DELHI PUBLIC SCHOOL DHALIGAON

SYLLABUS BREAK UP

CLASS: XI (SCIENCE)

SESSION: 2025-26

NAME:-_____

SECTION:-_____ ROLL NO:-_____

MONTH	NO. OF WORKING DAYS
APRIL	03
MAY	25
JUNE	16
JULY	10
AUGUST	23
SEPTEMBER	23
OCTOBER	17
NOVEMBER	23
DECEMBER	21
JANUARY	19
FEBRUARY	22
MARCH	23

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SUBJECT:- ENGLISH

Sl. No.	Month	Section	Topics and sub topics
1	APR	Literature	A Photograph
2	MAY	Literature, Language & Comm. Skills	The Portrait of a Lady The Summer of the beautiful white horse Poster Drafting Tense Forms Comm. Skills- EXTEMPORE
3	JUNE	Literature, Language & Comm. Skills	The Laburnum Top We're not afraid to die… Note Making Situation Vacant -Ad Comm. Skills-SPEECH
4	JULY	Literature, Language & Comm. Skills	Discovering Tut The Voice of the rain Clause Re - ordering of sentences Comm. Skills-INTERVIEW
5	AUG	Literature, Language & Comm. Skills	The Adventure The Address Childhood For Sale & To let -Ad Situation Wanted - Ad Speech/Debate Writing Comm. Skills-INTERVIEW
6	SEPT	Literature,	HALF YEARLY EXAM Silk Road

		Language	Comm. Skills-EXTEMPORE
7	**OCT**	Literature, Language & Comm. Skills	The Tale of melon City Tense Forms Father to son Comm. Skills-DEBATE
8	**NOV**	Literature, Language & Comm. Skills	Mother's Day Lost & Found ad Speech writing Report writing Comm. Skills- PRODUCT REVIEW
9	**DEC**	Literature, Language & Comm. Skills	Birth Poster Drafting Article Writing Comm. Skills-REPORTING
10	**JAN**	Literature, Language & Comm. Skills	Report Writing ALS PRACTICALS Clause (Revision)
11	**FEB**	Literature, Language & Comm. Skills	For Sale & To Let Ads(Revision) Debate writing(Revision) The Adventure (Revision)
12	**MAR**		**TERM II EXAMINATION**

SUBJECT:-MATHEMATICS

Sl. No.	Month	Chapter /Unit No.	Topics and sub topics
1	APR	**Unit-III: Coordinate Geometry** **1.Straight Lines**	Few basic concepts required to link maths with other subjects (e,g PMI, logarithms ,trigonometry **,Binomial theorem**.**Limits and Derivatives.**etc) **1. Straight Lines**: Brief recall of two-dimensional geometry from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form, Distance of a point from a line.
2	MAY	Unit-III: Coordinate Geometry **1.Straight Lines** **2.Conic Sections**	**1. Straight Lines**: Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form, Distance of a point from a line. **2. Conic Sections**: Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle. **ACTIVITY:1) To construct different types of conic sections.ACTIVITY:2) To construct an ellipse when two fixed points are givenpractically.**
3	JUNE	**Unit-III:** **3. Introduction to Three-dimensional**	**3. Introduction to Three-dimensional Geometry:** Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points**.[section formula and**

		Geometry **Unit-I:1 Sets** **Relations and Functions**	**related problems]** 1. **Sets**: Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement. 2. **Relations &Functions**: Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (up to R x R x R) **ACTIVITY:3) To represent set theoretic operations using Venn diagrams ,ACTIVITY: 4) To verify distributive law for three given non-empty. sets A, B and C.**
4	**JULY**	**Unit-I:** **2. Relations & Functions**	2. **Relations &Functions**: Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions.

		3. Trigonometric Functions	3. **Trigonometric Functions**: Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity $\sin^2x + \cos^2x = 1$, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs
5.	**AUG**	**3. Trigonometric Functions** **Unit-IV: Calculus** **1. Limits and**	3. **Trigonometric Functions**: Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity $\sin^2x + \cos^2x = 1$, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing sin (x±y) and cos (x±y) in terms of sinx, siny, cosx&cosy and their simple applications. Deducing identities like the following: tan(x ± y) , cot(x ± y) Identities of sinα ± sinβ ,cosα±cosβ , Identities related to sin2x, cos2x, tan2x, sin3x, cos3x and tan3x. **(Trigonometric equation and General solutions) ACTIVITY:5) To prepare a model to illustrate the values of sine function and cosine function for different angles which are multiples of Π and Π/2.** **1. Limits and Derivatives**: Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition

		Derivatives	of derivative relate it to scope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.
6.	**SEPT**	**Unit-II:** Algebra 1.C**ompleNumbers and Quadratic Equations** 2. **Linear inequalities**	1. **Complex Numbers and Quadratic Equations**: Need for complex numbers, especially √−1, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane**(Polar form)** 2. **Linear inequalities**. Algebraic solutions of linear inequalities in one variable and their representation on the number line.**(Graph of linear inequalities)** **HALF YEARLY EXAMINATION**
7	**OCT**	**Unit-II:** **5.Sequence and Series**	**5. Sequence and Series**: :(Introduction) 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.**[A.P. and related questions]** **ACTIVITY:6) To obtain formula for the sum of squares of first n-natural numbers.** **ACTIVITY:7) An alternative approach to obtain formula for the sum of squares of first n natural numbers.**

8	**NOV**	**Unit-II:** **3. Permutations and Combinations** **4. Binomial Theorem**	**3. Permutations and Combinations**: Fundamental principle of counting. Factorial n. (n!) Permutations and combinations, derivation of Formulae for ^{n}Pr and ^{n}Cr and their connections, simple applications. : Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications. **4**. **Binomial Theorem**: Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications**.(questions based on general term,middle term ,independent term etc. may be asked in exam)**
9	**DEC**	**Unit-II:** **4. Binomial Theorem** **Unit-IV: Calculus** **1. Limits and Derivatives** Unit-V Statistics and Probability 1**. Statistics**	4. Binomial Theorem: Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications.(questions based on general term,middle term ,independent term etc. may be asked in exam) **ACTIVITY: 8)To construct a Pascal's Triangle and to write binomial expansion for a given positive integral exponent** 1**. Statistics**: Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.

10	**JAN**	Unit-V Statistics and Probability 1**. Statistics** **2. Probability**	1**. Statistics**: Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data. **2. Probability**: Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events
11	**FEB**	**2.Probability**	2. Probability: Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events.ACTIVITY:9) To Visualise the position and coordinates of point in space practically. **ACTIVITY: 10) To write the sample space, when a coin is tossed once, two times, three times, four times.**
12	**MAR**		**Term-II EXAM**

SUBJECT:-PHYSICS

Sl. No.	Month	Chapter /Unit No.	Topics and sub topics
1	APR	1	**Units and Measurements** Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units.
2	MAY	1,2	Significant figures, Determining the uncertainty in result. Dimensions of physical quantities, dimensional analysis and its applications. **Kinematics** Frame of reference, Motion in a straight line: Elementary concepts of differentiation and integration for describing motion. Uniform and non-uniform motion, average speed and average velocity and instantaneous velocity. Uniformly accelerated motion, velocity - time and position-time graphs. **PRACTICAL:** 1.To measure diameter of a small spherical/cylindrical body and to measure internaldiameter and depth of a given beaker/calorimeter using VernierCallipers and hence find its volume. **2.** To measure diameter of a given wire and thickness of a given sheet using screwgauge.
3.	JUNE	2,3	**Kinematics** Relations for uniformly accelerated motion (graphical and calculus treatment). Scalar and vector quantities; Position and displacement vectors, general vectors and their notations;equality of vectors, multiplication of vectors by a real number;

			PRACTICAL: 3.To determine radius of curvature of a given spherical surface by a spherometer.
4	**JULY**	**3**	**Kinematics** addition and subtraction of vectors,Unit vector; Resolution of a vector in a plane ,rectangular components Scalar and Vector product of vectors.Motion in a plane, Cases of uniform velocity and uniform acceleration-projectile motion. Uniform circular motion. **PRACTICAL:** 4. Using a simple pendulum, plot its L-T 2 graph and use it to find the effective length of second's pendulum.
5	**AUG**	**4**	**Laws of Motion:** Intuitive concept of force. Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion. Law of conservation of linear momentum and its applications. Equilibrium of concurrent forces. Static and kinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on banked road). **PRACTICAL:** **5.** To find the weight of a given body using parallelogram law of vectors. **6.** To determine the surface tension of water by capillary rise method.
6	**SEPT**	**5**	**REVISION**

			HALF YEARLY EXAMINATION **Work, Energy and Power** Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: non-conservative forces: motion in a vertical circle; elastic and inelastic collisions in one and two dimensions **PRACTICAL:** 7. To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.
7	**OCT**	**6**	**Motion of System of Particles and Rigid Body** Centre of mass of a two-particle system, momentum conservation and centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod.Moment of a force, torque, angular momentum, laws of conservation of angular momentum and its applications. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration. Values of moments of inertia for simple geometrical objects(no derivation). **PRACTICAL:** 8. To determine Young's modulus of electricity of the material of a given wire. OR

			To find the force constant of a helical spring by plotting a graph between load and extension.
8.	**NOV**	**7,8**	**Gravitation** Keplar's laws of planetary motion. The universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Gravitational potential energy and gravitational potential. Escape velocity. Orbital velocity of a satellite. Energy of an orbiting satellite. **Properties of Bulk Matter** Elasticity, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity, Poisson's ratio; elastic energy. Application of elastic behavior of materials (qualitative idea only).
9	**DEC**	**9**	**Properties of Bulk Matter** Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes). Effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its simple applications (Torricelli's law and Dynamic lift). Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise.

10	JAN	10,11,12	**Thermal properties of Matter** Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity. Heat transfer-conduction, convection and radiation, thermal conductivity, Qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law. **Thermodynamics** Thermal equilibrium and definition of temperature, zeroth law of thermodynamics, heat, work and internal energy. First law of thermodynamics, Second law of thermodynamics: Thermodynamic state variable and equation of state. Change of condition of gaseous state - isothermal, adiabatic, reversible, irreversible, and cyclic processes. **Behaviour of Perfect Gases and Kinetic Theory of Gases** **Kinetic Theory:** Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.

11	FEB	13,14	**Oscillations and Waves** **Oscillations** Periodic motion - time period, frequency, displacement as a function of time, periodic functions and their applications. Simple harmonic motion (S.H.M), uniform circular motion and its equations of motion; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of expression for its time period. **Waves** Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats **SYLLABUS COMPLETION** **REVISION**
12	MAR		**TERM-II EXAM**

SUBJECT:- CHEMISTRY

Sl. No.	Month	Chapter /Unit No.	Topics and sub topics
1	APR	1	**Some Basic Concepts of Chemistry:-** General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules. Atomic and

			molecular masses.
2	**MAY**	1 2	**Some Basic Concepts of Chemistry:- (contd)** mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry **Structure of Atom:-** Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship. **PRACTICAL :- Salt analysis**
3	**JUNE**	2 3	**Structure of Atom:- (contd)** Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals. **Classification of Elements and Periodicity in Properties** Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table,

			periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100. **PRACTICAL :- Salt analysis**
4	**JULY**	4	**<u>Chemical Bonding and Molecular Structure :-</u>** Valence electrons, ionic bond, covalent bond, bond parameters, Lewis's structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, **PRACTICAL :- Salt analysis**
5	**AUG**	4 8 6	Chemical Bonding and Molecular Structure (Contd) :- 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. Redox Reactions:- Concept of oxidation and reduction, redox reactions, oxidation number balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions. **<u>Chemical Thermodynamics :-</u>** 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,

		7	heat capacity and specific heat, measurement of ΔU and ΔH. **PRACTICAL :- Salt analysis** **Chemical Thermodynamics :- (contd)** Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction). **Equilibrium. :-** Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle. **PRACTICAL :- Titration**
6	**SEPT**		**Revision & HALF YEARLY EXAMINATION**
7	**OCT**	7	**Equilibrium. :- (contd)** 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).
8	**NOV**	12	**Organic Chemistry -Some Basic Principles and Techniques** General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect.
9	**DEC**	12	**Organic Chemistry -Some Basic Principles and Techniques:- (contd.)** resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions. **Hydrocarbons:-** Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis.
		12 13	**Hydrocarbons:- (contd.)** **Alkenes** - Nomenclature, the structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and

10	**JAN**		peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition. Alkynes - Nomenclature, the structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water
11	**FEB**	13	**Hydrocarbons:- (contd.)** **AromaticHydrocarbons:** Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of the functional group in monosubstituted benzene. Carcinogenicity and toxicity. **REVISION**
12	**MAR**	13	**TERM II EXAMINATION.**

SUBJECT:- BIOLOGY

Sl. No.	Month	Chapter /Unit No.	Topics and sub topics
1	**APR**	Chapter-5& 3	: **Morphology of Flowering Plants** Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of family Solanaceae **Biological Classification:** Five kingdom classification; Salient features and classification of Monera,
2	**MAY**	Chapter-4,1& 6	**Plant Kingdom:** Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae (Topics excluded – Angiosperms, Plant Life Cycle and Alternation of Generations) **The Living World**:Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of

			species and taxonomical hierarchy; binomial nomenclature **Anatomy of Flowering Plants** Anatomy and functions of tissue systems in dicots and monocots. **Biological Classification:**Protista and Fungi into major groups; Lichens, Viruses and Viroids. **Animal Kingdom:** Salient features and classification of animals, non-chordates up to phyla level.
3	**JUNE**	Chapter-7 & 8	**Cell-The Unit of Life** Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles,mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus. **Animal Kingdom:** chordates up to class level (salient features and at a few examples of each category). **Structural Organisation in Animals:** Morphology, Anatomy and functions of different systems (digestive, circulatory,respiratory,) of frog.
4	**JULY**	Chapter-7 & 9	**Biomolecules** Chemical constituents of living cells: biomolecules, structure and function of proteins **Structural Organisation in Animals:** Morphology, Anatomy and functions of different systems (digestive, nervous and reproductive system) of frog
5	**AUG**	Chapter-9 & 17	circulatory,respiratory, nervous and reproductive) of frog contd…**Biomolecules** 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) **Breathing and Exchange of Gases** : Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans -
6	**SEPT**		. **Revision & HALF YEARLY EXAMINATION**
7	**OCT**	Chapter-10 & 18	**Cell Cycle and Cell Division** :Cell cycle, mitosis, meiosis and their significance **Breathing and Exchange of Gases** : exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders **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;
8	**NOV**	Chapter-14, 19 & 20	**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**.** **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 **Body Fluids and Circulation:** double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure. **Excretory Products and their Elimination** : Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system – structure and function; urine formation, osmoregulation;
9	**DEC**	Chapter-14 & 21	renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant. **Excretory Products and their Elimination** : regulation of kidney function - renin -angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders - uremia, **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. TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient
10	**JAN**	Chapter-15 & 22	**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. **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
11	**FEB**		**Chemical Coordination and Integration**: Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goitre, diabetes, Addison's disease. Note: Diseases related to all the human physiological systems to be taught in brief **REVISION**
12	**MAR**		**TERM II EXAMINATION**

SUBJECT:-COMPUTER SCIENCE

Sl. No.	Month	Chapter /Unit No.	Topics and sub topics
1	**APR**	Unit II: Computational Thinking and Programming – 1	● Introduction to problem solving: Steps for problem solving (analysing the problem, developing an algorithm, coding, testing and debugging). representation of algorithms using flow chart and pseudo code, decomposition ● Familiarization with the basics of Python programming: Introduction to Python, features of Python, executing a simple "hello world" program, execution modes: interactive mode and script mode, Python character set, Python tokens (keyword, identifier, literal, operator, punctuator), variables, concept of l-value and r-value, use of comments
2	**MAY**	Unit I: Computer Systems and Organisation Unit II: Computational Thinking and Programming	● Basic Computer Organisation: Introduction to computer system, hardware,software, input device, output device, CPU, memory (primary, cache and secondary), units of memory ● Types of software: system software (operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler & interpreter), application software ● Operating system (OS): functions of operating system, OS user interface ● Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth table, De Morgan's laws and logic circuits ● Knowledge of data types: number (integer, floating point, complex), boolean, sequence (string, list, tuple),

		– 1	none, mapping (dictionary), mutable and immutable data types ● Operators: arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators(is, is not), membership operators(in, not in) ● Expressions, statement, type conversion & input/output: precedence of operators, expression, evaluation of expression, python statement, type conversion (explicit & implicit conversion), accepting data as input from the console and displaying output ● Errors: syntax errors, logical errors, runtime errors
3	**JUNE**	Unit I: Computer Systems and	● Number system: Binary, Octal, Decimal and Hexadecimal numbersystem; conversion between number systems.
4	**JULY**	Organisation Unit II: Computational Thinking and Programming – 1	● Encoding schemes: ASCII, ISCII and UNICODE (UTF8, UTF32) ● Flow of control: introduction, use of indentation, sequential flow, conditional and iterative flow control ● Conditional statements: if, if-else, if-elif-else, flowcharts,
5	**AUG**	Unit II: Computational Thinking and Programming – 1	simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number ● Iterative statements: for loop, range function, while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number etc
6	**SEPT**		**Revision & HALF YEARLY EXAMINATION**
7	**OCT**	Unit II: Computational Thinking and Programming – 1	● Strings: introduction, indexing, string operations (concatenation, repetition, membership & slicing), traversing a string using loops, built-in functions: len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(), lstrip(), rstrip(), strip(), replace(), join(), partition(), split() ● Lists: introduction, indexing, list operations (concatenation, repetition, membership & slicing), traversing a list using loops, built-in functions: len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(),

			sum(); nested lists, suggested programs: finding the maximum, minimum, mean of numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list ● Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership & slicing), built-in functions: len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple, suggested programs: finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple ● Dictionary: introduction, accessing itemsin a dictionary using keys, mutability of dictionary (adding a new item, modifying an existing item), traversing a dictionary, built-in functions: len(), dict(), keys
8	**NOV**	Unit II: Computational Thinking and Programming – 1	(), values(), items(), get(), update(), del, clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), count(), sorted(), copy● Dictionary: suggested programs : count the number of times a character appears in a given string using a dictionary, create a dictionary with names of employees, their salary and access them ● Introduction to Python modules: Importing module using 'import ' and using from statement, Importing math module (pi, e,sqrt, ceil, floor, pow, fabs, sin, cos, tan); random module (random, randint, randrange), statistics module (mean, median, mode)
9	**DEC**	Unit III: Society, Law and Ethics	(plagiarism, copyright infringement, trademark infringement), open source softwares and licensing ● Strings: introduction, indexing, string operations (concatenation, repetition, membership & slicing), traversing a string using loops, built-in functions: len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(), lstrip(), rstrip(), strip(), replace(), join(), partition(), split() ● Lists: introduction, indexing, list operations (concatenation, repetition, membership & slicing), traversing a list using loops, built-in functions: len(), list(), append(), extend(), insert(), count(), index(),

			remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists, suggested programs: finding the maximum, minimum, mean of numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list ● Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership & slicing), built-in functions: len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple, suggested programs: finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple ● Dictionary: introduction, accessing itemsin a dictionary using keys, mutability of dictionary (adding a new item, modifying an existing item), traversing a dictionary, built-in functions: len(), dict(), keys(), (Creative Commons, GPL and Apache) ● Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber crime
10	**Jan**	Unit III: Society, Law and Ethics	● Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying. ● Safely accessing web sites: malware, viruses, trojans, adware ● E-waste management: proper disposal of used electronic gadgets ● Indian Information Technology Act (IT Act) ● Technology & Society: Gender and disability issues while teaching and using computers
11	**Feb**		Revision for Second Term
12	**Mar**		**ANNUAL EXAMINATION**

SUBJECT:-PHYSICAL EDUCATION

Sl.	Month	Chapter	Topics and sub topics

No.		/Unit No.	
1	APR	1	(Unit-1) Changing Trends and Careers in Physical Education 1. Concept, Aims & Objectives of Physical Education 2. Development of Physical Education in India – Post Independence 3. Changing Trends in Sports- playing surface, wearable gear and sports equipment, technological advancements 4. Career options in Physical Education 5. Khelo-India Program and Fit – India Program
2	MAY	2	(Unit-2)Olympism Value Education 1. Olympism – Concept and Olympics Values (Excellence, Friendship & Respect) 2. Olympic Value Education – Joy of Effort, Fair Play, Respect for Others, Pursuit of Excellence, Balance Among Body, Will & Mind (Unit-2)3. Ancient and Modern Olympics 4. Olympics - Symbols, Motto, Flag, Oath, and Anthem 5. Olympic Movement Structure - IOC, NOC, IFS, Other members. Practical-1: Fitness tests administration. (SAI Khelo India Test)
3	JUNE	3	(Unit–3) Yoga 1. Meaning and importance of Yoga 2. Introduction to Astanga Yoga 3. Yogic Kriyas (Shat Karma) 4. Pranayama and its types. 5. Active Lifestyle and stress management through Yoga Practical-2: Procedure for Asanas, Benefits¬& Contraindication for any two Asanas for each lifestyle disease.
4	JULY	4	(Unit – 4) Physical Education and Sports for Children with Special Needs 1. Concept of Disability and Disorder 2. Types of Disability, its causes & nature (Intellectual disability, Physical disability).
5	AUG	5	(Unit – 4)3. Disability Etiquette Aim and objectives of Adaptive Physical Education. 5. Role of various professionals for children with special 4. needs (Counselor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist, and Special Educator) (Unit – 5) Physical Fitness, Wellness, and Lifestyle 1. Meaning & importance of Wellness, Health, and Physical Fitness. 2. Components/Dimensions of Wellness, Health, and Physical Fitness 3. Traditional Sports & Regional Games for promoting wellness 4. Leadership through Physical Activity and Sports 5. Introduction to First Aid – PRICE

6	**SEPT**		**REVISION** **HALF YEARLY EXAMINATION**
7	**OCT**	6	(Unit–6) Test, Measurement & Evaluation 1. Define Test, Measurements and Evaluation. 2. Importance of Test, Measurements and Evaluation in Sports. (Unit–6) 3. Calculation of BMI, Waist – Hip Ratio, Skin fold measurement (3-site) 4. Somato Types (Endomorphy, Mesomorphy&Ectomorphy) 5. Measurements of health-related fitness
8	**NOV**	7	(Unit–7) Fundamentals of Anatomy, Physiology in Sports 1. Definition and importance of Anatomy and Physiology in Exercise and Sports. 2. Functions of Skeletal System, Classification of Bones, and Types of Joints. (Unit–7) 3. Properties and Functions of Muscles. 4. Structure and Functions of Circulatory System and Heart. 5. Structure and Functions of Respiratory System
9	**DEC**	8	(Unit – 8) Fundamentals Of Kinesiology And Biomechanics in Sports 1. Definition and Importance of Kinesiology and Biomechanics in Sports. 2. Principles of Biomechanics (Unit – 8) Fundamentals Of Kinesiology And Biomechanics in Sports 3. Kinetics and Kinematics in Sports 4. Types of Body Movements - Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation 5. Axis and Planes – Concept and its application in body movements
10	**JAN**	9	(Unit-9) Psychology and Sports 1. Definition & Importance of Psychology in Physical Education & Sports; 2. Developmental Characteristics at Different Stages of Development; (Unit-9) Psychology and Sports 3. Adolescent Problems & their Management; 4. Team Cohesion and Sports; 5. Introduction to Psychological Attributes: Attention, Resilience, Mental Toughness Practical-3Anyone one IOA recognized Sport/Game of choice. Labelled diagram of Field¬& Equipment. Also mention its Rules, Terminologies & Skills
11	**Feb**	10	(Unit-10) Training & Doping in Sports 1. Concept and Principles of Sports Training 2. Training Load: Over Load, Adaptation, and

			Recovery (Unit-10) Training & Doping in Sports 3. Warming-up & Limbering Down – Types, Method & Importance 4. Concept of Skill, Technique, Tactics & Strategies 5. Concept of Doping and its disadvantages.
12	**Mar**		REVISION ANNUAL EXAMINATION

I/C Academic

Principal