



DELHI PUBLIC SCHOOL SAIL TOWNSHIP, RANCHI

CLASS - XII 2024

SYLLABUS

ENGLISH

Books Prescribed:

1. Flamingo (FL)

2. Vistas (VS)

MONTHS	No. of working days	TOPICS
MARCH	10	FL - My Mother At Sixty Six (Poem) The Last Lesson AWS - Letter To The Editor
APRIL	21	FL - Lost Spring Keeping Quiet (Poem) VS - The Third Level AWS - Notice Writing Article Writing
MAY	08	FL - Deep Water VS - The Tiger King
JUNE	17	FL - The Rattrap AWS - Job Application
JULY	23	FL - A Thing Of Beauty (Poem) Indigo VS - The Enemy Journey To The End of the Earth AWS - Report Writing
AUGUST	20	FL - A Roadside Stand (Poem) Poets and Pancakes VS - On The Face Of It AWS - Invitations & Replies (Formal & Informal) ASL
SEPTEMBER	21	REVISION FOR HALF YEARLY FL - The Interview
OCTOBER	17	FL - Going Places Aunt Jennifer's Tigers (Poem) AWS - REVISION
NOVEMBER	19	VS - Memories Of Childhood REVISION PROJECT & VIVA
DECEMBER		

APPLIED MATHEMATICS

Month	Number of Working Days	Topics
April	23	<p><u>UNIT - 8 : LINEAR PROGRAMMING</u></p> <p>8.1 Introduction and related terminology 8.2 Mathematical formulation of Linear Programming Problem 8.3 Different types of Linear Programming Problems 8.4 Graphical method of solution for problems in two variables 8.5 Feasible and infeasible Regions 8.6 Feasible and infeasible solutions, optimal feasible solution.</p> <p><u>UNIT -4 : PROBABILITY DISTRIBUTIONS</u></p> <p>4.1 Probability Distributions 4.2 Mathematical Expectation 4.3 Variance 4.4 Binomial Distribution 4.5 Poison Distribution 4.6 Normal Distribution</p> <p><u>UNIT - 2 : ALGEBRA</u></p> <p>2.1 Matrices and types of matrices 2.2 Equality of matrices, Transpose of a matrix, Symmetric and Skew symmetric matrix 2.3 Algebra of Matrices 2.4 Determinants 2.5 Inverse of a matrix 2.6 Solving system of simultaneous equations using matrix method, Cramer's rule</p>
May	10	<p><u>UNIT-3 : CALCULUS</u></p> <p><u>Differentiation and its Applications</u></p> <p>3.1 Higher Order Derivatives 3.2 Applications of Derivatives 3.3 Marginal Cost and Marginal Revenue using derivatives 3.4 Increasing/Decreasing Functions 3.5 Maxima and Minima</p> <p><u>UNIT 1 :NUMBERS,QUANTIFICATION AND NUMERICAL APPLICATIONS</u></p> <p>1.1 Modulo Arithmetic 1.2 Congruence Modulo 1.3 Alligation and Mixture</p>
June	7	<p><u>UNIT 1 : NUMBERS,QUANTIFICATION AND NUMERICAL APPLICATIONS (Continued)</u></p> <p>1.4 Numerical Problems Boats and Streams (upstream and downstream) Pipes and Cisterns Races and Games 1.5 Numerical Inequalities</p>
July	22	<p><u>UNIT-3 : CALCULUS (CONTINUED)</u></p> <p><u>Integration and its Applications</u></p> <p>3.6 Integration 3.7 Indefinite Integrals as family of curves 3.8 Definite Integrals as area under the curve 3.9 Application of Integration</p>

August	22	<u>Differential Equations and Modelling</u> 3.10 Differential Equations 3.11 Formulating and Solving Differential Equations 3.12 Application of Differential Equations <u>UNIT - 5 :INFERENTIAL STATISTICS</u> 5.1 Population and Sample 5.2 Parameter and Statistics and Statistical Interferences 5.3 t-test (one sample t-test and two independent groups t-test)
September	6	Revision of HALY YEARLY EXAM
October	16	<u>UNIT - 7 : FINANCIAL MATHEMATICS</u> 7.1 Perpetuity, Sinking Funds 7.2 Calculation of EMI 7.3 Calculation of Returns, Nominal Rate of Return 7.4 Compound Annual Growth Rate 7.5 Linear method of Depreciation
November	5	<u>UNIT - 6 :INDEX NUMBERS AND TIME BASED DATA</u> 6.1 Time Series 6.2 Components of Time Series 6.3 Time Series analysis for univariate data 6.4 Secular Trend 6.5 Methods of Measuring trend
December	22	PB-1 and Revision
January	19	PB-2
February	19	Improvement Exam

MATHEMATICS CORE

Months	Working Days	Topics
April	21	<p>Linear programming problems(LPP):- Introduction, related terminology such as constraints, objective function, optimization, 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)</p> <p>Vectors:- 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</p> <p>Three-Dimensional Geometry Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines</p> <p>Probability:- Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable.</p> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">INTERNAL ASSESMENT</p> <p style="text-align: center;">[Activity No. 20] To verify geometrically that</p> $\vec{c} \times (\vec{a} + \vec{b}) = \vec{c} \times \vec{a} + \vec{c} \times \vec{b}$ <p style="text-align: center;">[Activity No. 26] To measure the shortest distance between two skew lines and verify it analytically</p> </div>
May	8+(5 extra classes)= 13	<p>Relations:- Types of relations: reflexive, symmetric, transitive and equivalence relations.</p> <p>Functions:- One to one and onto functions</p> <p>Inverse Trigonometric Functions: - Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions.</p> <p>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. Noncommutativity of multiplication of matrices and</p>

		<p>existence of non-zero 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).</p> <div style="border: 1px solid black; padding: 5px;"> <p>INTERNAL ASSESMENT [Activity No.1] To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \perp m\}$ is symmetric but neither reflexive nor transitive</p> </div>
June	17	<p>Determinants:- Determinant of a square matrix (up to 3×3 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. Qualifying Exam</p>
July	23	<p>Continuity and Differentiability: - Continuity and differentiability, chain rule, derivative of inverse trigonometric functions, <i>like</i> $\sin^{-1} x$, $\cos^{-1} x$ 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: - 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).</p> <div style="border: 1px solid black; padding: 5px;"> <p>INTERNAL ASSESMENT Activity No.3 To demonstrate a function which is not one-one but is onto. Activity No.6 To explore the principal value of the function $\sin^{-1}x$ using a unit circle Activity No.9 To find analytically the limit of a function $f(x)$ at $x = c$ and also to check the continuity of the function at that point</p> </div>

August	20	<p>Integrals: - 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</p> $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$ $\int \frac{px + q}{ax^2 + bx + c} dx, \int \frac{px + q}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2} dx, \int \sqrt{x^2 - a^2} dx$ $\int \sqrt{ax^2 + bx + c} dx,$ <p>Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.</p> <div style="border: 1px solid black; padding: 5px;"> <p>INTERNAL ASSESMENT</p> <p>Activity No.16 To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.</p> <p>Activity No.18 To verify that amongst all the rectangles of the same perimeter, the square has the maximum area.</p> </div>
September	21	<p>Revision Half yearly Examination</p> <p>Applications of the Integrals: - Applications in finding the area under simple curves, especially lines, circles/ parabolas/ ellipses (in standard form only)</p>
October	17	<p>Differential Equations:- 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:</p> $\frac{dy}{dx} + py = q, \text{ where } p \text{ and } q \text{ are functions of } x \text{ or constants.}$ $\frac{dx}{dy} + px = q, \text{ where } p \text{ and } q \text{ are functions of } y \text{ or constants}$ <div style="border: 1px solid black; padding: 5px;"> <p>INTERNAL ASSESMENT</p> <p>Activity No.27 To explain the computation of conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice.</p> <p>Activity No.21 To verify that angle in a semi-circle is a right angle, using vector method.</p> </div>

November	16	Revision Pre Board Examination -I
December	21	Revision Pre Board Examination -II
January	20	Pre Board Examination -II continued

PHYSICS

Month	No. of Working days	Topics to be covered
April	21	<p>UNIT 1 -Electrostatics</p> <p>Chapter-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).</p> <p>Chapter-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. 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).</p>
May	08 + 05	<p>Unit 2: Current Electricity</p> <p>Chapter-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, Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's rules, Wheatstone bridge.</p>

June	17	<p>QUALIFYING EXAMINATION</p> <p>Unit 3: Magnetic Effects of Current and Magnetism</p> <p>Chapter-4: Moving Charges and Magnetism</p> <p>Concept of magnetic field, Oersted's experiment.</p> <p>Biot - Savart law and its application to current carrying circular loop.</p> <p>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.</p>
July	23	<p>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 and conversion to ammeter and voltmeter.</p> <p>Chapter-5: Magnetism and Matter</p> <p>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), torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines.</p> <p>Magnetic properties of materials- Para-, dia- and ferro - magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties.</p> <p>Unit 4: Electromagnetic Induction and Alternating Currents</p> <p>Chapter-6: Electromagnetic Induction</p> <p>Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction.</p>
Aug	20	<p>Chapter-7: Alternating Current</p> <p>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.</p> <p>AC generator, Transformer.</p> <p>Unit 5: Electromagnetic waves</p> <p>Chapter-8: Electromagnetic Waves</p> <p>Basic idea of displacement current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only).</p> <p>Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses...</p> <p>Unit 6: Optics</p> <p>Chapter-9: Ray Optics and Optical Instruments</p> <p>Ray Optics: 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.</p> <p>Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.</p>

Sept	21	<p>HALF YEARLY EXAMINATION</p> <p>Chapter-10: Wave Optics</p> <p>Wave optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. 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).</p>
Oct	17	<p>Unit 7: Dual Nature of Radiation and Matter</p> <p>Chapter-11: Dual Nature of Radiation and Matter</p> <p>Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Experimental study of photoelectric effect</p> <p>Matter waves-wave nature of particles, de-Broglie relation.</p> <p>Unit 8: Atoms and Nuclei</p> <p>Chapter-12: Atoms</p> <p>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).</p>
Nov	11	<p>Chapter-13: Nuclei</p> <p>Composition and size of nucleus, nuclear force</p> <p>Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.</p> <p>Unit 9: Electronic Devices</p> <p>Chapter-14: Semiconductor Electronics: Materials, Devices and Simple Circuits</p> <p>Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction</p> <p>Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier.</p> <p>REVISION, PRE-BOARD - I</p>
Dec	22	REVISION, PRE-BOARD - II

Lists of Experiments

SECTION-A

Experiments

- 1.To determine the resistivity of two / three wires by plotting a graph for potential difference versus current.
- 2.To find the resistance of a given wire / standard resistor using a meter bridge.
3. To verify the laws of combination (series) of resistances using a meter bridge.

OR,

- To verify the laws of combination (parallel) of resistances using a meter bridge.
4. To determine the resistance of a galvanometer by half-deflection method and to find its figure of merit.

Activities

- 1.To assemble the components of a given electrical circuit.
- 2.To study the variation in potential drop with the length of a wire for a steady current.
- 3.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.

SECTION-B

Experiments

- 1.To find the value of v for different values of u in the case of a concave mirror and to find the focal length.
- 2.To find the focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$.
- 3.To determine the angle of minimum deviation for a given prism by plotting a graph between the angle of incidence and the angle of deviation.
- 4.To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.

Activities

- 1.To identify a diode, an LED, a resistor, and a capacitor from a mixed collection of such items.
- 2.To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
- 3.To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

CHEMISTRY (043)

Months	No. of working days	TOPICS
APRIL	21	<u>SOLUTION</u> 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. <u>ELECTROCHEMISTRY</u> 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, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea,) dry cell - electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.

MAY	10	<p><u>BIOMOLECULES</u></p> <p>Carbohydrates, Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates, Proteins- Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins , enzymes, Hormones- Elementary idea excluding structure. Vitamins-Classification and functions. Nucleic Acids: DNA and RNA.</p>
JUNE	17	<p><u>CHEMICAL KINETICS</u></p> <p>Unit IV: Chemical Kinetics</p> <p>Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.</p>

JULY	23	<p>Haloalkanes and Haloarenes.</p> <p>Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, optical rotation mechanism of substitution reactions.</p> <p>Haloarenes: Nature of C-X bond, substitution reactions (Directive influence of halogen in mono substituted compounds only).</p> <p>Uses and environmental effects of - dichloromethane, trichloromethane, tetra chloromethane, iodoform, freons, DDT.</p> <p>Unit</p> <p>Alcohols, Phenols and Ethers 10 Periods</p> <p>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.</p> <p>Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.</p> <p>Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.</p>
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AUGUST	20	Aldehydes, Ketones and Carboxylic Acids 10 Periods 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. Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.
SEPTEMBER	21	AMINES 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. d and f Block Elements General introduction, electronic configuration, occurrence and characteristics of transition metals, 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.
OCTOBER	17	Coordination Compounds Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).
NOVEMBER	16	FULL SYLLABUS REVISION

PRACTICALS

Evaluation Scheme for Examination Marks

Volumetric Analysis 08

Salt Analysis 08

Content Based Experiment 06

Project Work 04

Class record and viva 04

Total 30

PRACTICAL SYLLABUS

Micro-chemical methods are available for several of the practical experiments. Wherever possible, such techniques should be used.

A. Surface Chemistry

(a) Preparation of one lyophilic and one lyophobic sol

Lyophilic sol - starch, egg albumin and gum

Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide.

(b) Dialysis of sol-prepared in (a) above.

(c) Study of the role of emulsifying agents in stabilizing the emulsion of different oils.

B. Chemical Kinetics

(a) Effect of concentration and temperature on the rate of reaction between Sodium Thiosulphate and

Hydrochloric acid.

(b) Study of reaction rates of any one of the following:

(i) Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentration of Iodide ions.

(ii) Reaction between Potassium Iodate, (KIO_3) and Sodium Sulphite: (Na_2SO_3) using starch solution

as indicator (clock reaction).

C. Thermochemistry

Any one of the following experiments

i) Enthalpy of dissolution of Copper Sulphate or Potassium Nitrate.

ii) Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH).

iii) Determination of enthalpy change during interaction (Hydrogen bond formation) between Acetone and Chloroform.

D. Electrochemistry

Variation of cell potential in $Zn/Zn^{2+} || Cu^{2+}/Cu$ with change in concentration of electrolytes ($CuSO_4$ or $ZnSO_4$) at room temperature.

E. Chromatography

i) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of R_f values.

ii) Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in R_f values to be provided).

F. Preparation of Inorganic Compounds

Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum. Preparation of Potassium Ferric Oxalate.

G. Preparation of Organic Compounds

Preparation of any one of the following compounds

i) Acetanilide ii) Di-benzalacetone iii) p-Nitroacetanilide iv) Aniline yellow or 2-Naphthol Anilinedye.

H. Tests for the functional groups present in organic compounds:

Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (Primary) groups.

I. Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given foodstuffs.

J. Determination of concentration/ molarity of KMnO_4 solution by titrating it against a standard solution of:

i) Oxalic acid,

ii) Ferrous Ammonium Sulphate

(Students will be required to prepare standard solutions by weighing themselves).

K. Qualitative analysis

Determination of one cation and one anion in a given salt.

Cation : Pb^{2+} , Cu^{2+} , As^{3+} , Al^{3+} , Fe^{3+} , Mn^{2+} , Zn^{2+} , Cu^{2+} , Ni^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Mg^{2+} , NH_4^+

Anions: $(\text{CO}_3)^{2-}$, S^{2-} , $(\text{SO}_3)^{2-}$, $(\text{NO}_2)^-$, $(\text{SO}_4)^{2-}$, Cl^- , Br^- , I^- , PO_3^{3-} , $(\text{C}_2\text{O}_4)^{2-}$, CH_3COO^- , NO_3^-

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(Note: Insoluble salts excluded)

PROJECT

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

few suggested Projects.

- Study of the presence of oxalate ions in guava fruit at different stages of ripening.
- Study of quantity of casein present in different samples of milk.
- Preparation of soybean milk and its comparison with the natural milk with respect to curd formation, effect of temperature, etc.
- Study of the effect of Potassium Bisulphate as food preservative under various conditions (temperature, concentration, time, etc.)
- Study of digestion of starch by salivary amylase and effect of pH and temperature on it.
- Comparative study of the rate of fermentation of following materials: wheat flour, gram flour, potato juice, carrot juice, etc.
- Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom).
- Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper.

Note: Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.

BIOLOGY

Months	Unit	No.Of Working Days	Topics/Chapters
April	VI	21	<p>UNIT – VI</p> <p>REPRODUCTION</p> <p>Ch.2.Sexual reproduction in flowering plants Flower structure, development of male and female gametophyte, pollination – types, agencies and examples, outbreeding devices, pollen-pistil interaction, double fertilization, post fertilization development – endosperm and embryo, development of seed and formation of fruit, special modes – apomixes, pathernocarpy, polyembryony, significance of seed and fruit formation.</p> <p>Ch.3.Human reproduction Male and female reproductive system, Microscopic anatomy of testis and ovary, gametogenesis, menstrual cycle, fertilization, embryo development upto blastocyst formation, implantation, pregnancy and placenta formation (Elementary idea), parturition (Elementary idea), lactation (Elementary idea).</p>
May	VI & VII	08	<p>UNIT – VI & VII</p> <p>Ch.4.Reproductive health Need for reproductive health, prevention of sexually transmitted diseases, birth control – need and methods, contraception and MTP, Amniocentesis, Infertility and assisted reproductive technologies – IVF, ZIFT, GIFT (Elementary idea for general awareness).</p> <p>GENETICS & EVOLUTION</p> <p>Ch.5. Principles of inheritance Mendelian inheritance, deviations from mendelism – Incomplete dominance, Co-dominance, Multiple alleles and inheritance of blood group, Pleiotrophy, Elementary idea of Polygenic inheritance, Chromosome theory of inheritance, Chromosomes and genes, Sex determination– In humans, birds, honeybee, linkage and crossing over, sex linked inheritance- Haemophilia, colour blindness, Mendelian disorders in humans – thalassemia, chromosomal disorder in human. –Down’s syndrome, Turner’s syndrome and Klinefilter’s syndrome.</p> <p>QUALIFYING EXAMINATION</p>

June	VII	17	<p>Ch.6. Molecular Basis of inheritance Search for genetic material, structure of DNA and RNA, DNA packaging, DNA replication, central dogma: Transcription, genetic code, translation, gene expression and regulation –Lac Operon, Human genome project, Rice genome project, DNA finger printing.</p>
July	VII & IX	23	<p>Ch.7. Evolution Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); adaptive radiation; Biological evolution: Lamarck’s theory of use and disuse of organs, Darwin's theory of 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; brief account of evolution; human evolution.</p> <p>BIOTECHNOLOGY & ITS APPLICATION Ch. 11. Principles & processes of Biotechnology Genetic engineering, Recombinant DNA technology Ch.12. Application of Biotechnology In health and agriculture, Human insulin, and vaccine production, stem cell technology, Gene therapy, GMO – Bt crops, Transgenic animals, Bioethical issues, Biopiracy, Patents.</p>
August	VIII	20	<p>BIOLOGY & HUMAN WELFARE Ch.8. Health & Diseases Pathogens, parasites, causing human diseases (Malaria, Filariasis, Ascariasis, Typhoid, Pneumonia, Common cold, Amoebiasis, Ringworm), basic concepts of immunology, vaccine, Cancer, HIV, AIDS, Adolescence, drug and alcohol abuse.</p> <p>Ch.10. Microbes in Human Welfare In household food processing, industrial production, sewage treatment, energy generation, bio control agents and bio fertilizers, antibiotic production and judicious use.</p>
September		21	REVISION & HALF YEARLY EXAMINATION

October	X	17	ECOLOGY Ch.13.Organism & Environment Population and ecological adaptation, Population attributes – growth, birth and death rate, age distribution, Population interactions –mutualism, competition, predation, parasitism. Ch.14.Ecosystem Ecosystem: structure and function; productivity and decomposition; energy flow; pyramids of number, biomass, energy.
November	X	19	Ch.15. Biodiversity and Conservation Biodiversity - Concept, levels, 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. PRE-BOARD- I
December		22	PRE- BOARD– II

COMPUTER SCIENCE

Months	No. of Working Days	Topics/Chapters
April	21	Revision of Python topics covered in Class XI. • Functions: types of function (built-in functions, functions defined in module, user defined functions), 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)
May	08	Exception Handling: Introduction, handling exceptions using try-except-finally blocks
June	17	QUALIFYING EXAMINATION 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

July	23	<p>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 and update operations in a binary file</p> <ul style="list-style-type: none"> • CSV file: import csv module, open / close csv file, write into a csv file using writer(),writerow(),writerows() and read from a csv file using reader() <p>Data Structure: Stack, operations on stack (push & pop), implementation of stack using list.</p>
August	20	<p>Database Management</p> <p>Database concepts: introduction to database concepts and its need</p> <ul style="list-style-type: none"> • Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key) <p>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,</p>
September	21	REVISION & HALF YEARLY EXAMINATION
October	17	<p>Database Management (Continued.....)</p> <p>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, joins: cartesian product on two tables, equi-join and naturaljoin</p>
November	19	<p>Interface of python with an SQL database: connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using connect(), cursor(), execute(), commit(), fetchone(), fetchall(), rowcount, creating database connectivity applications, use of %s format specifier or format() to perform queries</p> <p>Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET)</p> <ul style="list-style-type: none"> • Data communication terminologies: concept of communication, components of

		<p>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)</p> <ul style="list-style-type: none"> ● 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 ● Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting <p>PRE-BOARD- I</p>
December	22	PRE- BOARD– II

DELHI PUBLIC SCHOOL, SAIL TOWNSHIP, RANCHI
SYLLABUS OF INFORMATICS PRACTICES (065)
FOR CLASS XII (2024-25)

MONTH	DAYS	TOPIC
APRIL		<p>Revision of Class XI:</p> <p>UNIT - I :</p> <p>Data Handling with Pandas (DH1): Data Structure – Series & Data Frame</p> <p>Series: Creation of Series from – List, NdArray (NumPy), Dictionary, Scalar value; Mathematical operations; Head and Tail functions; Selection, Indexing, and Slicing.</p> <p>Data Frames: Introduction to DF creation - from List, Dictionary, Array</p>
MAY		<p>Data Frames: iteration; Operations on rows and columns: add, select, delete, rename; Head and Tailfunctions; Indexing using Labels, Boolean Indexing; Joining, Merging & Concatenation</p>
JUNE		<p>Text/CSV files and Importing-Exporting Data between CSV files and DataFrames.</p> <p>Data Handling with Pandas (DH2) :</p> <p>Descriptive Statistics: max, min, count, sum, mean, median, mode, quartile, Standard deviation, variance.</p> <p>Purpose of plotting; drawing and saving the following types of plots using Matplotlib – histogram, line plot, bar graph,</p>
JULY		<p>Customizing plots: color, style (dashed, dotted), adding label, title, and legend in plots.</p> <p>Data Frame operations: Aggregation, group by, Sorting, Deletion and Renaming Index, Pivoting. Handling missing values – dropping and filling. Importing/Exporting Data between MySQL database & Pandas.</p>
AUGUST		<p>Unit 2: Database Query using SQL</p> <p>SQL Queries: Select Update, Alter, etc.</p> <p>Math functions: POWER (), ROUND (), MOD ().</p> <p>Text functions: UCASE()/UPPER(), LCASE()/LOWER(), MID(), SUBSTRING()/SUBSTR(), LENGTH(), LEFT(), RIGHT(), INSTR(), LTRIM(), RTRIM(), TRIM().</p> <p>Date Functions: NOW(), DATE(), MONTH(), MONTHNAME(), YEAR(), DAY(), DAYNAME(). Aggregate Functions: MAX(), MIN(), AVG(), SUM(), COUNT(); using COUNT(*).</p> <p>Querying and manipulating data using Group by, Having, and Order by.</p>

BUSINESS STUDIES

Month & Year	No. Of Days	CHAPTER
April 2024 21		<p>NATURE AND SIGNIFICANCE OF MANAGEMENT</p> <p>Management-concept, objectives and importance. Management as Science, Art and Profession. Levels of Management. Management Functions- Planning, Organising, Staffing, Directing and Controlling. Co-ordination-concept and importance & characteristics of coordination</p>
		<p>PRINCIPLES OF MANAGEMENT</p> <p>Concept and significance. Fayol's Principles of Management</p> <p>Taylor's Scientific Management- Principles and Techniques</p> <p>Compare the Contribution of Fayol and Taylor</p>
		<p>BUSINESS ENVIRONMENT</p> <p>Concept and Importance. Dimensions of Business Environment: Economic, Social, Technological, Political and Legal. Demonetization - Concept. and features</p> <p>MARKETING MANAGEMENT</p> <p>Marketing management - Concept; Features of marketing Marketing Functions; Marketing Management Philosophies; Marketing Mix - Concept and Elements;</p>
May 2024	8 5 (Extra Class)	<p>Product - Concept, Branding, Labelling and Packaging; Price - Concept, Factors determining price; Physical distribution - Concept and Components, Channels of distribution: Types, Choice of Channels;</p> <p>Promotion Mix- Concept and elements; Advertising - Concept; sales Promotion ; Sales Promotion - Concept ; Public Relations - Concept .</p>

June, 2024	6	QUALIFYING EXAMINATION (6 Days)
	10	PLANNING Concept , Importance and Limitations; Planning process; Single use and Standing Plans: Objectives, Strategy, Policy, Procedure, method, Rule, Programme and Budget.
		ORGANISING Concept and Importance; Process; Structure of Organisation- Functional and Divisional -Explain the advantages disadvantages and suitability of functional and divisional structure Concept.
July 2024	23	Formal and Informal Organisation –Advantages and disadvantages Concept; Delegation- concept, elements and appreciate importance of delegation. Decentralisation: concept and Differentiation between delegation and decentralisation STAFFING Concept and Importance of Staffing; Staffing as a part of Human Resource Management – Concept. Staffing process; Recruitment Process; Selection Process; Training and Development – Concept and Importance, Methods of Training – On the Job and Off the Job- Induction training, vestibule Training, Apprenticeship Training and Internship Training.
Aug, 2024	20	DIRECTING Concept and Importance; Elements of Directing; Supervision – concept, functions of a supervisor; Motivation – concept, Maslow’s hierarchy of needs, Financial and Non Financial incentives. Leadership – concept, styles – autocratic, democratic and laissez faire. Communication – concept, formal and informal communication; Barriers to effective communication, how to overcome the barriers. CONTROLLING Concept and importance; Relationship between planning and controlling; Steps in the process of controlling.

Sept, 2024	21	Revision , HALF YEARLY EXAMINATIONS
Oct, 2024	17	<p>FINANCIAL MANAGEMENT</p> <p>Concept, role and objectives of Financial Management; Financial decisions – Investment, Financing and Dividend – Meaning and factors affecting; Financial Planning – Concept and Importance.</p> <p>POOJA VACATION PROJECT WORK AND ASSIGNMENT</p> <p>Capital Structure – concept and factors determining Capital Structure. Fixed and Working Capital – Concept and factors affecting their requirements.</p>
Nov, 2024	16	<p>FINANCIAL MARKETS</p> <p>Concept, Functions and Types; Money Market and its Instruments; Capital market and its types (Primary and Secondary), Methods of Floatation in the primary market; Stock Exchange – Functions and Trading Procedure; Securities and Exchange Board of India (SEBI) – Objectives and Meaning of depository services and DEMAT Account</p> <p>CONSUMER PROTECTION</p> <p>Concept and Importance of Consumer Protection; Consumer Protection act 2019: Meaning of Consumer, Rights and Responsibilities of Consumer; Who can file a complaint against whom? Redressal Machinery; Remedies Available.under CPA2019. Consumer awareness – Role of Consumer organizations and Non Governmental Organisations (NGOs).in protecting consumer awareness</p>
Dec,2024	21	Project work
Jan, 2025	20	Revision and Pre-board exams

ACCOUNTANCY

Month	Days	Topics and Sub-Topics
APRIL	21	<ul style="list-style-type: none"> • Partnership: features, Partnership Deed. • Provisions of the Indian Partnership Act 1932 in the absence of partnership deed. • Fixed v/s fluctuating capital accounts. Preparation of Profit and Loss Appropriation account- division of profit among partners, guarantee of profits. • Past adjustments (relating to interest on capital, interest on drawing, salary and profit sharing ratio). • Goodwill: meaning, nature, factors affecting and methods of valuation - average profit, super profit and capitalization. Note: Interest on partner's loan is to be treated as a charge against profits. Goodwill: meaning, factors affecting, need for valuation, methods for calculation (average profits, super profits and capitalization), adjusted through partners capital/ current account. Accounting for Partnership firms - Reconstitution and Dissolution. • Change in the Profit Sharing Ratio among the existing partners - sacrificing ratio, gaining ratio, accounting for revaluation of assets and reassessment of liabilities and treatment of reserves, accumulated profits and losses. Preparation of revaluation account and balance sheet.
MAY	08	<ul style="list-style-type: none"> • Admission of a partner - effect of admission of a partner on change in the profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities, treatment of reserves, accumulated profits and losses, adjustment of capital accounts and preparation of capital, current account and balance sheet. • Retirement and death of a partner: effect of retirement / death of a partner on change in profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities, adjustment of accumulated profits, losses and reserves, adjustment of capital accounts and preparation of capital, current account and balance sheet. Preparation of loan account of the retiring partner. • Calculation of deceased partner's share of profit till the date of death. Preparation of deceased partner's capital account and his executor's account.
JUNE	17	<p>Qualifying Examination</p> <ul style="list-style-type: none"> • Dissolution of a partnership firm: meaning of dissolution of partnership and partnership firm, types of dissolution of a firm. Settlement of accounts - preparation of realization account, and other related accounts: capital accounts of partners and cash/bank a/c (excluding piecemeal distribution, sale to a company and insolvency of partner(s)).

Month	Days	Topics and Sub-Topics
JULY	23	Accounting for Share Capital • Features and types of companies. • Share and share capital: nature and types. • Accounting for share capital: issue and allotment of equity and preferences shares. Public subscription of shares - over subscription and under subscription of shares; issue at par and at premium, calls in advance and arrears (excluding interest), issue of shares for consideration other than cash. • Concept of Private Placement and Employee Stock Option Plan (ESOP), Sweat Equity. • Accounting treatment of forfeiture and reissue of shares. • Disclosure of share capital in the Balance Sheet of a company.
AUGUST	20	Accounting for Debentures • Debentures: Meaning, types, Issue of debentures at par, at a premium and at a discount. Issue of debentures for consideration other than cash; Issue of debentures with terms of redemption; debentures as collateral security-concept, interest on debentures (concept of TDS is excluded). Writing off discount / loss on issue of debentures.
SEPTEMBER	21	Financial statements of a Company: Meaning, Nature, Uses and importance of financial Statement. Statement of Profit and Loss and Balance Sheet in prescribed form with major headings and sub headings (as per Schedule III to the Companies Act, 2013)
OCTOBER	17	<ul style="list-style-type: none"> • Financial Statement Analysis: Meaning, Significance Objectives, importance and limitations. • Tools for Financial Statement Analysis: Comparative statements, common size statements, Ratio analysis, Cash flow analysis. • Accounting Ratios: Meaning, Objectives, Advantages, classification and computation. • Liquidity Ratios: Current ratio and Quick ratio. • Solvency Ratios: Debt to Equity Ratio, Total Asset to Debt Ratio, Proprietary Ratio and Interest Coverage Ratio. Debt to Capital Employed Ratio. • Activity Ratios: Inventory Turnover Ratio, Trade Receivables Turnover Ratio, Trade Payables Turnover Ratio, Fixed Asset Turnover Ratio, Net Asset Turnover Ratio and Working Capital Turnover Ratio. • Profitability Ratios: Gross Profit Ratio, Operating Ratio, Operating Profit Ratio, Net Profit Ratio and Return on Investment.
NOVEMBER	16	<ul style="list-style-type: none"> • Meaning, objectives Benefits, Cash and Cash Equivalents, Classification of Activities and preparation (as per AS 3 (Revised) (Indirect Method only). Revision.
DECEMBER	21	REVISION

ECONOMICS

Syllabus for Economics of class XII (2024-25)	
MONTHS	UNIT/ TOPICS
APRIL	MACRO
21	unit: 1 National income and Related aggregates
	topic: meaning, basic concepts of consumption goods, capital goods, intermediate goods, stocks flows,
	gross investment depreciation
	unit: 1 National income and Related aggregates (conted..)
	topic : circular flow of income
	topic: aggregate relatives, GNP, GDP, NNP AND NDP both in market price and factor cost
	unit: 1 National income and Related aggregates (conted..)
	topics : methods of calculating national income
	topics: INCOME METHOD, EXPENDITURE METHOD AND VALUE ADDED METHOD
	Gdp and welfare, nominal and real Gdp
	INDIAN ECONOMICS
	unit:1 DEVELOPMENT EXPERIENCE(1947-90)
	topic:- Indian economy on the eve of Independence:- National income, Agriculture sector, Industrial sector, Trade, Demography, Infrastructure
MAY	
8	unit:1 DEVELOPMENT EXPERIENCE(1947-90)(CONTEd...) Topic: Indian economy between 1950-1990:-goals of planning, Agriculture sector reform, Green revolution, Industrial sector IPR 1956, Trade, Conclusion
	MACRO
	UNIT :2 Money and banking: Meaning and Supply of money
	topic: Commercial bank and Credit creation
JUNE	MACRO
17	TOPIC: Central bank, functions, Credit control measures
	TOPIC :Income determination: Aggregate demand and its components, Consumption function, Saving function MPC, MPS, APC, APS, Investment, Equilibrium.
	QUALIFYING EXAM
JULY	INDIAN ECONOMICS
23	Topic :- Economic reform since 1991:- Need for reform, liberalisation measures, Privatisation measures, Globalisation, WTO, critical appraisals concept of demonetization and GST
	UNIT 2: CURRENT CHALLENGES FACING INDIAN ECONOMY HUMAN CAPITAL FORMATION:- Sources, Human capital and Human development, Education and health sector in India

	<p>MACRO: INCOME DETERMINATION CONTED...:- Multiplier, working of multiplier, Inflationary and deflationary gap, measures to control it</p>
<p>AUGUST 20 days</p>	<p>INDIAN ECONOMICS RURAL DEVELOPMENT: key issues, Rural credit, Agriculture marketing, Agriculture diversification, Organic farming Employment:- Types of employment, formal and informal, casualisation and informalisation of workforce, recent trends of unemployment, problem and policy measures.</p>
<p>SEPTEMBER 21 days</p>	<p>GOVERNMENT BUDGET AND THE ECONOMY:- Meaning and objectives, Component of revenue and capital budget, deficits of budget, Revenue, Fiscal and Primary deficit HALF YEARLY EXAM</p>
<p>OCTOBER 17 days</p>	<p>MACRO ECONOMICS Exchange rate Systems - Fixed, Flexible and Managed floating rate system, functions of exchange market, balance of payment:- components, sides and items in BOP.</p>
<p>NOVEMBER 16 days</p>	<p>INDIAN ECONOMICS:- ENVIRONMENT AND SUSTAINABLE DEVELOPMENT:-MEANING, resources, effects and measures DEVELOPMENT EXPERIENCE OF INDIA: COMPARISON WITH NEIGHBOURS: INDIA and PAKISTAN, AND CHINA: issues growth, population, sectoral development, other development indicators Pre board 1</p>
<p>DECEMBER 21 days</p>	<p>Pre board 2</p>
<p>JANUARY 20 days</p>	

HISTORY

Month	Days	Topics and Sub-Topics
April+ May	21 +8	<p>The Story of the First Cities: Harappan Archaeology. Broad overview: Early urban centres Story of discovery: Harappan civilization Excerpt: Archaeological report on a major site Discussion: How it has been utilized by archaeologists/historians.</p> <p>Political and Economic History: How Inscriptions tell a story. Broad overview: Political and economic history from the Mauryan to the Gupta period. Story of discovery: Inscriptions and the decipherment of the script. Shifts in the understanding of political and economic history. Excerpt: Asokan inscription and Gupta period land grant Discussion: Interpretation of inscriptions by historians.</p> <p>Social Histories: Using the Mahabharata social history, including caste, class, kinship and gender Story of discovery: Transmission and publications of the Mahabharata Excerpt: from the Mahabharata, illustrating how it has been used by historians. Discussion: Other sources for reconstructing social history.</p> <p>Thinkers, Beliefs and Buildings</p> <p>Cultural Developments (c. 600 BCE – 600 CE) Broad overview: A brief review of religious histories of Vedic religion, Jainism, Vaishnavism, Shaivism (Puranic Hinduism). Focus on Buddhism. Story of discovery: Sanchi stupa. Excerpt: Reproduction of sculptures from Sanchi. Discussion: Ways in which sculpture has been interpreted by historians, other sources for reconstructing the history of Buddhism.</p>
June	17	Qualifying Examination

July	23	<p>Medieval Society through Travellers' Accounts</p> <p>Broad overview: Outline of social and cultural life as they appear in travellers' accounts. Story of their writings: A discussion of where they travelled, why they travelled, what they wrote, and for whom they wrote. Excerpts: from AlBiruni, Ibn Battuta, Francois Bernier Discussion: What these travel accounts can tell us and how they have been interpreted by historians.</p> <p>Religious Histories: The Bhakti-Sufi Tradition</p> <p>Broad overview:a.Outline of religious developments during this period</p> <p>b.Ideas and practices of the Bhakti-Sufi saints. Story of Transmission: How Bhakti-Sufi compositions have been preserved. Excerpt: Extracts from selected Bhakti-Sufi works Discussion: Ways in which these have been interpreted by historians.</p> <p>New Architecture: Hampi</p> <p>Broad overview: Outline of new buildings during Vijayanagar period-temples, forts, irrigation facilities. Relationship between architecture and the political system. Story of Discovery: Account of how Hampi was found. Excerpt: Visuals of buildings at Hampi Discussion: Ways in which historians have analyzed and interpreted these structures.</p> <p>Agrarian Relations: The Ain-i-Akbari</p> <p>Broad overview: Structure of agrarian relations in the 16th and 17th centuries.Patterns of change over the period. Story of Discovery: Account of the compilation and translation of Ain-i-Akbari Excerpt: from the Ain-i-Akbar Discussion: Ways in which historians have used the text to reconstruct history</p>
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August	20	<p>Colonialism and Rural Society:</p> <p>Evidence from Official Reports</p> <p>Broad overview: Life of zamindars, peasants and artisans in the late 18th century East India Company, revenue settlements in various regions of India and surveys Changes over the nineteenth century</p> <p>Story of official records: An account of why official investigations into rural societies were undertaken and the types of records and reports produced.</p> <p>Excerpts: From Fifth Report, Accounts of Frances Buchanan-Hamilton, and Deccan</p>
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		<p>Riots Report.</p> <p>Discussion: What the official records tell and do not tell, and how they have been used by historians.</p> <p>Representations of 1857</p> <p>Broad overview:</p> <p>The events of 1857-58</p> <p>Vision of Unity</p> <p>How these events were recorded and narrated.</p> <p>Focus: Lucknow</p> <p>Excerpts: Pictures of 1857. Extracts from contemporary accounts</p> <p>Discussion: How the pictures of 1857 shaped British opinion of what had happened.</p>
September	21	Half yearly Examination
October	17	<p>Mahatma Gandhi through Contemporary Eyes</p> <p>Broad overview:</p> <p>The Nationalist Movement 1918-48.</p> <p>The nature of Gandhian politics and leadership.</p> <p>Focus: Mahatma Gandhi and the three movements and his last days as “finest hours”</p> <p>Excerpts: Reports from English and Indian language newspapers and other contemporary writings.</p> <p>Discussion :How newspapers can be a source of History</p>
November	19	<p>The making of the Constitution</p> <p>Focus: The Constitutional Assembly debates</p> <p>Excerpts: from the debates</p> <p>Discussion: What such debates reveal and how they can be analyzed.</p>
December	22	<p>Revision</p> <p>Pre boards</p>

GEOGRAPHY

Months	Working Days	Topics / Subtopics
April	21	<p>B1 Human Geography: Nature and Scope</p> <ul style="list-style-type: none"> ❖ Nature of Human Geography ❖ Fields and Sub-fields of Human Geography <p>B1 The World Population: Distribution, Density and Growth</p> <ul style="list-style-type: none"> ❖ Patterns of population distribution in the world ❖ Density of population ❖ Factors influencing the distribution of population ❖ Population growth ❖ Demographic transition ❖ Population control measures <p>B2 Population: Distribution, Density, Growth and Composition</p> <ul style="list-style-type: none"> ❖ Distribution of population ❖ Density of population ❖ Growth of population ❖ Regional variation population growth ❖ Population composition <p>B2 Human Settlements</p> <ul style="list-style-type: none"> ❖ Types of rural settlement ❖ Urban settlements ❖ Urbanisation in India <p>B3 Data - Its Source and Compilation</p> <ul style="list-style-type: none"> ❖ What is data ❖ Need of data ❖ Presentation of Data ❖ Sources of data ❖ Tabulation and classification of data ❖ Data compilation and presentation ❖ Processing of data ❖ Grouping of data ❖ Process of classification
May	13	<p>B2 Land Resources and Agriculture</p> <ul style="list-style-type: none"> ❖ Land use categories ❖ Land-use changes in India ❖ Common property resources ❖ Agricultural land use in India ❖ Cropping seasons in India ❖ Types of farming ❖ Foodgrains ❖ Oilseeds ❖ Fibre crops

		<ul style="list-style-type: none"> ❖ Other crops ❖ Agricultural development in India ❖ Problems of Indian agriculture <p>B2 Water Resources</p> <ul style="list-style-type: none"> ❖ Water resources of India ❖ Deterioration of water quality ❖ Watershed management ❖ Rainwater harvesting
June	17	<p>Qualifying Examination</p> <p>B1 Human Development</p> <ul style="list-style-type: none"> ❖ Growth and development ❖ The four pillars of human development ❖ Approaches to human development ❖ Measuring human development ❖ International comparisons
July	23	<p>B1 Primary Activities</p> <ul style="list-style-type: none"> ❖ Hunting and gathering ❖ Pastoralism ❖ Agriculture ❖ Mining <p>B1 Secondary Activities</p> <ul style="list-style-type: none"> ❖ Manufacturing ❖ Classification of manufacturing industries ❖ Concept of high technology industry <p>B2 Mineral and Energy Resources</p> <ul style="list-style-type: none"> ❖ Types of mineral resources ❖ Distribution of minerals in India ❖ Ferrous minerals ❖ Non-ferrous minerals ❖ Non-metallic minerals ❖ Energy resources ❖ Conservation of Mineral resources <p>B3 Data Processing</p> <ul style="list-style-type: none"> ❖ Measures of central tendency ❖ Comparison of Mean, Median and Mode
August	20	<p>B1 Tertiary and Quaternary Activities</p> <ul style="list-style-type: none"> ❖ Types of tertiary activities ❖ People engaged in tertiary activities ❖ Some selected examples ❖ Quaternary activities ❖ Quinary activities ❖ The digital divide <p>B2 Planning and Sustainable Development in Indian Context</p>

		<ul style="list-style-type: none"> ❖ Target Area Planning ❖ Hill Area Development Programme ❖ Drought Prone Area Programme ❖ Sustainable Development <p>B2 Transport and Communication</p> <ul style="list-style-type: none"> ❖ Land transport ❖ Water transport ❖ Air transportation ❖ Oil and gas pipelines ❖ Communication networks <p>B3 Graphical Representation of Data</p> <ul style="list-style-type: none"> ❖ Representation of data ❖ General rule for drawing graphs, diagrams and maps ❖ Construction of diagrams ❖ Classification of thematic maps based on method of construction
September	21	<p>Revision & Half Yearly Examination</p> <p>B1 Transport and Communication</p> <ul style="list-style-type: none"> ❖ Transport ❖ Modes of transportation ❖ Communications
October	17	<p>B1 International trade</p> <ul style="list-style-type: none"> ❖ History of international trade ❖ Gateways of international trade <p>B3 Spatial Information Technology</p> <ul style="list-style-type: none"> ❖ What is Spatial Information Technology ❖ What is GIS ❖ Advantages of GIS over manual methods ❖ Components of GIS ❖ Spatial data formats ❖ Sequence of GIS activities
November	16	<p>B2 International trade</p> <ul style="list-style-type: none"> ❖ Changing pattern of the composition of India's exports ❖ Changing pattern of the composition of India's import ❖ Direction of trade ❖ Sea ports as gateways of international trade ❖ Airports <p>B2 Geographical Perspective on Selected Issues and Problems</p> <ul style="list-style-type: none"> ❖ Environmental pollution ❖ Urban waste disposal ❖ Rural-urban migration ❖ Problems of slums ❖ Land degradation

		Revision & Pre Board - I
December/ January	21+20	Pre Board - I Revision & Pre Board - II

B1 - Fundamentals of Human Geography

B2 - India- People and Economy

B3 - Practical Work in Geography Part II

POLITICAL SCIENCE

A. Theory

UNITS		MARKS
Part A: CONTEMPORARY WORLD POLITICS		
1	The End of Bipolarity	8
2	New Centres of Power	6
3	Contemporary South Asia	6
4	United Nations and it's organization	5
5	Security in the Contemporary World	5
6	Environment and Natural Resources	5
7	Globalization	5
	Total	40
Part B: Politics in India since Independence		
1	Challenge of Nation Building	4
2	Planned Development	4
3	India's Foreign Policy	8
4	Parties and Party System in India	6
5	Democratic Resurgence	6
6	Regional Aspirations	6
7	Indian Politics- Recent Trends and Development	6
	Total	40

PROJECT WORK**20 MARKS****Grand Total 100**

MONTH	WORKING DAYS	TOPIC
March	10	Challenges of Nation Building The starting and backdrop with some context of the Cold War.
April	21	Challenges of Nation-Building Nehru's approach to nation-building; Legacy of partition: challenge of 'refugee' resettlement, the Kashmir problem. The End of Bipolarity New entities in world politics: Russia, Balkan states and Central Asian states. Introduction of democratic politics and capitalism in post-communist regimes. India's relations with Russia and other post-communist countries.
May	08	Planned Development Changing nature of India's Economic Development Planning Commission and Five Year Plans, National Development Council, NITI Aayog.
June	17	New Centres of Power Organizations: European Union, ASEAN, SAARC, BRICS. Nations: Russia, China, Israel, India, Japan and South Korea. Discussion about Project work and synopsis making
July	23	India's Foreign Policy Principles of Foreign Policy; India's Changing Relations with Other Nations: US, Russia, China, Israel; India's Relations with its Neighbours: Pakistan, Bangladesh, Bhutan, Nepal, Sri Lanka and Myanmar; India's Nuclear Programme. Contemporary South Asia Conflicts and efforts for Peace Democratization in South Asia: Pakistan, Nepal, Bangladesh, Sri Lanka, Maldives.
August	20	United Nations and its Organizations Principal Organs, Key Agencies: UNESCO, UNICEF, WHO, ILO, Security Council and the Need for its Expansion.

		Security in Contemporary World Security: Meaning and Type; New forms of threat to Security etc.
September	21	Parties and Party System in India One Party Dominance, Bi-Party System, Multi-Party Coalition System. Half Yearly Examination
October	17	Democratic Resurgence Jaya Prakash Narayan and Total Revolution, Ram Manohar Lohia and Socialism, Pandit Deendayal Upadhyaya and Integral Humanism, National Emergency, Democratic Upsurges – Participation of the Adults, Backwards and Youth. Environment and Natural Resources Environmental Movements, Global Warming and Climate Change, Conservation of Natural Resources. Globalization : Meaning, Manifestation and Debates.
November	19	Regional Aspirations Rise of regional parties. Punjab Crisis. The Kashmir Issue, Movements for Autonomy. Indian Politics: Recent Trends and Development Era of Coalitions, National Front, United Front, United Progressive Alliance (UPA) – I & II, National Democratic Alliance (NDA) I, II, III & IV, Issues of Development and Governance.
Dec- Jan	22+19	Pre boards

2) Project Work: 20 Marks

Note- Topics from the pdf extra topics to be covered with the syllabus side by side.

New edition NCERT for Political Science Books to be purchased.

SOCIOLOGY

Sociology

Months	Name of the Chapter
April	21.
	1. Introducing Indian Society (Non evaluative) <ul style="list-style-type: none">● Colonialism● Nationalism● Class and Community
	2. Demographic Structure and Indian Society <ul style="list-style-type: none">● Theories and concept in demography● Rural - Urban Linkages and divisions
	3. Social institutions : Continuity and change <ul style="list-style-type: none">● Family and kinship● The Caste System● Tribal Society
May -	85.
	5. Pattern of Social Inequality and Exclusion <ul style="list-style-type: none">● Caste, Prejudice, Scheduled castes and other Backward Classes● Marginalisation of Tribal Communities● The struggle for women's equality● The struggle of the Differently Abled.
JUNE –	17.
	6. Challenges of Cultural Diversity <ul style="list-style-type: none">● Cultural Communities and the Nation State● Problems of communalism, Regionalism and casteism● The Nation State, religion related issues, and identities● Communalism, Secularism and the Nation State.● State and Civil Society
	7. Suggestions for Project Work (Non Evaluative)
July	23
	Changes and Development in Indian Society
	8. Structural Change <ul style="list-style-type: none">● Colonialism● Industrialisation● Urbanisation
	9. Cultural Change <ul style="list-style-type: none">● Modernisation● Westernisation● Sanskritisation● Secularisation● Social Reform Movements and Laws

Aug 20

11. Changes and Development in Rural Indian Society

- Land Reforms, Green Revolution and Emerging Agrarian Society
- Agrarian Structure : Caste and Class in Rural India
- Land Reforms
- Green Revolution and its social consequences
- Transformation in Rural Society.
- Globalisation, Liberalisation and Rural Society

Sept 21

12. Changes and Development in Industrial Society

- From planned Industrialisation to Liberalisation.
- Getting a job
- Work Processes

Oct 17

15. Social Movements

- Theories and Classification of Social Movements
- Class based movements ; workers and peasants.
- Caste based movements : Dalit movements Backward caste movement
- Castes, Trends in Upper Caste Reformers
- Women's Movement in Independent India
- Tribal Movements
- Environmental Movements

NOVEMBER 19. **Revision**

PSYCHOLOGY

Month	Days	Topics and Sub-Topics
April	21	CH 1 Variations in Psychological Attributes <i>The topics in this unit are:</i> <ol style="list-style-type: none">1. Introduction2. Individual Differences in Human Functioning3. Assessment of Psychological Attributes4. Intelligence5. Psychometric Theories of Intelligence, Information Processing Theory: Planning, Attention-arousal and Simultaneous successive Model of Intelligence, Triarchic Theory of Intelligence; Theory of Multiple Intelligences.6. Individual Differences in Intelligence7. Culture and Intelligence8. Emotional Intelligence9. Special Abilities: Aptitude: Nature and Measurement10. Creativity

May+ june	8+17	<p>Practical 1- Ravens' standard progressive matrices / emotional stability test</p> <p>CH- 2 Self and Personality</p> <p><i>The topics in this unit are:</i></p> <ol style="list-style-type: none"> 1. Introduction 2. Self and Personality 3. Concept of Self 4. Cognitive and Behavioural aspects of Self 5. Culture and Self 6. Concept of Personality 7. Major Approaches to the Study of Personality <ul style="list-style-type: none"> • Type Approaches • Trait Approaches • Psychodynamic Approach and Post Freudian Approaches • Behavioural Approach • Cultural Approach • Humanistic Approach 8. Assessment of Personality <ul style="list-style-type: none"> • Self-report Measures • Projective Techniques • Behavioural Analysis <p>Practical 2- Maudsley Personality inventory (MPI)</p> <p>CH -3 Meeting Life Challenges</p> <p><i>The topics in this unit are:</i></p> <ol style="list-style-type: none"> 1. Introduction 2. Nature, Types and Sources of Stress 3. Effects of Stress on Psychological Functioning and Health <ul style="list-style-type: none"> • Stress and Health • General Adaptation Syndrome • Stress and Immune System • Lifestyle 4. Coping with Stress <ul style="list-style-type: none"> • Stress Management Techniques 5. Promoting Positive Health and Well-being <ul style="list-style-type: none"> • Life Skills <p>Positive Health</p> <p>Practical 3- Comprehensive anxiety scale</p>
June	17	Qualifying Examination

July	23	<p>CH-4 Psychological Disorders</p> <p><i>The topics in this unit are:</i></p> <ol style="list-style-type: none"> 1. Introduction 2. Concepts of Abnormality and Psychological Disorders <ul style="list-style-type: none"> • Historical Background 3. Classification of Psychological Disorders 4. Factors Underlying Abnormal Behaviour 5. Major Psychological Disorders <ul style="list-style-type: none"> • Anxiety Disorders • Obsessive-Compulsive and Related Disorders • Trauma-and Stressor-Related Disorders • Somatic Symptom and Related Disorders • Dissociative Disorders • Depressive Disorder • Bipolar and Related Disorders • Schizophrenia Spectrum and Other Psychotic Disorders • Neuro developmental Disorders • Disruptive, Impulse-Control and Conduct Disorders • Feeding and Eating Disorders • Substance Related and Addictive Disorders <p>Practical 4 – SCAT</p>
August	20	<p>CH- 5 Therapeutic Approaches</p> <p><i>The topics in this unit are:</i></p> <ol style="list-style-type: none"> 1. Nature and Process of psychotherapy <ul style="list-style-type: none"> • Therapeutic relationship 2. Types of Therapies <ul style="list-style-type: none"> • Behaviour Therapy • Cognitive Therapy • Humanistic-Existential Therapy • Alternative Therapies • Factors contributing to healing in Psychotherapy • Ethics in Psychotherapy • Rehabilitation of the Mentally Ill <p>CH- 6 Attitude and Social Cognition</p> <p><i>The topics in this unit are:</i></p> <ol style="list-style-type: none"> 1. Introduction 2. Explaining Social Behaviour 3. Nature and Components of Attitudes 4. Attitude Formation and Change <ul style="list-style-type: none"> • Attitude Formation • Attitude Change • Attitude-Behaviour Relationship

		5. Prejudice and Discrimination Strategies for Handling Prejudice
September	21	Half yearly Examination
October	17	CH-7 Social Influence and Group Processes <i>The topics in this unit are:</i> <ol style="list-style-type: none"> 1. Introduction 2. Nature and Formation of Groups 3. Type of Groups 4. Influence of Group on Individual Behaviour <ul style="list-style-type: none"> • Social Loafing • Group Polarisation Practical 5- AISS
November	19	Case Study on one psychological disorder. Revision
December	22	Revision Pre boards

GRAPHICS

<u>Class XII - Syllabus for the Session 2024-25</u> Subject: Fine Art- Graphics (Code no. 050)	
Months	Theory&PracticalTopics
April (21 days)	<p><u>THEORY:</u> Six Limbs of Indian Painting & Fundamentals of Visual Arts (Elements & Principles). A brief introduction to Indian Miniature Painting and Schools:- Pal, Jain & Central Indian paintings. Development of Indian Art. The Rajasthani School of Miniature Painting: - (1) Origin and Development, (2) Main features of the Rajasthani School. (3) Sub-Schools- Mewar, Bundi, Jodhpur, Bikaner, Kishangarh and Jaipur. (4) Study of different Rajasthani Paintings:- (a) Maru-Ragini by Sahibdin of Mewar, (b) Chaugan Players by Dana of Jodhpur, (c) Krishna on swing by Nuruddin of Bikaner, (d) Radha (Bani- Thani) by Nihal Chand of Kishangarh, (e) Bharat Meets Rama at Chitrakut by Guman of Jaipur.</p> <p><u>PRACTICAL :</u> Introduction of different Graphics medium and Serigraphy / Etching:- History, Method materials quality and safety. Relation between water and oil mediums. How Graphics (Printmaking) is different from other mediums. Why it is called Industrial art? How did it developed with Industrial growth? Object and Human figure Drawings. Creating layouts for Graphics using different lines, dots, circles, geometrical patterns and textures.... Serigraphy:- The history of stencils and silk screen, Methods and materials. The use and maintenance of the squeeze. Sealing registration for colour work and preparation for printing. Use of water and oil mediums in printing technology. Oils & Solvents for cleaning, use and characteristics of printing inks. Print quality- no spot anywhere even backside of print, never retouch brush in print, print should be neat and clean. Writing Artists' Proof (A/P), medium, subject & name in print. Finishing mounting and the print. Subjects of composition:- Black & White imaginative composition using different textures. Use of different types of textures in composition, Decorative design, Pattern Making; Flower vase; Affairs of family, friends and Daily life; Affairs of family professionals. And submit Theory Assignment Practical Progress Report.</p>

<p>May June (08+17 days)</p>	<p><u>THEORY :</u> The Pahari School of Miniature Painting: - (1) Origin and development, (2) Main features of the Pahari School, (3) Sub-Schools- Basohli, Guler, Kangra, Chamba and Garhwal, (4) Study of different Pahari Paintings:- (a) Krishna with Gopies by Manaku from Basohli, (b) Nand Yashoda and Krishna with Kinsmen going to Vrindavana by Nainsukh from Kangra</p> <p><u>PRACTICAL :</u> Sketching, Shading, Colouring with oil Pastel and Water colour, Composition, Still life study in pencil shading, Craft making, Presentation of Holiday works. Subjects of composition:- Games & Sports Activities; Composition with Nature; Landscape with human figure; Object study; Indian folk art/ traditional art.</p>
<p>July (23 days)</p>	<p><u>THEORY :</u> The Mughal School of Miniature Painting: (1) Origin and development, (2) Main features of the Mughal School, (3) Study of different Mughal Paintings:- (a) Krishna lifting Mount Goverdhana by Miskin of Akbar period, (b) Falcon on a Bird-Rest by Ustad Mansoor of Jahangir period, (c) Kabir and Raidas by Ustad Faquirullah Khan of Shahjahan period. (d) Marriage procession of Dara Shikoh by Haji Madni of Provincial Mughal (Avadh) period.</p> <p><u>PRACTICAL :</u> Printing using any two mediums like- Serigraphy, Linocut, Wood cut, Colography, MDF, Paper-cardboard and Stencil works in monochrome. Pay special attention to print quality and neatness (no extra spot or impression) even border side & back side of the print & surrounding areas. All prints should be neat and clean always. Subjects of composition:- Fantasy; National religions and cultural events and celebrations; Historical and social events and celebrations; Composition with birds and insects; Composition with animals;</p>
<p>Aug. (20 days)</p>	<p><u>THEORY :</u> The Deccan School of Miniature Painting:- (1) Origin and development, (2) Main features of the Deccan School (3) Study of different Deccan Paintings:- (a) Hazrat Nizamuddin Auliya and Amir Khusro of Hyderabad, (b) Chand Bibi Playing Polo (Chaugan) of Gol Konda. New Era in Indian Art. Contribution of Indian artists in the struggle for the National Freedom Movement. National Flag of India and Symbolic significance of its forms and the colour.</p> <p><u>PRACTICAL :</u> Practical Project Report writing, Serigraphy in two Colours using colour mixing system. Make use of line, tone and texture, exploiting the medium fully to realize composition. Size 30x20 cm. Subjects of composition:- Madhubani and other folk arts, Historical monuments; Folk and classical dances / theaters; Jharkhand folk art painting (Khobar & Sohrai), Patachitra of Bengal etc.;</p>
<p>Sept. (21 days)</p>	<p><u>THEORY :</u> Introduction to the Bengal School of Painting (1) Origin and development, (2) Main features of the Bengal School, (3) Study of different paintings of the Bengal school:- (a) Journey's End by Abanindranath Tagore, (b) Shiv and Sati by Nandlal Bose, (c) Radhika by M.A.R. Chughtai, (d) Meghdoot by Ram Gopal Vijaivargiya</p> <p><u>PRACTICAL :</u> Serigraphy / Etching printing using multicolour and Black & White. Serigraphy by cool colours using Poster / Fabric colours. Subjects of composition:- Traditional / ancient sculpture and painting; Relevant social issues; Daily life; Village life; Urban life; Copy of any Graphic Artists' work.</p>
<p>Oct. (17 days)</p>	<p><u>THEORY :</u> The Modern Trends in different Contemporary (Modern) Art development. Study of different Contemporary (Modern) Indian Paintings:- (a) Rama vanquishing the pride of the ocean by Raja Ravi Varma (b) Mother and child by Jamini Roy (c) Haldi Grinders by Amrita Sher-Gil (d) Mother Teresa by M.F. Husain</p>

	<p>PRACTICAL : Serigraphy by warm colours using Poster / Fabric colours. Commercial use of Graphics. Serigraphy / Etching printing on T-Shirts and other products. Subjects of composition:- Cartoon characters; Compositions with any two elements. Fantasy; Creative design and pattern making; Portrait.</p>
Nov. (19 days)	<p>THEORY : Study of different Contemporary (Modern) Indian Graphics:- (a) Children by Somnath Hore, (b) Devi by Jyoti Bhatt, (c) Of Walls by Anupam Sud, (d) Man, Woman and Tree by K. Laxma Goud Study of different Contemporary (Modern) Indian Sculptures:- (a) Triumph of Labour by Devi Prasad Roy Chowdhury (b) Santhal Family by Ramkinker Baij (c) Cries Unheard by Amarnath Sehgal (d) Ganesha by P.V. Janakiram</p> <p>PRACTICAL : Human figure (Colour and Black & white) compositions. Serigraphy using Primary and Secondary colours. Print your composition in one or two colours. Presentation of Graphics (Print Making). Technique of writing Artist's Proof (A/P), no. of prints (1/6), Medium, Subject, Name Class Sec. in prints.</p>
Dec. (22 days)	<p>THEORY : Revision of Theory and Previous Question Papers.</p> <p>PRACTICAL : Portfolio making with 10 best selected Graphics work- Finishing, mounting and file preparation, with record of the entire year's performance from sketch to finished Art work. Selected prints (either from Linocuts/ Woodcuts/ Paper-cardboard/ MDF/ Colography/ Serigraphy prints) for Portfolio. Practical Project Report Preparation on method, material, art works of the entire year. (Digital two copies).</p>
Jan. Feb. (19+19 days)	<p>THEORY : Revision work and Theory Question Papers</p> <p>PRACTICAL : Practical Exams, Submission of Portfolio with selected 10 best prints, 2 Practical Project Reports (Digital copies).</p>
Materials Required for Practical	<p>Silk screens of 12X15 or 15x20 inches (Approx), MDF Board (8x10inches), Small poster colour set of 6 colours, Few Brushes, Pencil, Small steel bowl-2, Small plastic bottle-2, Cello tape-1 inch, Big Paper knife cutter, Scissor, {Tarpine, Reducer / Nytero / Benzyl Acetate- ½ L (keep at home)}, Waste Cloths, Old News Papers, Apron, in a big Carry bag, Chart papers (A/2 size or ½ Chart paper unrolled), File boards for Portfolio of dark Colour etc.</p>
	<p>Please submit Theory Assignment and Practical Progress Report</p>
Practical Exam	<p>Practical Paper-I:- Layout making with black and white poster colour on given subject (original composition). Transforming layout on silk screen. Practical Paper-II :- Print Making process. Prints should be identical. All prints should be of good quality, neat and clean. In Practical Exam submit two identical prints along with layout on given topic. For extra prints use your own papers. Practical (Paper-III)-Portfolio with selected 10 Prints, 2 Practical Project Reports (Digital copies) and Viva / Oral on Method material, Fundamentals of art, History of Art.</p>

PAINTING

Class XII - Syllabus for the Session 2024 - 2025

Subject: Fine Art- Painting(Code no. 049)

Month	Th. / Pr.	Topics
April (21 days)		<p><u>THEORY :</u> Six Limbs of Indian Painting & Fundamentals of Visual Arts (Elements & Principles). A brief introduction to Indian Miniature Painting and Schools:- Pal, Jain & Central Indian paintings. Development of Indian Art. The Rajasthani School of Miniature Painting: - (1) Origin and Development, (2) Main features of the Rajasthani School. (3) Sub-Schools- Mewar, Bundi, Jodhpur, Bikaner, Kishangarh and Jaipur. (4) Study of different Rajasthani Paintings:- (a) Maru-Ragini by Sahibdin of Mewar, (b) Chaugan Players by Dana of Jodhpur, (c) Krishna on swing by Nuruddin of Bikaner, (d) Radha (Bani- Thani) by Nihal Chand of Kishangarh, (e) Bharat Meets Rama at Chitrakut by Guman of Jaipur.</p> <p><u>PRACTICAL :</u> Method and material of Painting. Drawing & Painting tools and materials. Introduction about Nature study- Foliage and flower. Rendering painting, Still life with different draperies of different colours for background and foreground. Subjects of composition:- Still life in pencil shading and colour with light and shade from a fixed point of view, Decorative design, Pattern Making Water colour painting (transparent & opaque), Pencil shading & pen ink. Subjects of composition:-Flower study and still life in pencil shading and colour, landscape painting, composition with human figure – study room, social event.</p>
May June (08 + 17 days)		<p><u>THEORY :</u> The Pahari School of Miniature Painting: - (1) Origin and development, (2) Main features of the Pahari School, (3) Sub-Schools- Basohli, Guler, Kangra, Chamba and Garhwal, (4) Study of different Pahari Paintings:- (a) Krishna with Gopies by Manaku from Basohli, (b) NandYashoda and Krishna with Kinsmen going to Vrindavana by Nainsukh from Kangra</p> <p><u>PRACTICAL :</u> Portrait study and Life study with pencil shading, sketching & colouring- composition with human figure; Storyboard painting and illustration, Subjects of composition:-Paper collage. Daily life, village life, one imaginative painting, animal figure, bird & flower(use pencil and pen). Presentation of Holiday works.</p>
July (23 days)		<p><u>THEORY :</u> The Mughal School of Miniature Painting: (1) Origin and development, (2) Main features of the Mughal School, (3) Study of different Mughal Paintings:- (a) Krishna lifting Mount Goverdhana by Miskin of Akbar period, (b) Falcon on a Bird-Rest by UstadMansoor of Jahangir period, (c) Kabir and Raidas by UstadFaquirullah Khan of Shahjahan period. (d) Marriage procession of Dara Shikoh by Haji Madni of Provincial Mughal (Avadh) period.</p> <p><u>PRACTICAL :</u> Drawing method, Elements of Art, Design through modern concept, abstract painting, texture painting and Op art. Subjects of composition:-Painting, Affairs of family, friends and daily life; Affairs of family professionals; Bird and animal composition; Landscape painting with human figures.</p>
Aug. (20 days)		<p><u>THEORY :</u> The Deccan School of Miniature Painting:- (1) Origin and development, (2) Main features of the Deccan School (3) Study of different Deccan Paintings:- (a) HazratNizamuddinAuliya and Amir Khusro of Hyderabad, (b) Chand Bibi Playing Polo (Chaugan) of GolKonda. New Era in Indian Art. Contribution of Indian artists in the struggle for the National Freedom Movement. National Flag of India and Symbolic significance of its forms and the colour.</p>

	<p>PRACTICAL : Project report writing, Painting in different medium, Mixed medium, Wax resistance technique. White on white technique, Monochrome painting, Typography painting, Poster painting. Subjects of composition:-Folk art of Jharkhand (Khobar&Sohrai), Madhubani, Patachitra of Bengal etc.; Fresco/ Mural or Tempera/ any traditional process. Copy of any miniature painting with watercolour, Landscape with watercolour, Human figure composition- Rainy Day, Park, Cultural event.</p>
<p>Sept. (21 days)</p>	<p>THEORY : Introduction to the Bengal School of Painting (1) Origin and development, (2) Main features of the Bengal School, (3) Study of different paintings of the Bengal school:- (a) Journey's End by Abanindranath Tagore, (b) Shiv and Sati by Nandalal Bose, (c) Radhika by M.A.R. Chughtai, (d) Meghdoot by Ram GopalVijaiavargiya</p> <p>PRACTICAL : Concept of modern art, Modern Art painting (acrylic colour or water colour or poster colour), Canvas or Canvas board painting. Batik Tie and Dye, Rangooli, Mandala, Alpana. Subjects of painting composition:-Any festival, Colourful composition, Flowers with flower pot, Imaginative composition.</p>
<p>Oct. (17 days)</p>	<p>THEORY : The Modern Trends in different Contemporary (Modern) Art development. Study of different Contemporary (Modern) Indian Paintings:- (a) Rama vanquishing the pride of the ocean by Raja Ravi Varma(b) Mother and child by Jamini Roy (c) Haldi Grinders by Amrita Sher-Gil (d) Mother Teresa by M.F. Husain</p> <p>PRACTICAL : Abstract art painting, Modern art, Collage art, Poster Making, Mixed Media, Cartoon and Caricature. Subjects of painting composition:-Mother and child, Cityscape, Copy of any Modern Art.</p>
<p>Nov. (19 days)</p>	<p>THEORY : Study of different Contemporary (Modern) Indian Graphics:- (a) Children by SomnathHore, (b) Devi by Jyoti Bhatt, (c) Of Walls by AnupamSud, (d) Man, Woman and Tree by K. LaxmaGoud Study of different Contemporary (Modern) Indian Sculptures:- (a) Triumph of Labour by Devi Prasad Roy Chowdhury (b) Santhal Family by RamkinkerBaij (c) Cries Unheard by AmarnathSehgal(d) Ganesha by P.V. Janakiram</p> <p>PRACTICAL : Colour composition in Acrylic and Water colour. Portfolio making technique. Subjects of painting composition:- Fantasy & dream, Any imaginative composition, Any games or Sports composition (indoor & outdoor).</p>
<p>Dec. (22 days)</p>	<p>THEORY : Revision of Theory and Previous Question Papers.</p> <p>PRACTICAL : Portfolio making – Portfolio presentation of painting with record of the entire year's performance from sketch to finished Art work, Pencil shading, pen & ink work, Landscape paintings, Human figure composition, Still life painting, Human figure drawing & sketch, Portrait painting, Modern art painting, Abstract art, Imaginative painting, Canvas or Canvas board painting. Total selected 20 works (Class XI & XII) to be presented with proper mounting in A/2 or A/3 size portfolio. Practical project report (digital two copies) for Practical exam with Portfolio.</p>
<p>Jan. Feb. (19+19days)</p>	<p>THEORY : Revision work and Theory Question Papers</p> <p>PRACTICAL : Practical Exams, Submission of complete Portfolio with selected 20 works, 2 Practical Project Reports(Digital copies).</p>

Materials and topics required Practical	Materials required- Pencil, eraser, shading pencil set, marker (thin and bold), artist oil pastel, artist water colour cakes (18 or 24), artist acrylic colour, big bowl, big colour palate, rough cloth, news paper, paper clip, hard board or file board, A/3 size drawing copy, A/3 size chart paper (unrolled), artist brush pen set (camel), Little artist brush pen (AddGel), different good quality brushes / 66 Series brush set, 1 Canvas board, File boards for Portfolio of dark Colour, Portfolio with selected 20 paintings, project report-2.
	Please submit Theory Assignment and Practical Progress Report
Practical Exam	<p>Practical Topics (Paper-I)- Pencil shading- Still life study, Nature study, Foliage study, Object study.(Drawing, composition, treatment of media/colour ,overall impression.)</p> <p>Practical Topics (Paper-II)-Colourful composition with human figure, daily life, village life, urban life, drawing room, rainy day, festival, market, city life, games & sports, fantasy & dream, cultural & social events, bird and animal with human figure. (Composition, subject, treatment of media/colour , originality ,creativity, overall impression.)</p> <p>Practical (Paper-III)- Record of the entire year's performance from sketch to finish art works.Portfolio with selected 20 paintings, 2 Practical Project Reports(Digital copies) Painting Practical Exam (MCQ) and Viva / Oral on Method material, Fundamentals of art, History of Art.& Six limbs of Indian Art(shadangas)</p>

PHYSICAL EDUCATION

MONTH	NO. OF DAYS	UNIT	TOPIC	MONTH	NO. OF DAYS	UNIT	TOPIC
MARCH & APRIL	08+ 21	1	<p align="center"><u>MANAGEMENT OF SPORTING EVENT</u></p> <p>1. Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling)</p> <p>2. Various Committees & their Responsibilities (pre; during & post)</p> <p>3. Fixtures and their Procedures – Knock-Out (Bye & Seeding) & League (Staircase, Cyclic, Tabular method) and Combination tournaments.</p> <p>4. Intramural & Extramural tournaments – Meaning, Objectives & Its Significance</p> <p>5. Community sports program (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity)</p>	JULY	16	3	<p align="center"><u>YOGA AS PREVENTIVE MEASURE FOR LIFESTYLE DISEASE</u></p> <p>1. Obesity: Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama.</p> <p>2. Diabetes: Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana, Bhujangasana, Shalabhasana, Dhanurasana, Suptavajarasana, Paschimottanasana, Ardha-Mastendrasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalabhati.</p> <p>3. Asthma: Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, UttanMandukasan -a, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalabhati, Gomukhasana, Matsyaasana, Anuloma - Viloma.</p> <p>4. Hypertension: Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Uttanpadasana, ArdhaHalasana, Sarala Matyasana, Gomukhasana, UttanMandukasana, Vakrasana,</p>

							<p>Bhujangasana, Makarasana, Shavasana, Nadishodhanapranayam, Sitlipranayam.</p> <p>5. Back Pain and Arthritis: Procedure, Benefits & Contraindications of Tadasan, Urdhawahastootansana, Ardh-Chakrasana, Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujandgasana, Gomukhasana, Bhadrasana, Makarasana, NadiShodhana pranayama.</p>
APRIL	09	2	<p>CHILDREN AND WOMEN IN SPORTS</p> <ol style="list-style-type: none"> 1. Exercise guidelines of WHO for different age groups. 2. Common postural deformities-knock knees, flat foot, round shoulders, Lordosis, Kyphosis, Scoliosis, and bow legs and their respective corrective measures. 3. Women's participation in Sports – Physical, Psychological, and social benefits. 4. Special consideration (menarche and menstrual dysfunction) 5. Female athlete triad (osteoporosis, amenorrhea, eating disorders). 	AUGU ST	20	4	<p><u>PHYSICAL EDUCATION AND SPORTS FOR CWSN (CHILDREN WITH SPECIAL NEEDS)</u></p> <ol style="list-style-type: none"> 1. Organizations promoting Disability Sports (Special Olympics; Paralympics; Deaflympics) 2. Concept of Classification and Divisioning in Sports. 3. Concept of Inclusion in sports, its need, and Implementation; 4. Advantages of Physical Activities for children with special needs. 5. Strategies to make Physical Activities assessable for children with special needs.

MAY & JUNE	22	5	<p style="text-align: center;"><u>SPORTS AND NUTRITION</u></p> <ol style="list-style-type: none"> 1. Concept of balanced diet and nutrition 2. Macro and Micro Nutrients: Food sources & functions 3. Nutritive & Non-Nutritive Components of Diet 4. Eating for Weight control– A Healthy Weight, The Pitfalls of Dieting, Food Intolerance, and Food Myths 5. Importance of Diet in Sports-Pre, During and Post competition Requirements 	SEPTEMBER	10	7	<p style="text-align: center;"><u>PHYSIOLOGY AND INJURIES IN SPORTS</u></p> <ol style="list-style-type: none"> 1. Physiological factors determining components of physical fitness 2. Effect of exercise on the Muscular System 3. Effect of exercise on the Cardio-Respiratory System 4. Physiological changes due to aging 5. Sports injuries: Classification (Soft Tissue Injuries -Abrasion, Contusion, Laceration, Incision, Sprain & Strain; Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted)
MONTH	NO. OF DAYS	UNIT	TOPIC	MONTH	NO. OF DAYS	UNIT	TOPIC

MAY & JUNE	14	6	<p><u>TEST AND MEASUREMENT IN SPORTS</u></p> <p>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 9-18yrs/ class 4-12: BMI, 50mt Speed test, 600mt Run/Walk, Sit & Reach flexibility test, Strength Test (Partial Abdominal Curl Up, PushUps for boys, Modified Push-Ups for girls)</p> <p>2. Measurement of CardioVascular Fitness – Harvard Step Test – Duration of the Exercise in Seconds x100/5.5 X Pulse count of 1-1.5 Min after Exercise.</p> <p>3. Computing Basal Metabolic Rate (BMR)</p> <p>4. 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 5. Johnsen – Methney Test of Motor Educability (Front Roll, Roll, JumpingHalf-Turn, Jumping fullturn.</p>	OCTOBER	17	9	<p><u>PSYCHOLOGY AND SPORTS</u></p> <p>1. Personality; its definition & types (Jung Classification & Big Five Theory)</p> <p>2. Motivation, its type & techniques.</p> <p>3. Exercise Adherence: Reasons, Benefits & Strategies for Enhancing it</p> <p>4. Meaning, Concept & Types of Aggressions in Sports</p> <p>5. Psychological Attributes in Sports – Self-Esteem, Mental Imagery, SelfTalk, Goal Setting</p>
JULY	10	8	<p><u>BIOMECHANICS AND SPORTS</u></p> <p>1. Newton’s Law of Motion & its application in sports</p> <p>2. Types of Levers and their application in Sports.</p> <p>3. Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports</p> <p>4. Friction & Sports</p> <p>5. Projectile in Sports</p>	NOVEMBER	13	10	<p><u>TRAINING IN SPORTS</u></p> <p>1. Concept of Talent Identification and Talent Development in Sports</p> <p>2. Introduction to Sports Training Cycle – Micro ,Meso, Macro Cycle.</p> <p>3. Types & Methods to Develop – Strength, Endurance, and Speed.</p> <p>4. Types & Methods to Develop – Flexibility and Coordinative Ability.</p> <p>5. Circuit Training - Introduction & its importance</p>

SANTOSH KUMAR
HOD PHY. EDU.

HUMILITY RAKSHA MINZ
PHY. EDU

MUSIC

DELHI PUBLIC SCHOOL, SAIL TOWNSHIP, RANCHI
MONTHLY SYLLABUS OF CLASS XII (SESSION 2024-25)
'HINDUSTANI MUSIC VOCAL'
CODE- 034

<u>Months</u>	<u>Practical Topic</u>	<u>Theory Topic</u>
March	Raag Bhairav (Drut khyal)	Brief study of the following:- Alankar, Alap, Tana, Meend, Gamak
April-	Taan of Raag Bhairav Vilambit khyal in Raga Bhairav (Astayi)	Historical development of Time Theory of Ragas
May	Vilambit khyal in Raag Bhairav (Antara)	Description of prescribed talas along with tala notation with thah, dugun and chaugun -Jhaptala , Rupak
June	Raag Bageshri (Drut khyal)	Critical study and writing notation of Raga Bageshri Description of Dhamar talawith tala notation
July	Taan of Raag Bageshri Taan in Vilambit khyal	Details study of Sangeet Ratnakar
August	Raag Malkouns (Drut khyal)	Brief study of the following:- Gram, Murchhana, Kan, Khatka, Murki
September	Taan in Raga Malkouns Tarana in Raga Malkouns	Details study of Sangeet Parijat Knowledge of tuning of the Tanpura
October	Dhamar in Raag Malkouns (asthai)	Life sketch and contribution to music of – Faiyaz kha, Bade Gulam Ali Kha, Krishna Rao Shankar Pandit
November	Dhamar in Raag Malkouns(antara)	Description of Dhamar Tala with Tala notation.
December	Revision& pre board exam	Revision& pre board exam
January	Pre board -2	Pre board-2
February	Practical exams	Practical exams

Sub - Odissi Dance (Code No. 059)

Months	Period	Topics
March	2	Learning and practice of one Pallavi. Definition of the term Pallavi and Demonstration of the item.
April	4	Learning and practice of one Pallavi. Recitation of the Ukutas of the item with hands. Elementary knowledge about the three styles of chhau : Mayurbhanj, Seraikella and Purulla.
May	3	Brief notes on the lives and contribution of the three Gurus : Guru Pankaj Charan Das, Guru Kelucharan Mohapatra and Guru Deba Prasad Das. Name the folk dance of Odisha. Elementary introduction to the texts: Natya Shastra, Abhinaya Darpana and Abhinaya Chandrika -a) Identification of the author (approximate date) (b) Basic overview of the broad areas covered in the context of each text. (c) Myths regarding the origin of dance according to each text.
Jun & July	3	(a) Basic understanding of the term ABHINAYA and definition of its four aspects : Angika, Vachika, Aharya and Sattvik (b) Rasa ; Definition and short explanation of the nine rasas.
Aug	3	Practice of patak hasta mudra viniyog acc to Abhinaya Darpan. Short notes on : (a) The Aharya of Odissi (b) The music accompaniment of Odissi (c) Past and present exponents of Odissi their short biography and contribution. And brief explanation of the following terms: (a) Nritya, Nritya, and Natya (b) Matra, Laya, Taal, Avartan, Vibhaga (c) Tandav and Lasya (d) Natyadharmi and Lokadharmi.
Sept	4	Ability to demonstrate the following Bhangis: Samabhanga, Abhanga, Tribhaanga, Alasaa, Darpani, Abhimama, Mardala, Parshva Mardala, and Biraja, Akuchana, Kumbhaka, Architkar or Nibedana, Daalmalika. Ability to write the notation of the learnt items of Sthayi and Moksha. Ability to show different paad bhedas and bramaris. Definition and short explanation of nine Rasa. And folk dance of Odisha.
Oct	2	Revision of the Pallavi. Revision of Patak Hasta Mudra Viniyog.
