DELHI

PUBLIC

SCHOOL

DHALIGAON

SYLLABUS BREAK UP

CLASS: XII (SCIENCE)

SESSION:2026-27

NAME:-_____

SECTION:-_____ **ROLL NO:-**_____

MONTH	NO. OF WORKING DAYS
APRIL	20
MAY	23
JUNE	18
JULY	10
AUGUST	24
SEPTEMBER	23
OCTOBER	17
NOVEMBER	22
DECEMBER	21
JANUARY	20
FEBRUARY	22
MARCH	24

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SUBJECT-ENGLISH

SL NO	MONTH	TOPICS&SUB.TOPIC	ACTIVITY/PRAC
1	April'26	My mother at Sixty Six The Last Lesson The Lost Spring The Third Level Notice Drafting	Contrast Photography Letter to younger self Last Post/ Last journal entry Mother tongue wall Lost Spring/The world Shadow Journalist 1894 Travel Brochure The Psychiatrist's file(Conversation) Class board décor
2	May'26	Deep Water Keeping Quiet The Tiger King Letter to the Editor Reading Comprehension	 All we have to fear PODCAST 60 seconds Black out Stop the war collage Mock Press Conference Wooden Tiger Obituary(Humour)
3	June'26	The Rattrap The Journey to the end of the Earth Article Writing	Metaphor Map Photo Essay/Digital Poster Newspaper/Journal Reading
4	July'26	The Thing of Beauty The Interview Formal Invitation & Replies	Nature Walk & Haiku Podcast Invitation Letter Collage
5	Aug'26	Poets and Pancakes The Enemy The Roadside Stand	The Gemini Studio Vlog The Boss Interview Inner Conflict T-chart Pitch your product Social Media Campaign
6	Sept'26	FIRST TERM Indigo Informal Invitation & Replies	The court room trial enactment
7	Oct'26	Aunt Jennifer's Tiger On the face of it Job application	Symbolism Sketch Modernising Aunt Jennifer The Ugly(?)Beautiful(?) Walk
8	Nov'26	Memories of Childhood Going Places Reading Comprehension REVISION 1st PRE-BOARD	The 'untouchability' awareness campaign Sophie's Room mood board DaneyCassy -FACT CHECK
9	Dec'26	1st & 2nd PRE-BOARD	Continued
10	Jan'27	2nd PRE-BOARD	********

SUBJECT:-MATHEMATICS

SL NO	MONTH	CHAP/UNIT NO	TOPICS &SUB.TOPI C
1	April'26	Ch:3 Ch:4	**Foundation week** Revisiting all important concepts of Class 11 which are useful in Class 12. **Matrices** Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operations on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non- commutativity of multiplication of matrices and existence of nonzero matrices whose product is the zero matrix (restrict to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries) **Determinants** Determinant of a square matrix (up to 3 x 3 matrices), minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix. **** Properties of determinants are to be explained. Simple example may be stated.***
2	May'26	Ch:5 Ch:6:	**Continuity and Differentiability** Continuity and differentiability, chain rule, derivative of composite functions, derivatives of inverse trigonometric functions like $\sin^{-1}x$, $\cos^{-1}x$ and $\tan^{-1}x$, derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives. **Applications of Derivatives** Applications of derivatives: rate of change of quantities, increasing/decreasing functions, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real- life situations). Practical-1 **** Idea of a slope of a tangent and a normal to a curve is to be given with its equation only.*** Practical-2,3
3	June'26	Ch:7	**Integration** Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them. $\int \frac{dx}{x^2 \pm a^2} dx , \int \frac{dx}{\sqrt{x^2 \pm a^2}} dx$

			$\int \frac{dx}{\sqrt{a^2-x^2}}, \int \frac{dx}{ax^2+bx+c}$ $\int \frac{dx}{\sqrt{ax^2+bx+c}}, \int \frac{px+q}{ax^2+bx+c}$ $\int \frac{px+q}{\sqrt{ax^2+bx+c}}, \int \sqrt{a^2 \pm x^2}\, dx$ $\int \sqrt{x^2-a^2}dx\,, \int \sqrt{ax^2+bx+c}\, dx$ Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals. **Applications of Integration** Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only) **Linear Programming Problem** Introduction, related terminology such as constraints, objective function, optimization.
		Ch:8 **Ch:12**	
4	July'26	**Ch:12** **Ch:9**	**Linear Programming Problem** Graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints). **Ch:9: Differential Equation** Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type: $\frac{dy}{dx} + py = q$, where p and q are functions of x or constants. Practical -4,5,6,7 $\frac{dx}{dy} + px = q$, where p and q are functions of y or constants. **** Formation of differential equation is to be introduced with simple example.***

5	Aug'26	**Ch:1** **Ch:2** **Ch:10** **Chap:11**	**Relation and Function** Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions. Practical -4,5,6,7 **Inverse Trigonometry** Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions. **** Properties of Inverse Trigonometric Functions are to be explained.*** **Vector Algebra** Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors. Practical: 8 **3-D Geometry** Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line. Practical: 9
6	Sept'26		**Revision for first terminal examination**
7	Oct'26	**Ch:11**	**3-D Geometry** Skew lines, shortest distance between two lines. Angle between two lines. **Ch:13: Probability** Conditional probability, multiplication theorem on probability, independent events. Practical :10
8	Nov'26	 **Ch:13**	**Probability** Total probability, Bayes' theorem. **** Concept of random variable is to be introduced.*** **Revision , first preboard examination**
9	Dec'26		**First and 2nd preboard examination**
10	Jan'27		**2nd preboard examination**

SUBJECT-PHYSICS

SL NO	MONTH	CHAP/UNIT NO	TOPICS &SUB.TOPI C	ACTIVITY/PRAC
1	April'26	1 2	*Basic concept discussion from previous learning.* **1.Electric Charges and Fields-** Electric charges, Conservation of charge, Coulomb's law-force between two- point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside). **2.Electrostatic Potential and Capacitance-** Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two-point charges and of electric dipole in an electrostatic field. Conductors and insulators, free charges and bound charges inside a conductor.	**Practicals**: 1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current. 2. To find resistance of a given wire / standard resistor using metre bridge.
2	May'26	2 3	**2.Electrostatic Potential and Capacitance-(contd.)** Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor (no derivation, formulae only). **3.Current Electricity-** Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, temperature dependence of resistance,	**Practicals**: 3. To verify the laws of combination (series) of resistances using a metre bridge. **OR** To verify the laws of combination (parallel) of resistances using a metre bridge. 4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit. **Activity**: 1. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a powersource.
3	June'26	3	**3.Current Electricity-(contd.)** Internal resistance of acell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's rules, Wheatstone bridge. **14.Semiconductor Electronics: Materials, Devices and Simple Circuits-** Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier.	**Practicals**: 5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation. **Activity**: 2. 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.

4	July'26	**9** **12.**	**9.Ray Optics and Optical Instruments-** Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism. Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers. **12.Atoms**- Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of nth possible orbit, velocity and energy of electron in nth orbit, hydrogen line spectra (qualitative treatment only).	**Practicals**: 6. To find the value of v for different values of u in case of a concave mirror and to find the focal length. **Activity**: 3.To assemble the components of a given electrical circuit.
5	Aug'26	**13** **4** **5**	**13.Nuclei-** Composition and size of nucleus, nuclear force Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion. **4.Moving Charges and Magnetism-** Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire. Straight solenoid (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields**.** Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere, torque experienced by a current loop in uniform magnetic field; Current loop as a magnetic dipole and its magnetic dipole moment, moving coil galvanometer- its current sensitivity andconversion to ammeter and voltmeter. **5.Magnetism and Matter-** Bar magnet, bar magnet as an equivalent solenoid (qualitative treatment only), magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis (qualitative treatment only),	**Practicals**: 7. To find the focal length of a convex mirror, using a convex lens. **Activity**: 4.To observe diffraction of light due to a thin slit.
6	Sept'26	**5.**	**5.Magnetism and Matter-** torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines. Magnetic properties of materials- Para-, dia- and ferro – magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties. **6.Electromagnetic Induction Alternating Current-** Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction. **Revision(Term I)**	**Practicals**: 8. To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v. **Activity**: 5.To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
7	Oct'26	**7.**	**7.Alternating Current-** Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LCR series circuit (phasors only), resonance, power in AC circuits, power factor, wattless current. AC generator, Transformer. **8.Electromagnetic Waves-**	**Activity**: 6.To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab

		8. 10.	Basic idea of displacement current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses. **10.Wave Optics-** Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts.	
8	Nov'26	10 11.	**10.Wave Optics-** Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width (No derivation final expression only), coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima (qualitative treatment only). **11.Dual Nature of Radiation and Matter-(contd.)** Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Experimental study of photoelectric effect Matter waves- wave nature of particles, de-Broglie relation. **1st PRE-BOARD**	
9	Dec'26		**1st& 2nd PRE-BOARD**	
10	Jan'27		**2nd PRE-BOARD**	

SUBJECT-CHEMISTRY

SL NO	MONTH	CHAP/UNIT NO	TOPICS & SUB.TOPI C	ACTIVITY/PRAC
1	April'26	1	**Solutions:** Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties , abnormal molecular mass, Van't Hoff factor	**PRACTICAL – Salt Analysis**
2	May'26	3 10	**Chemical Kinetics:** Rate of chemical reaction, factors influencing rate of chemical reaction,integrated rate equation, Pseudo 1st reaction, temperature dependence of rate of reaction, Collision Theory **Biomolecules:-** Carbohydrates, Proteins, Vitamins, Nucleic Acids	**PRACTICAL – Salt Analysis**
3	June'26	2	**Electrochemistry :-** Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell conductance in electrolytic solutions, specific and molar conductivity (contd…)	**PRACTICAL – Titration-1**
4	July'26	2 4	**Electrochemistry :-** variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion **d and f Block Elements:-** General introduction, electronic configuration, occurrence and characteristics of transition metals.	**PRACTICAL – Titration-2**

5	Aug'26	4 5 6	**<u>d and f Block Elements (contd…):-</u>** general trends in properties of the first-row transition metals – metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$ **Lanthanoids –** Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences **Actinoids -** Electronic configuration, oxidation states and comparison with lanthanoids **<u>Coordination Compounds:-</u>** Werner's theory Introduction, ligands, coordination number ,IUPAC nomenclature, isomerism, VBT, CFT, the importance of coordination compounds . **<u>Haloalkanes and Haloarenes</u>**.:- **Haloalkanes:-** Nomenclature, nature of C–X bond, physical and chemical properties optical rotation ,mechanism of substitution reactions .(contd---)	**PRACTICAL – functional group analysis**
6	Sept'26		**REVISION (TERM-I)**	
7	Oct'26	6 7	**Haloarenes:** Nature of C–X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only). Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT. **Alcohols:** Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol	

8	Nov'26	7 8	**Phenols:** Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols. **Ethers:** Nomenclature, methods of preparation, physical and chemical properties, uses. **Aldehydes and Ketones:** Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses. **1st PRE BOARD**	**PROJECT**
9	Dec'26	8 9	**Carboxylic Acids:** Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses. **Amines:**Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines. **Diazonium salts:** Preparation, chemical reactions and importance in synthetic organic chemistry. 1st& 2nd**PRE BOARD**	
10	Jan'27		SECOND **PRE BOARD**	

SUBJECT:-BIOLOGY

Sl. No.	Month	Chapter /Unit No.	Topics and sub topics	PRACTICAL/ACTIVITY
1	April'26	**5**	**Principles of Inheritance and Variation** :Heredity and variation: Mendelian inheritance; deviations from Mendelism – incomplete dominance, co-dominance. multiple alleles and inheritance of blood groups. Pleiotropy; elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes. **Human Reproduction :** Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis -spermatogenesis and oogenesis; menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).	**PRAC: MONOHYBRID CROSS** **STUDY OF GAMETE DEVELOPMENT**
2	May'26	**5**	**Principles of Inheritance and Variation:** Chromosomes and genes; Sex determination - in humans, birds and honey bee; linkage and crossing over. Sex linked inheritance - haemophilia, colour blindness; Mendelian disorders in humans - thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes **Reproductive Health** : Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control - need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary idea for general awareness). **Human Health and Diseases**: Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concepts of immunology - vaccines; cancer,HIV	**PRAC:DIHYBRID CROSS** **PEDIGREE ANALYSIS** **STUDY OF BLASTULA** **STUDY OF DISESASE CAUSING ORGANISMS**
3	June'26	**2**	**Sexual Reproduction in Flowering Plants**: Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; out breeding devices . Pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation **Human Health and Diseases**, AIDS; Adolescence - drug and alcohol abuse. **Microbes in Human Welfare :** Microbes in food processing, industrial production, sewage treatment	**PRAC: POLLEN SLIDE** **ACTIVITY: STUDY OF SEWAGE TREATMENT MODEL**
4	July'26	**6**	**Molecular Basis of Inheritance**: Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging. **Microbes in Human Welfare:** Energy generation andmicrobes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use	**ACTIVITY:LIST OF MICROBES USEFULANIMALS**

5	Aug'26	**6**	**Molecular Basis of Inheritance** : DNA replication; Central Dogma; transcription, genetic code, translation; gene 8 expression and regulation - lac operon; Genome, Human and rice genome projects; DNA fingerprinting Evolution Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution. **Organisms and Populations : :** population attributes - growth, birth rate and death rate, age distribution , Population interactions – mutualism.	**PRACTICAL: SPECIMEN SHOWING SYMBIOTIC ASSOCIATION**
6	Sept'26	**7**	**Evolution** :Mechanism of evolution - variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy - Weinberg's principle; adaptive radiation; human evolution. **Organisms and Populations**., competition, predation, parasitism **REVISION &1st TERM EXAMINATION**	
7	Oct'26	**11**	**Biotechnology - Principles and Processes** Genetic Engineering (Recombinant DNA Technology **Ecosystem :** Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy	**PRAC: DNA ISOLATION POPUTION DENSITY/FREQUENCY BY QUADRAT METHOD**
8	Nov'26	**12**	**Biotechnology and its Applications** Application of biotechnology in health and agriculture: Human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organisms - Bt crops; transgenic animals; biosafety issues, biopiracy and patents. **Biodiversity and its Conservation:** Biodiversity-Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites **REVISION** **1st PRE-BOARD**	
9	Dec'26		**1st, 2nd PRE-BOARD**	
10	Jan'27		**2nd PRE-BOARD**	

SUBJECT:-COMPUTER SCIENCE

Sl. No.	Month & (W. Days)	Chapter /Unit No.	Topics and sub topics
1	**April'26** (20 days) No of periods : 20	Programming and Computational Thinking -2	Revision of Python topics covered in Class XI. Functions: types of function (built-in functions, functions defined in module, user defined functions),
2	**May'26**(23 days) **No of periods : 23**	Programming and Computational Thinking -2	Revision of Python topics covered in Class XI. Creating user defined function, arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope)
3	**June'26**(18 days) **No of periods: 18**	Programming and Computational Thinking -2	**File Handling** • Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths • Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause, writing/appending data to a text file using write() and writelines(), reading from a text file using read(), readline() and readlines(), seek and tell methods, manipulation of data in a text file • CSV file: import csv module, open / close csv file, write into a csv file using csv.writerow() and read from a csv file using csv.reader( )
4	**July'26**(10 days) No of periods **10**	Programming and Computational Thinking -2	**File Handling** • Binary file: basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method, read, write/create, search, append **Data Structure** •Stack, operations on stack (push & pop), implementation of stack using list. Introduction to queue, operations on queue (enqueue, dequeue, is empty, peek, is full), implementation of queue using list.
5	**Aug'26** (24 days) No of Periods : 25	Database Management	• **Database concepts: introduction to database concepts and its need** • Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key)

			• Structured Query Language: introduction, Data Definition Language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints (not null, unique, primary key), create database, use database, show databases, drop database, show tables, create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table, insert, delete, select, operators (mathematical, relational and logical), aliasing, distinct clause, where clause, in, between, order by, meaning of null, is null, is not null, like, update command, delete command, aggregate functions (max, min, avg, sum, count), group by, having clause,
6	**Sept'26** (23 days)		Revision for First Term
7	**Oct'26** (17 days) No of Periods : 20	Database Management Computer Networks	joins: cartesian product on two tables, equi-join and natural join • Interface of python with an SQL database: connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using fetchone(), fetchall(), rowcount, creating database connectivity applications ● Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET) ● Data communication terminologies: concept of communication, components of data communication (sender, receiver, message, communication media, protocols), measuring capacity of communication media (bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching) ● Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves) ● Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card) ● Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree) ● Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP, wireless/mobile communication protocol such as GSM, GPRS and WLL ● Mobile telecommunication technologies: 1G, 2G, 3G,

			4G and 5G ● Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web,servers, web hosting
8	**Nov'26** (22 days) No of Periods: 15		Revision for Preboard Exam
9	**Dec'26**(21days)		Preboard Exam
10	**Jan'26** (22 days)		
	Feb'26 **(21 days)**		
	Mar'26 **(24 days)**		

SUBJECT: PHYSICAL EDUCATION

Sl. No.	**Month**	**Chapter /Unit No.**	**Topics and sub topics**
1	April'26	**UNIT-1** **UNIT-2**	**<u>MANAGEMENT OF SPORTING EVENTS: (Unit-1)</u>** • Function of Sports events Management(Planning, Organising, staffing, Directing & Controlling) • Various Committees and its responsibilities(pre, during and post) • Fixture and its Procedures—Knock out,(Bye & Seeding) & League (Staircase, Cyclic & Tabular Method) Combination Tournament. • Intramural and Extramural Tournaments- Meaning , Objectives and its significance. Specific sports programme- (Sports Day, Run for Fun, Health Run, Run For specific causes & Run for unity.) • Practical: Fitness Test Administration(SAI Khelo India Test) **<u>CHILDREN & WOMEN IN SPORTS: (UNIT-2)</u>** • Exercise guide lines Of WHO for different age groups. • Common Postural deformities- Knock Knee, Bow legs, Flat foot, Round Shoulders, Lordosis, Kyphosis, Scoliosis and their corrective measures. • Special consideration (Menarche & Menstrual Dysfunction) • Women participation in sports- Physical, Psychological and social benefits. • Female athlete triad(Osteoporosis, Amenorrhea, Eating disorder)

2	May'26	**UNIT-3** **UNIT-4**	<u>**Yoga as preventive measure for Lifestyle Disease: (Unit-3)**</u> • Obesity: Procedure Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsyasana, Halasana, Pachimuttansana, Ardha- Matsyendrasana, Dhanurasana, Ushtrasana, Surybedhan Pranayama. • Diabetes: Procedure Benefits & Contraindications for Katichakrasana, Pavanmuktasana, Bhujangasana,Shalabhasana, Supta-Vajrasana, Pachimuttansana, Ardha- Matsyendrasana, Dhanurasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalbhati. • Asthma: Procedure Benefits & Contraindications for Tadasana, Urdhwahastottanasana, Uttan Mandukasana, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapabhati, Gomukhasana, Matsyasana, Anulom-Vilom. • **Hypertension:** Procedure Benefits & Contraindications for Tadasana, Uttanpadasana, Katichakrasana, Ardha Halasana, Sarala Matyasana, Gomukasana, Uttanmandukasana, Vakrasana, Bhujangasana, Makrasana, Shavasana, Nadi-shodhanapranayam, Sitlipranayam. • Back pain and Arthritis- Procedure , benefits & contrainidication. Practical: • Fitness Test Administration(SAI Khelo India Test) <u>**Physical Education & Sports for CWSN(Children with** Special Needs-Divyang) : (Unit-4)</u> • Organisations Promoting Disability Sports(Special Olympics, Paralympics, deaflympics) • Classification &division in sports. Concept of Inclusion in sports, its need and Implementation. • Advantages of Physical Activities for children with special needs. • Strategies to make physical Activities assessable for children with special needs. • Practical: Fitness Test Administration(SAI Khelo India Test)
3	June'26	**UNIT-5**	<u>**SPORTS AND NUTRITION:**</u> • Balance diet and Nutrition: Macro and Micro Nutrients. • Nutritive and Non nutritive Component of diet. • Eating for weight control- A healthy weight, the pitfalls of dieting, Food Intolerance and food myth. • Importance of diet in sports –Pre, During and post competition requirements. • Practical: Yoga(Asana & Pranayama)
4	July'26	**UNIT-6**	<u>**Test & Measurement in Sports.(Unit-6)**</u> Fitness Test- SAI Khelo India Fitness Test in school: • Age Group- 5-8 years/ class 1-3 : BMI, Flamingo Balance Test, Plate Tapping Test, • Age Group- 9-18 years/ class 4-12 : BMI, 50 mt Speed Test, 600 mt Run/ walk test, Sit & Reach flexibility test, Strength test(Abdomina Partial Curl up, push –ups for Boys and Modified push- ups for Girls). • Measurement of cardio-vascular fitness- Harvard step Test. • Computing Basal Metabolic Rate. 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. • Practical: Yoga(Asana & Pranayama)

5	Aug'26	**UNIT-7** **UNIT-8**	**<u>Physiology & Injuries in Sports- (Unit-7)</u>:** • Physiological factors determining components of physical fitness. • Effect of exercise on muscular system. • Effect of exercise on Cardio respiratory system • Physiological changes due to aging. • Sports Injuries: Classification(Soft Tissue injuries- Abrasion, Contusion, Laceration, Incision, Sprain, Strain, Bone & joint injuries- Dislocation, Fractures, Green stick, Comminuted, Transverse Oblique & Impacted) Practical: Anyone one IOA Recognized Sport/Game of choice. **<u>Biomechanics & Sports- (Unit-8)</u>:** • Newton's Law of motion & its application in sports. • Types of Levers and their application in sports. • Equilibrium- Dynamic & Static and Centre of Gravity and its application in sports. • Friction and sports • Projectile in sports.
6	Sept'26		**<u>Revision for first term</u>**
7	Oct'26	**UNIT-9** **UNIT-10**	**<u>Psychology and Sports-(Unit-9)</u>:** • Personality: Its definition & types (Jung classification & Big five theory) • Motivation, its type and Techniques • Exeecise Adherence reasons. Benefits & strategies for enhancing it. • Meaning , concept & types of Aggressions in sports.Psychological Attributes in sports- Self Esteem, Mental Imagery, Self Talk, Goal Setting **<u>Training in Sports-(Unit-10)</u>:** • Concept of Talent Identification and Talent Development in sports. • Introduction to Sports training Cycle- Micro, Meso, Macro Cycle. • Types & Method to Develop- Strength, Edurance and Speed. • Types and Develop- Flexibility and Coordinative Ability • Circuit training and its importance.
8	Nov'26		**REVISION** **1st PRE-BOARD**
9	Dec'26		**1st ,2nd PRE-BOARD**
10	Jan'27		**2nd PRE-BOARD**

SUBJECT-MUSIC

Sl. No.	Month	CHAP NO	Topics and sub topics
1	April'26	1.1 5.2	Theory: Brief study of the following :- Alankar, Kan, Meend, Khatka, Murki, Gamak Practical : (1) Alankar Practice (2) Raag: Bhairav (Vilambit Khayal : with simple elaborations and few Tanas etc.)
2	May'26	1.2 5.2 4.1	Theory : Brief study of the following Gram, Murchhana, Alap,Tana. Practical : (1)Raag: Bhairav (Chhota Khayal : with simple elaborations and few Tanas etc.) (2) Taal : Jhaptaal - Description of Talas along with Tala Notation (Recitation of the Thekas with Dugun, Tigun and Chaugun, keeping Taal with handbeats.)
3	June'26	2.1 5.2 4.1	Theory : Historical development of Time Theory of Ragas Practical : (1) Raag: Bageshri (Vilambit Khayal : with simple elaborations and few Tanas etc.) (2) Taal : Rupak Taal (Recitation of the Thekas with Dugun, Tigun and Chaugun, keeping Taal with handbeats.) SUMMER VACATION
4	July'26	3.1 3.2 5.2 4.1	SUMMER VACATION Theory : (1) Detail study of (i) Sangeet Ratnakar (ii)Sangeet Parijat. (2) Life sketch and Cotribution of (i) Faiyaz Khan. Practical : (1) Raag: Bageshri (Vilambit Khayal : with simple elaborations and few Tanas etc.) (2) Taal : Dhamar Taal (Recitation of the Thekas with Dugun, Tigun and Chaugun, keeping Taal with handbeats.)
5	Aug'26	3.2 5.2	Theory : Life sketch and Cotribution of (ii) Bade Ghulam Ali Khan, (iii) Krishna Rao Shankar Pandit. Practical : (1) Raag: Malkauns (Vilambit Khayal : with simple elaborations and few Tanas etc.) (2) Practical : Tarana with dugun and chaugun in any one of the prescribed Ragas.

6	Sept'26	4.1	Theory : Description of Prescribed Talas along with Tala Notation with Thah, Dugun, Tigun and Chaugun Jhaptala Rupak Dhamar Practical : (1) Dhamar with dugun and chaugun in any one of the prescribed Ragas. (2)Ability to recognize the Ragas from the Phrases of Swaras REVISION & HALF-YEARLY EXAMINATION
7	Oct'26	4.2 5.1 5.2	Theory : (1) Tuning of Tanpura (2) Critical study of Prescribed Ragas along with recognizing Ragas from phrases of Swaras and elaborating them (3) Description and writing in notation of prescribed Raags and Taals. Practical : Tuning of Tanpura.
8	Nov'26		REVISION & PRACTICE 1stPREBOARD EXAMINATION
9	Dec'26		1st& 2nd PREBOARD EXAMINATION
10	Jan'27		2nd PREBOARD EXAMINATION

Principal

ACADEMIC I/C