familiarizing the students with • correlating the density of a substance with its unit cell properties, describing defects in solids and their electrical and magnetic properties. • describing general trends in group 15, 16, and their preparation, properties and uses.				
Expected Learning Outcomes	Student would be able to • solve numericals related to density. • understand the chemistry of p-block elements and their compounds (valued based questions).				
Assessment/ Activity	• Classroom discussion, Home assignment and class written work.				
Teaching Aids /Resources	• Smart Board, Chart and Quiz.				

MONTH: AUGUST

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Unit-7 The p- Block Elements **Unit-8** The d & f- block elements **Unit-9** Coordination compounds	• Preparation, properties and Structure of halogens/compounds (group-17) • Periodic properties of Noble gases • Structure& uses (group-18) • **Assignment/NCERT Text Book problems**	**Unit-8:** • General characteristic of d &f- block elements. • Stability of oxidation .states in terms of their electrode potential.	• Preparation of $KMnO_4$ and $K_2Cr_2O_7$ • Properties , structure and uses of transition elements/compounds. • Lanthanides and Actinides. • Electronic configuration of inner transition elements and uses.	**Unit-9:** • Definition of some important terms related to coordination chemistry. • Nomenclature &Isomerism. • Bonding in Coordination compounds using valence Bond theory.

	• Crystal field theory. • Metal carbonyls & Importance of coordination compounds. • **Assignment/NCERT Text Book problems**

Practical	• Project and salt analysis.
Learning Objectives	Familiarizing the students with • the general trends in group 17, 18, and their preparation, properties and uses. • properties of the first row transition elements. • preparation, properties, structures and uses of $K_2Cr_2O_7$ and $KMnO_4$ and Chemistry of Inner transition elements. • postulates of Werner's theory, nomenclature, the nature of bonding in terms of Valence Bond and crystal Field theories.
Expected Learning Outcomes	Students would be able to • describe the general trends in group 17 and18 and their preparation, properties and uses. • explain the different characters of transition and inner transition elements. • classify the different isomers; to draw the geometry and importance of the magnetic character of the complexes.
Assessment/ Activity	• Classroom discussion, Home assignment and class written work. (structure of compounds)
Teaching Aids /Resources	• Smart Board, Chart and Quiz.

MONTH: SEPTEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Unit-10: Haloalkanes and Haloarenes **Unit-11** Alcohol, Phenols& Ethers	**Unit-10** • Nomenclature. • Nature of C-X bond. • Preparation.& physical properties. • Nature of chemical reactions. • Stereo-chemical aspects of nucleophilic substitution reactions. • Polyhalogen compounds • **Assignment/NCERT Text Book problems**	Revision	**Term –I Exam**	**Term –I Exam**	**Unit-11:** • Nomenclature

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Practical	• Characteristic tests of carbohydrates and fats in food sample.
Learning Objectives	Familiarizing the students with • IUPAC names of haloalkanes and halo arenes • Different stereo chemical aspects of nucleophilic substitution reactions. • Naming alcohols, phenols and ethers according to IUPAC system.
Expected Learning Outcomes	Students would be able to • solve different conversions based on different reaction mechanisms • write the IUPAC names of organic compounds.
Assessment/ Activity	• Classroom discussion, Home assignment and class written work (Numericals and nomenclature).
Teaching Aids /Resources	• Chart and Quiz.

MONTH: OCTOBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Unit-11 Alcohol, Phenols & Ethers **Unit-12** Aldehydes, Ketones &Carboxylic acids **Unit-13** Amines	**Unit-11:** • Structure of functional Groups. • Preparation of alcohols, Phenols and ethers. • Physical and Chemical properties of alcohols, phenols and ethers.	**Unit-12:-** • Nomenclature. • Structure of carbonyl compound. • Physical properties of carboxylic acids	**Unit-12 (Contd.)** • Chemical reactions of carboxylic acids. • Factors affecting the acidity of carboxylic acids.	• **Unit-13:** • Nomenclature of amines. • Classification and Preparation of amines. • Diazonium salts and its importance.
Practical	• Characteristic tests of proteins and functional groups present in organic compounds.			
Learning Objectives	Familiarizing the students with • IUPAC nomenclature, discussing reactions involved in the preparation of alcohols, phenols and ethers. • correlating physical and chemical properties with their structures. • explaining the reactions mechanism of aldehydes, ketones and name reactions • IUPAC names, discussing reactions involved preparation of amines. • understanding reaction mechanism of acylation of amines.			

Learning Outcomes	Students would be able to
	• know the structure of three classes of organic compounds based on hybridization.
	• understand the comparison of acidic character of alcohols and phenols.
	• know the importance of various factors affecting the acidity of carboxylic acids.
	• write the bonding and chemical nature of three classes of amines.
	• know the importance of Diazonium salt to solve the organic conversions.
Assessment/ Activity	• Classroom discussion, Home assignment and class written work (reaction mechanism).
Teaching Aids /Resources	• Black Board, Chart and Quiz.

MONTH: NOVEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Unit-6: Isolation of Elements **Unit-16:** Chemistry in Everyday Life	• Extraction of metals, purification and their uses **Unit-16:** • Drugs, chemicals in food & cleansing agents. • **Assignment/NCERT Text Book problems**	Revision	**Pre-Board -I**	**Pre-Board -I**
Practical	• Project and salt analysis /Preparation of organic compounds			
Learning Objectives	Familiarizing the students with • correlating physical and chemical properties of metals. • explaining the importance of chemistry in everyday life.			
Expected Learning Outcomes	Students would be able to. • write the reactions involved during the extraction of metals. • know the purification process of certain elements. • recall and use the chemical compounds in everyday life (value based).			
Assessment/ Activity	• Classroom discussion, Home assignment and class written work.			
Teaching Aids /Resources	• Smart Board, Chart and Quiz.			

MONTH: DECEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Unit-15 Polymers **Unit-14** Biomolecules	**Unit-15** • Classification of polymers • Preparation of Polymers (natural, semi-synthetic and synthetic polymer) and their uses. • Biodegradable polymers	• **Assignment/NCERT Text Book problems** **Unit-14** • Classification of Carbohydrates and related reactions. • Proteins and its different types. • Vitamins, sources and their uses. • Nucleic Acids	• Assignment • Revision	Revision	**Common Pre-Board**
Practical	• Revision				
Learning Objectives	Familiarizing the students with • discussing reactions involved preparation of polymers and different biomolecules. • correlating physical and chemical properties with their structures.				
Expected Learning Outcomes	Student would be able to - • write the different monomers used to make different polymers. • explain the chemical reactions involved in biomolecules.				
Assessment/ Activity	• Classroom discussion, Home assignment and class written work (structures of monomers).				
Teaching Aids /Resources	• Smart Board, Chart and quiz.				

MONTH: JANUARY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Revision of Syllabus	**Winter Break** **Common Pre Board**	**Winter Break** **Common Pre Board**	Paper Discussion	Revision or Practical practice
Practical	• Practice for the Board practical Exam.			
Learning Objectives	• To know the mistakes in Examination or to find out their doubts.			
Expected Learning Outcomes	• Students would be thorough with the revised topics.			
Assessment/ Activity	• Practice tests from selected topics			
Teaching Aids /Resources	• Sample papers.			

Biology

MONTH: APRIL

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter-1 Reproduction in Organisms **Chapter-2** Sexual Reproduction in Plants **Chapter-3** Human Reproduction	Familiarization with the course and marking scheme	**Chapter 1** • life span asexual and sexual reproduction **Chapter-2** • Flower • Male and female gametophyte • Pollination, fertilization • Out breeding devices	**Chapter-2** (contd.) • Endosperm and embryo formation • Seed and fruit formation • Apomixes and polyembryony	**Chapter-3** • Male and female reproductive system • Spermatogenesis and oogenesis	**Chapter-3** (contd.) • Menstrual cycle embryonic development • lactation
Practicals	• Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary ; • T.S. of blastula through permanent slides. • Study pollen germination on a slide. • Flowers adapted to pollination by different agencies (wind, insects, bird). • Pollen germination on stigma through a permanent slide. • Controlled pollination - emasculation, tagging and bagging. • Meiosis in onion bud cell or grasshopper testis through permanent slides. • Prepare a temporary mount of onion root tip to study mitosis.				
Learning Objectives	To enable the students to - • understand the importance of reproduction • differentiate between asexual and sexual reproduction • differentiate between the various types of pollination and seed dispersal • sequentially arrange the stages in sexual reproduction in plants and animals				
Expected Learning Outcomes	The students will be able to- • understand the importance of reproduction • differentiate between asexual and sexual reproduction • differentiate between the various types of pollination and seed dispersal • sequentially arrange the stages in sexual reproduction in plants and animals				
Teaching Aids	• Smart Board, assignments, smart class modules, diagrams				
Assessment	• Assignments, worksheets, class discussions, tests				

MONTH: MAY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter-4 Reproductive Health **Chapter-5** Principles of Inheritance and Variations **Chapter-6** Molecular Basis of Inheritance	**Chapter-4** • Reproductive health • Population explosion and birth control • Methods of birth control • MTP • STDs • infertility	**Chapter-5** • Principles of inheritance • deviations from Mendelian ratios	**Chapter-5 contd**. • Chromosome theory of inheritance • Linkage and crossing over sex determination • Mutations • Human genetic disorders • Pedigree analysis	**Chapter-6** • DNA as genetic material • Replication of DNA • Transcription of DNA • Genetic code • Translation • Regulation of gene expression • Human genome project • DNA fingerprinting
Practicals	• Mendelian inheritance using seeds of different colour/sizes of any plant. • Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, earlobes, widow's peak and colour blindness.			
Learning Objective	To enable the students to- • understand the importance of population control • correlate the reason of infertility to the kind of appropriate birth control measure • understand the structure of DNA and its discovery • appreciate role of DNA in expression of genes • differentiate between linkage and crossing over • understand and apply the knowledge of DNA fingerprinting in forensics			
Expected Learning Outcomes	The students will be able to- • understand the importance of population control • correlate the reason of infertility to the kind of appropriate birth control measures • understand the structure of DNA and its discovery • appreciate role of DNA in expression of genes • differentiate between linkage and crossing over • understand and apply the knowledge of DNA fingerprinting in forensics			
Teaching Aids	• Assignments, power point presentations,			
Assessment	• Diagrams Assignments, worksheets, class discussions, tests			

MONTH: JULY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter-7 Evolution **Chapter-8** Human Health and Diseases **Chapter-9** Strategies for Enhancement in Food Production	**Chapter-7** • origin of life • evolution of life forms-evidences of evolution • adaptive radiation • Hardy Weinberg principle • Fossils • Evolution of plants and animals • Evolution of man	**Chapter-8** • Health • Common diseases in humans • Life cycle of malarial parasite • Prevention and control of infectious diseases	**Chapter-8 (contd.)** • Immunity • Vaccination and immunization • Immune disorders • Cancer • Drug abuse • Addiction and dependence	**Chapter-9** • Animal husbandry • Plant breeding • Steps in plant breeding. Development of resistance in plants for various factors, SCP, tissue culture	**CYCLE TESTS**
Practicals	• Common disease causing organisms like *Ascaris, Entamoeba, Plasmodium*, Roundworm through permanent slides or specimens. Comment on symptoms of disease that they cause.				
Learning Objectives	To enable the students to - • understand and compare the theories given by darwin and lamarck • understand and calculate the mathematical expression for hardy weinberg principle • understand and analyze the evolutionary history of plants, animal and man • understand causes and effects of various diseases in humans • understand about prevention of diseases by vaccination/immunization • understand the steps involved in plant breeding • appreciate the importance of following proper guidelines for rearing of animals				
Expected Learning Outcomes	The students will be able to- • understand and compare the theories given by darwin and lamarck • understand and calculate the mathematical expression for hardy weinberg principle • understand and analyze the evolutionary history of plants, animal and man • understand causes and effects of various diseases in humans • understand about prevention of diseases by vaccination/immunization • understand the steps involved in plant breeding • appreciate the importance of following proper guidelines for rearing of animals				
Teaching Aids	• Assignments, power point presentations				
Assessment	• Diagrams Assignments, worksheets, class discussions, tests				

MONTH: AUGUST

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter-10 Microbes in Human Welfare **Chapter-11** Biotechnology-Principles and Processes	**Chapter-10** • Microbes • Household products • Antibiotics • Sewage treatment and biofertilizers	**Chapter-10** • Biogas plant • Microbes as biocontrol agents and biofertilizers	**Chapter-11** • Principles of biotechnology • Tools and steps of recombinant DNA technology	**Chapter-11 (contd.)** • Cloning vectors, PCR, bioreactors
Practicals	• Isolation of DNA from available plant material such as spinach, green pea seeds, papaya, etc.			
Learning Objectives	To enable the students to - • understand the role of microbes in various spheres of life • understand the construction and working of biogas plant • understand the principles and steps involved in biotechnology • understand construction and working of bioreactors • locate genes of importance on cloning vectors			
Expected Learning Outcome	The students will be able to- • understand the role of microbes in various spheres of life • understand the construction and working of biogas plant • understand the principles and steps involved in biotechnology • understand construction and working of bioreactors • locate genes of importance on cloning vectors			
Teaching Aids	• Assignments, worksheets, class discussions, tests			
Assessment	• Assignments, power point presentations, diagrams			

MONTH: SEPTEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter-12 Biotechnology and Its Applications **Chapter-13** Organisms and Populations	**Chapter-12** • Applications of biotechnology • Bt cotton • RNA interference • Ethical issues	**Chapter-13** • Organisms and major abiotic factors • Population attributes	**Term –I Exam**	**Term –I Exam**	• Revision of previous topics
Practicals	• Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organisms.				

	• Study the presence of suspended particulate matter in air at two widely different sites
Learning Objectives	To enable the students to - • understand and appreciate applications of biotechnology in various fields of life • understand the importance of organisms in the ecosystem • correlate the changes in the physical environment and their impact on population characteristics • calculate and correlate population density with other parameters • graphically represent the growth curves and understand age pyramids
Expected Learning Outcome	Students will be able to– • appreciate the role of biotechnology in our life and in research • understand the dynamic relationship between organisms and environment. • understand various population attributes.
Teaching Aids	• Smart Board, assignments, power point presentations, diagrams
Assessment	• Assignments, worksheets, class discussions, tests

MONTH: OCTOBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter-13 Organism and Population **Chapter-14** Ecosystem-Structure and Function	**Chapter-13** • adaptations • Relationships between organisms	**Chapter-14** • Productivity, decomposition • Energy flow, ecological pyramids	**Chapter-14** • Ecological succession	**Chapter-14 contd**. • Nutrient cycling • Ecosystem services
Practicals	• Study of plant population density & frequency by quadrat method. • Study the effect of different temperatures and three different pH on the activity of salivary amylase on starch • Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity. Correlate with the kinds of plants found in them			
Learning Objectives	To enable the students to- • understand and justify various adaptations present in organisms with respect to their habitat and living conditions • understand the importance of organisms in the ecosystem • correlate the changes in the physical environment and their impact on population characteristics • calculate and correlate population density with other parameters • graphically represent the growth curves and understand age pyramids • understand and appreciate the various interactions among organisms			

	• Draw and understand food chains, pyramids and mineral cycles
Expected Learning Outcomes	The student will be able to- • understand and justify various adaptations present in organisms with respect to their habitat and living conditions • understand the importance of organisms in the ecosystem • correlate the changes in the physical environment and their impact on population characteristics • calculate and correlate population density with other parameters • graphically represent the growth curves and understand age pyramids • understand and appreciate the various interactions among organisms • draw and understand food chains, pyramids and mineral cycles
Teaching Aids /Resources	• Assignments, power point presentations, diagrams
Assessment/ Activity	• Assignments, worksheets, class discussions, tests

MONTH: NOVEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter-15 Biodiversity and Conservation	**Chapter-15** • Biodiversity and conservation • Introduction and the statistical aspects -patterns of biodiversity loss of biodiversity	**Chapter-15 contd.** • Biodiversity conservation • International forums on conservation of biodiversity	**Pre-Board -I**	**Pre-Board -I**
Practicals	• Comment upon Two plants & two animals found in Xeric conditions. • Study the effect of different temperatures and three different pH on the activity of salivary amylase on starch			
Learning Objectives	To enable the students to- • appreciate and realize the importance of conservation of biodiversity • develop strategies for in situ and ex-situ conservation of biodiversity • understand the global concerns about biodiversity and ozone layer depletion			
Expected Learning Outcomes	Students will be able to- • appreciate and understand the importance of biodiversity and will be able to internalize the strategies for its conservation.			
Teaching Aids	• Assignments, power point presentations, diagrams			
Assessment	• Assignments, worksheets, class discussions, tests			

MONTH: DECEMBER

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter-16 Environmental Issues	**Chapter-16** • Air pollution and its control • Water pollution and its control • Solid waste management, agricultural waste and radioactive waste, global warming	**Chapter-16 contd.** • Ozone layer depletion • International forums for conservation of environment	Revision	Revision	**Common Pre-Board**
Practicals	• Comment upon Two plants & two animals found in Aquatic conditions. their morphological adaptations • Revision & Project Work.				
Learning Objectives	To enable the students to - • identify the causes and effects of air, water and land pollution • appreciate the superiority of cng as a better fuel alternative • understand causes and effects of global warming • realize the importance of conservation of environment				
Expected Learning Outcomes	The students will be able to- • identify the causes and effects of air, water and land pollution • appreciate the superiority of cng as a better fuel alternative • understand causes and effects of global warming				
Teaching Aids	• Assignments, power point presentations, diagrams				
Assessment	• Assignments, worksheets, class discussions, tests				

MONTH: JANUARY

Content/ Topic	1st Week	2nd Week	3rd Week	4th Week
	Winter Break **Common Pre-Board**	**Winter Break** **Common Pre-Board**	Revision	Revision
Practicals	• Revision & project work			
Learning Objectives	To enable the students to - • recall and remember all the concepts • solve previous years papers			
Expected Learning Outcomes	Students will be able to- • recall and remember all the concepts • solve previous years papers			
Teaching Aids	• Class board, assignments, smart class modules, diagrams			
Assessment	• Class assignments, last year papers, pre-board exams			

Computer Science

MONTH: APRIL

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 1: C++ Revision Tour **Chapter 2:** Object Oriented Programming **Chapter 3 :** Function Overloading	Familiarization with the course and marking scheme	**Chapter 1:** • A quick review of the C++ programming concepts learnt in class XI through Ready Reckoner • A quick review of the C++ programming concepts learnt in class XI through reckoner • Programming exercises based on concepts learnt in class XI will be given in practical sessions.	**Chapter 1: (Contd.)** • A quick review of the C++ programming concepts learnt in class XI through Ready Reckoner • A quick review of the C++ programming concepts learnt in class XI through reckoner • Programming exercises based on concepts learnt in class XI will be given in practical sessions.	**Chapter 2:** • Basic Object oriented programming concepts Advantages and disadvantages of OOP • Features of OOP languages • Comparative study of the features of procedural and OOP languages • Programming problems based on concepts learnt in class XI to be continued in practical sessions.	**Chapter 3 :** • Introduction and need of function overloading • Features of overloaded functions. • Restriction on overloaded functions • How to declare, define and execute overloaded functions • Programming exercises based on function overloading
Learning Objectives	To enable students to - • recapitulate the C++ language concepts learnt in class XI • know the features of OOP languages • understand the advantages and disadvantages of OOP • compare the features of procedural and OOP languages • learn the concept of function overloading • learn to declare, define and execute overloaded functions				
Expected Learning Outcomes	Students would be able to-: • store and process the information related to an entity as a single unit using classes • use functions with class objects as parameters • apply the concept of polymorphism				

Assessment / Activity	• Theory assignments from each chapter • Class test after completion of each chapter • Practical assignments on Chapter 2 and Chapter 4
Teaching Aids	• Coverage of concept of OOP and Classes using DigiTALLY modules and Demonstration of programs using LCD projector

MONTH: MAY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 4: Classes and Objects **Chapter 5:** Constructors and Destructors **Chapter 6:** Inheritance: Extending Classes	**Chapter 4:** • Introduction to 'class' as derived data type and its need • Declaration of data members and member functions • Scope of class & its members • Types of functions in a class • Declaring class objects • Executing programs using classes and objects • Programming problems based on concepts learnt	**Chapter 4:** • Declaring array of objects • Executing programs using classes with array of objects • Programming problems based on concepts learnt • Using objects as function arguments • Declaring functions returning object of a class • Programming problems based on concepts learnt	**Chapter 5:** • Introduction to constructor and destructor • Need for constructors • Types of constructors • DESTRUCTORS • Declaration and definition • Some characteristics of destructors • Invocation of constructors • Constructor overloading • Programming problems using constructors and destructors	**Chapter 6:** • Introduction & need for inheritance • Different forms of inheritance • Derived & Base classes • Visibility modes • Multiple Inheritance • Inheritance & Access control • Nesting of classes • Programming problems using Inheritance Programming exercises based on single, multiple and multilevel inheritance.
Learning Objectives	To enable students to - • use Class as a data type to create software model of a real life entity • declare and execute different types of member functions of a class • pass class object as parameter to a function and return it from a function • learn the concept of nested class and static class members • understand memory allocation and deallocation by the constructors and destructors • model classes and reuse their properties through inheritance			

Expected Learning Outcomes	Students would be able to - • store and process the information related to an entity as a single unit using classes use functions • learn about the role of constructors and destructors in memory allocation for class objects. • interpret ,how to protect data related to an entity using visibility modes • reuse the properties of a class and define relationships between them, • use the concept of inheritance
Assessment / Activity	• Revision tests on the completion of chapters • Assignments including HOTS questions from CBSE papers • Oral question answer sessions,
Teaching Aids	• Digitally module for introducing the concept of inheritance • Smart board , Lecture presentation demonstrating algorithms using LCD projector

MONTH: JULY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 7 : Data File Handling **Chapter 11:** Database Concepts **Chapter 12:** Structured Query Language	**Chapter 7 :** • Introduction to data files and their need • Types of data files- Binary & text files • Header files for handling data files • File modes • Steps to create a data file • Methods to write data into a file – through file object & through write() function.	**Chapter 7 :** • Methods to read a file – getchar(), getline() and read() function • Concept of File pointers – get_pointer and put_pointer • File operations: • Searching records • Modifying records • Deleting records • Copying files • Merging files	**Chapter 11:** • Introduction to databases • Purpose / advantages of databases • Database abstraction levels • Comparative study of different data models **Chapter 12:** • Introduction to SQL as a query language for DBMS • Categories of commands in SQL – DDL, DML and TCL (as per the limitation of syllabus) • Practice of SQL queries in the lab • SQL processing – built-in functions, joins and union • Practice of SQL queries in the lab	Revision	**CYCLE TESTS**

Learning Objectives	To enable students to -
	• create store program data in data files and learn operations to maintain data in files.
	• learn the concept of databases and their use in commercial applications
	• learn about the structure of a database
	• differentiate between data models
	• write and execute SQL queries using My SQL
Expected Learning Outcomes	Students would be able to -
	• use data files to store software data
	• use SQL queries to store and maintain data in databases
Assessment / Activity	• Theory assignments from each chapter
	• Class test after completion of each chapter
	• Practical assignments on Chapter 2 and Chapter 6
Teaching Aids / Resources	• Smart board , Lecture presentation demonstrating algorithms using LCD projector

MONTH: AUGUST

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 13: Boolean Algebra **Chapter 14:** Communication And Network Concepts	• Discussion of the Question Paper of Mid-Term -I	**Chapter 13:** • Concept of Binary valued quantities and logical operations • Introduction to Basic logic gates • Postulates of Boolean Algebra • Principle of Duality • Theorems of Boolean algebra – De Morgan's theorem	**Chapter 13:** • Derivation of Boolean expressions- Minterms, Maxterms and Canonical expressions • Minimization of Boolean expression using algebraic method and K-Map • More about logic gates – NOR, NAND, XOR, XNOR and NAND	**Chapter 13:** • Gates • Proof of NAND and NOR being universal gates **Chapter 14:** • Introduction to computer networks • Need of networking • Evolution of networks • Switching techniques • Study of different transmission media • Data communication terms
Learning Objectives	To enable students to - • Learn the concept of Basic logic gates • postulates of Boolean Algebra			

	• principle of Duality and theorems of Boolean algebra – De Morgan's theorem • different concepts related to computer networks	
Expected Learning Outcomes	Students would be able to - • apply of Boolean Algebra in the computer circuitry • understand the application of computer networking techniques and devices	
Assessment / Activity	• Theory assignments from each chapter • Class test after completion of each chapter	
Teaching Aids / Resources	• Coverage of networking concepts using DigiTALLY modules and exhibits of networking devices in the classroom • PowerPoint presentation on the topics of Boolean Algebra	

MONTH: SEPTEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 14: Communication and Network Concepts	**Chapter 14:** • Types of networks • Network topologies • Network devices • Factors which affect a LAN design • Communication protocols • Wireless/ mobile computing • Internetworking terms and concepts • Introduction to Open source technologies • Network security • Types of viruses	Revision	**Term - I Exam**	**Term –I Exam**	Discussion of the Question Paper of Term-I Exam
Learning Objectives	To enable students to- • understand the factors that affect the designing of Local Area Network • understand the use and application of each network protocol • know about different security threats				
Expected Learning Outcomes	Students would be able to - • appriciate components of a network • functional elements of a network • types of networks				

Assessment / Activity	• Theory assignments from each chapter • Class test after completion of each chapter • Practical assignments on Chapter 2 and Chapter 6
Teaching Aids / Resources	• Coverage of networking concepts using DigiTALLY modules

MONTH: OCTOBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 9: Arrays **Chapter 8:** Pointers	**Chapter 9:** • Basic operations on one-dimensional arrays • Traversal • Searching • Using Linear & binary search Algorithms • Insertion • Deletion	**Chapter 9:** • Sorting data in one dimensional arrays using different sorting algorithms • Bubble sort • Selection sort • Insertion sort • Merging two or more arrays	**Chapter 9:** • Basic operations on two-dimensional arrays • Address calculation of nth location of a 2D array stored in Col. Major or row major order • Operations on matrices – sum, product, diff. and transpose of matrices	**Chapter 8:** • Introduction to Pointers • The need of Pointers • C++ Memory map • Dynamic & Static memory allocation techniques • Free store memory • Declaration & initialization of pointers
Learning Objectives	To enable students to- • perform basic data processing operations on one-dimensional arrays • understand the concept of pointers and dynamic			
Expected Learning Outcomes	Students would be able to: • perform Basic operations on one-dimensional arrays using typical algorithms. • sort array data using different sorting algorithms • perform Basic operations on two-dimensional arrays • manipulate data handled by a program through pointer data type • pass references of data values dynamically to functions.			
Assessment	• Theory and Practical assignments, Revision test after completion of each chapter			
Teaching Aids	• Lecture presentation of concepts using LCD projector, Demonstration of algorithms in lab session			

MONTH: NOVEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Chapter 8: Pointers (Contd.) **Chapter 10:** Linked Lists, Stacks and Queues	**Chapter 8: Pointers** • Pointer Arithmetic • Dynamic Operators • Pointers and arrays • Pointers and const • Passing Pointers as parameters to functions • Pointer as return type	**Chapter 8: Pointers** • Introduction to self referential structures • Passing objects through reference • The 'this' pointer **Chapter 10:** • Introduction to prefix, infix and postfix exp. • Converting an infix exp. To postfix • Evaluation of Postfix expression • Introduction to linked lists as a dynamic data structure • Need for linked lists • Basic operations on singly linked lists – traversal, insertion and deletion • Introduction to dynamic stack • Performing push and pop operations on stack Performing insertion & deletion operation in a dynamic queue structure. • Revision	**Pre-Board - I**	**Pre-Board - I**
Learning Objectives	To enable student to - • understand the difference between static and dynamic memory allocation • create dynamic data structures for data processing			
Expected Learning Outcomes	Students would be able to - • use pointers to create dynamic arrays like linked list • stack data structure - create pointers and retrieve data from it. • apply stacks in conversion and evaluation of infix and postfix exp. • insert or delete any data value from queue data structure. • learn from their mistakes and to take corrective measures for improving scores in the subject • To know the type of questions that may be asked in CBSE board pr. viva			
Assessment /Activity	• Theory and Practical assignments, Revision test after completion of the chapter			
Teaching Aids	• Lecture presentation of concepts using LCD projector, Demonstration of algorithms in lab session			

MONTH: DECEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Revision of Volume 1 Book (Chapters 1 – 10) **Development and Documentation of CBSE Project (In The Practical Sessions)**	• Distribution of Pre-Board I answer sheets and discussion of common errors, reading of best answers. • Revision of Chapter 8 and 10 • Revision / discussion of each topic and subtopic • Discussion of different types of questions asked on each topic • Practice questions as class assignment.	• Revision of Chapter 9 and 7 • Revision / discussion of each topic and subtopic • Discussion of different types of questions asked on each topic • Practice questions as class assignment.	• Revision of Chapter 1 To 6 • Revision / discussion of each topic and subtopic	• Discussion of different types of questions asked on each topic • Practice questions as class assignment.	**Common Pre- Board**
Learning Objectives	To enable students to -- • revise the syllabus in a systematic manner • help students develop a real life application software in C++ using the concepts learnt				
Expected Learning Outcomes	• Students would be able to recapitulate the concepts learnt earlier and practice their application.				
Assessment / Activity	• Oral question answer sessions, Revision assignments and tests including HOTS questions from CBSE papers				
Teaching Aids	• Black board , display of Sample paper questions using LCD projector				

MONTH: JANUARY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Revision of Volume 2 Book (Chapters 11 – 14) **Documentation of CBSE Project In Practical Sessions**	**Winter Break** **Common Pre-Board**	**Winter Break** **Common Pre-Board**	**Revision of Chapter 13 And 14** • Revision / discussion of each topic and subtopic • Discussion of different types of questions asked on each topic • Practice questions as class assignment. • Documentation of CBSE project in practical sessions	Revision **Mock Practical Exam**
Expected Learning Outcomes	Students would to be able to- • recapitulate the concepts learnt earlier and practice their application. • recapitulate the concepts learnt earlier and practice their application. • know the type of questions that may be asked in CBSE board pr. viva			
Assessment	• Oral question answer sessions, Revision assignments and tests including HOTS questions from CBSE papers			
Teaching Aids	• Black board , display of Sample paper questions using LCD projector			

Physical Education

MONTH: APRIL

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Unit I: Sports Environment & Society **Unit II:** Adventure Sports & Leadership Training	Familiarization with the course and marking scheme	**Unit I** • Meaning & Need of Sports Environment • Essential Elements of Positive Sports Environment	**Unit I** • Role of Individual In Improvement of Sports Environment	**Unit I** • Role Of Spectators & Media In Creating Positive Sports Environment • Women Participation – As Discourse & Ideology	**Unit II** • Meaning& objectives of Adventure Sports
Learning Objectives	• To know about the ways to develop positive sports environment				
Expected Learning Outcome	• Awareness about sports, significance of positive sports environment & women participation in sports				
Teaching Aids	• Discussion Method, Dictation Method, Reading Method And Practical				
Assessment	• Reflective Questions, Quiz, Pen- paper test, Practical				

MONTH: MAY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Unit II: Adventure Sports & Leadership Training	**Unit II** • Types of activities – Camping, Rock Climbing, Tracking, River Rafting & Mountaineering • Material requirement & safety measures	**Unit II** • Identification & use of Natural Resources • Conservation of surroundings	**Unit II** • Creating Leaders Through Physical Education	**Unit II** Creating Leaders Through Physical Education (Contd.)
Learning Objectives	• To create awareness for adventure activities.			
Expected Learning Outcome	• Students will be able to get familiar with nature, surroundings and importance of adventure activities			
Teaching Aids	• Discussion Method, Dictation Method, Practical			
Assessment	• Reflective Questions, Quiz, Exam ,Excursion trips, practical			

MONTH: JULY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Unit III: Sports & Nutrition **Unit IV:** Planning in Sports	**Unit III** • Balanced Diet & Nutrition: Macro & Micro Nutrients • Nutritive & Non-Nutritive • Components of Diet	**Unit III** • Eating Disorders – Anorexia Nervosa & Bulimia • Effects of Diet on Performance • Eating For Weight Control – A Healthy Weight, The Pitfalls of Dieting, Food • Intolerance & Food Myths	**Unit IV** • Meaning & Objectives of Planning • Various Committees & Its Responsibilities • Tournament – Knock-Out, League or Round Robin & Combination	**Unit IV** • Procedure To Draw Fixtures – Knock-Out (Bye & Seeding) & League (Staircase & Cyclic) • Intramural & Extramural – • Meaning, Objectives & Its Significance • Specific Sports Programme (Sports Day, Health Run, Run For Fun, Run For Specific Cause & Run For Unity)	**CYCLE TESTS**
Learning Objectives	• To know the relevance of Balanced Diet and how to plan a diet chart				
Expected Learning Outcome	• Students will be able to incorporate balanced diet in life and plan their diet according to the activity				
Teaching Aids	• Discussion Method, Dictation Method, Reading Method				
Assessment	• Reflective Questions, Quiz, Exam, practical				

MONTH: AUGUST

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Unit V: Postures **Unit VI:** Children & Sports	**Unit V** • Meaning and Concept of Correct Postures - Standing And Sitting • Advantages of Correct Posture	**Unit V** • Common Postural Deformities - Knock Knee; Flat Foot; Round Shoulders; Lordosis, Kyphosis, Bow Legs and Scoliosis • Physical Activities as Corrective Measures	**Unit VI** • Motor development in children • Factors affecting motor development	**Unit VI** • Physical & Physiological benefits of exercise on children • Advantages & disadvantages of weight training & food supplement for children • Activities & quality of life

Learning Objectives	• To know the importance of good posture and the value of sports for children
Expected Learning Outcome	• Awareness of good postures and postural deformities, benefits of activities for a healthy life.
Teaching Aids	• Discussion method, dictation method, reading method
Assessment	• Reflective Questions, Quiz, pen-paper test, practical

MONTH: SEPTEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Unit VII: Test & Measurement in Sports	**Unit VII** • Measurement of Muscular Strength – Kraus Weber Test • -Motor Fitness Test – AAPHER • Measurement of Cardio Vascular Fitness- • Harward Step Test/ • Rockport Test • Measurement of Flexibility – Sit & Reach Test	**Unit VII** • Rikli & Jones - Senior Citizen Fitness Test • Chair Stand Test for lower body strength • Arm Curl Test for upper body strength • Chair Sit & Reach Test for lower body Flexibility • Back Scratch Test for upper body Flexibility • Eight Foot up & Go Test for agility • Six Minute Walk Test for Aerobic Endurance	**Term -I Exam**	**Term -I Exam**	Paper Discussion
Learning Objectives	• To know about the utility and validity of the test.				
Expected Learning Outcome	• Students will be able to judge their capability in an event through Test and measurement.				
Teaching Aids	• Discussion method, dictation method, reading method, practical method				
Assessment	• Reflective questions, Quiz, Exam ,practical				

MONTH: OCTOBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Unit VIII : Physiology & Sports	**Unit VIII** • Physiological factor determining component of Physical Fitness	**Unit VIII** • Effect of exercise on Cardio Vascular System • Effect of exercise on Respiratory System	**Unit VIII** • Effect of exercise on Circulatory System	**Unit VIII** • Physiological changes due to ageing & role of regular exercise on ageing process
Learning Objectives	• To know about systems of the body and physiological changes			
Expected Learning Outcome	• Awareness of effects of exercises on various systems and ageing			
Teaching Aids	• Discussion method, dictation method, reading method, practical method			
Assessment	• Reflective questions, Quiz, Exam ,practical methods, practical			

MONTH: NOVEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
Unit IX: Biomechanics & Sports **Unit X:** Psychology & Sports	**Unit IX** • Projectile & factors affecting • Projectile Trajectory • Angular & Linear Movements • Introduction to Work, Power & Energy • Friction • Mechanical Analysis of Walking & Running • Understanding stress, anxiety & its management	**Unit X** • Coping Strategies – Problem Focused & Emotional Focused • Personality, its dimensions & types; Role of sports in personality development • Motivation, its type & technique • Self-esteem & Body Image	**Pre-Board -I**	**Pre-Board -I**
Learning Objectives	• To know biomechanics of the joints and psychology of sportsmen			
Expected Learning Outcome	• Awareness of biomechanical function of the joints and importance of psychology during training			
Teaching Aids	• Discussion method, dictation method, reading method			
Assessment	• Reflective questions, Quiz, Exam, practical demonstration			

MONTH: DECEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Unit XI: Training in Sports	**Unit XI** • Strength – Definition, types & methods of • improving Strength – Isometric, Isotonic & Isokinetic • Endurance - Definition, types & methods to develop • Endurance – Continuous Training, Interval Training & Fartlek Training	**Unit XI** • Speed – Definition, types & methods to develop Speed – • Acceleration Run & Pace Run • Flexibility – Definition, types & methods to improve flexibility	**Unit XI** • Coordinative Abilities – • Definition & types • Practicals	Revision	**Common Pre-Board**
Learning Objectives	• To know about the different types of training				
Expected Learning Outcome	• How training can develop various components of the sportsmen and their effects on sportsperson.				
Teaching Aids	• Discussion method, dictation method, reading method ,practical methods				
Assessment	• Reflective questions, Quiz, Exam, practical				

MONTH: JANUARY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week
	Winter Break **Common Pre-Board**	**Winter Break** **Common Pre-Board**	Revision	Revision

Evaluation System

Class XII

Examination Schedule for class XII:

XII: Term Exam	Term I		Term II	
Month	**CYCLE TESTS**	**Term I Exam**	**Pre-Board I**	**Common Pre-Board**
	According to given schedule	3rd & 4th week of Sept.	November	(end Dec to beginning Jan)
Max. Marks	50% weightage of theory exam.	100 (TH+PR)*	100 (TH+PR)*	100 (TH)*
Time Duration	1hr. 45 minutes (inclusive of reading time)	3 hrs	3 hrs	3 hrs
Syllabus	April - July	April - Sept	April – Dec.	April – Feb.
Marks dist.	*Marks distribution in each Term for Written / Practical/ Continuous Evaluation as **per CBSE guidelines** English- 100 Maths, -100 written Physics/Chemistry/Biology/ /Phy. Edu./Computer Sc /.- 70 written+30 Practical l			

Classes	Work Education [Once a session]		
XII	**Work Experience***	**General Studies ***	**Health & Physical Education***
	*grades on nine point scale to be sent to CBSE.		

General Guidelines

I) Absence from Examination

(a) As per circular by CBSE (Circular no. CBSE/Vide No. COORD/2009, dated 08.10.2009)75% attendance required for all classes.

(b) In case a student joins late due to late admission or on genuine medical grounds, his/her percentage will be calculated from the date of admission.

(c) **Appearing for Assignments / Summative Assessment / Term Exam is mandatory.**

(d) In case a student is absent on medical grounds, leave application to be submitted prior to the Exam with proper sanction from the Head.

(e) Students representing schools in any Inter-school, Inter-Zone, Inter-State Competitions would be tested after the competition is over. Suitable time for preparation would be given to them.

II) Unfair Means

a. Invigilation duties during Assignments / Examinations, to be done vigilantly. In case a student uses unfair means, the Answer Sheet to be cancelled immediately & a new sheet to be issued. Such cases to be brought immediately to the notice of the Exam Department for appropriate action also a warning letter to be issued further to the parents.