



Syllabus

2026 - 2027

CLASS - XII

DELHI PUBLIC SCHOOL

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**CLASS – XII****Month– April****Working Days–21****Topics**

- FL** - My Mother At Sixty Six (Poem)
The Last Lesson
Lost Spring
Keeping Quiet (Poem)
- VS** - The Third Level
- AWS** - Notice Writing
Letter To The Editor

Month– May**Working Days–7+5=12****Topics**

- VS** - The Tiger King
- AWS** - Article Writing

Month– June**Working Days–16****Topics**

- FL** - Deep Water
- VS** - Journey To The End of the Earth

Month– July**Working Days–22****Topics**

- FL** - The Rattrap
- A Thing of Beauty (Poem)
- Indigo
- VS** - The Enemy
- AWS** - Job Application

**CLASS - XII****Month- August****Working Days-22****Topics**

- FL** - Poet and Pancakes
- A Roadside Stand (Poem)
AWS - Invitations & Replies (Formal & Informal)
Report Writing
Assessment of Speaking and Listening

Month- September**Working Days-23****Topics**

- Revision For Half Yearly
FL - Aunt Jennifer Tiger (Poem)
VS - On the Face of It

Month- October**Working Days-18****Topics**

- FL** - The Interview
- Going Places
VS - Memories of Childhood
AWS - Revision

Month- November**Working Days-13****Topics****Revision Project Work**



Topics

UNIT – 8 : LINEAR PROGRAMMING

- 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

UNIT 1 : NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS

- 1.1 Modulo Arithmetic
- 1.2 Congruence Modulo
- 1.4 Alligation and Mixture
- 1.5 Numerical Problems
 - Boats and Streams (upstream and downstream)
 - Pipes and Cisterns
 - Races and Games
- 1.6 Numerical Inequalities

UNIT – 2 : ALGEBRA

- 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

**CLASS - XII****SUBJECT – APPLIED
MATHEMATICS****Month- May****Working Days-7+5=12**

Topics

UNIT - 2: ALGEBRA (CONTINUED)

- 2.4 Determinants
- 2.5 Inverse of a matrix
- 2.6 Solving system of simultaneous equations using matrix method, Cramer's rule

UNIT - 3: CALCULUS**Differentiation and its Applications**

- 3.1 Higher Order Derivatives
- 3.2 Applications of Derivatives

Month- June**Working Days-16**

Topics

Qualifying Examination**UNIT - 3 : CALCULUS (CONTINUED)**

- 3.3 Marginal Cost and Marginal Revenue using derivatives
- 3.4 Increasing/Decreasing Functions
- 3.5 Maxima and Minima

Month- July**Working Days-22**

Topics

UNIT- 3 : CALCULUS (CONTINUED)**Integration and its Applications**

- 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



Topics

Differential Equations and Modeling

3.10 Differential Equations

3.11 Formulating and Solving Differential Equations
(Using Variable Separable only)

UNIT - 4 : PROBABILITY DISTRIBUTIONS

4.1 Probability Distributions

4.2 Mathematical Expectation

4.3 Variance

4.4 Binomial Distribution

4.5 Poison Distribution

4.6 Normal Distribution

Topics

Differential Equations and Modeling

3.10 Differential Equations

3.11 Formulating and Solving Differential Equations
(Using Variable Separable only)

UNIT - 4 : PROBABILITY DISTRIBUTIONS

4.1 Probability Distributions

4.2 Mathematical Expectation

4.3 Variance

4.4 Binomial Distribution

4.5 Poison Distribution

4.6 Normal Distribution



CLASS - XII

SUBJECT – APPLIED
MATHEMATICS

Month- October

Working Days-18

Topics

UNIT - 6 :INDEX NUMBERS & TIME BASED DATA

6.4 Time Series

6.5 Components of Time Series

6.6 Time Series analysis for uni-variate data

6.7 Secular Trend

6.8 Methods of Measuring trend

Month- November

Working Days-13

Topics

UNIT - 7 : FINANCIAL MATHEMATICS

7.1 Perpetuity, Sinking Funds

7.2 Valuation of Bonds

7.3 Calculation of EMI

7.4 Compound Annual Growth Rate

7.5 Linear method of Depreciation

Revision

Discussion on few sample Papers

PB-1.

Month- December

Working Days-22

Topics

PB-1 (Continued..)

Discussion on common errors.

PB-2.



DELHI PUBLIC SCHOOL

CLASS - XII

**SUBJECT – APPLIED
MATHEMATICS**

Month- January

Working Days-17

Topics

SSCE Practical Examination - 2027

Month- February

Working Days-21

Topics

SSCE Theory Paper Examination - 2027

Month- March

Working Days-23

Topics

SSCE Theory Paper Examination - 2027
(Continued...)

Theory paper : Full Marks : 80

Practical paper : Full Marks : 20

Practical paper comprised of :

- Record of at least 10 practicals.
- One Mathematics activity to be shown on the day of Mathematics activity.
- One practical to be shown on the day of the exam.
- Viva

Total marks : 100



Topics

1. 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 and geometrical interpretation, properties and application of scalar product of vectors, Definition and geometrical interpretation, properties and application of vector product of vectors.

Activity No.12**2. Three-Dimensional Geometry:**

Direction cosines and direction ratios of a line joining two points, Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines.

3. Matrices:

Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication of two matrices and multiplication of a matrix with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non- commutativity of multiplication of matrices & existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2).



Topics

4. 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.

❖ Properties of determinant

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.

Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

Activity No. 6

Month– May**Working Days–7+5=12**

Topics

5. Linear Programming Problems (LPP):

Introduction, related terminologies such as Constraints, Objective functions, 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).

6. Probability:

Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean, and variance of random variable.

❖ Binomial Trial

Activity No. 13



Topics

Qualifying Exam**7. Relations:**

Types of relations, reflexive, symmetric transitive and equivalence relations,

Activity No. 1 and 2**8. Functions:**

One to one and onto functions,

Activity No. 4

Month– July**Working Days–22**

Topics

9. Inverse trigonometric functions:

Definition, range, domain, principal value branch. Graphs of Inverse trigonometric functions,

Activity No. 3**10. Continuity and Differentiability:**

Continuity and differentiability, chain rule. derivatives of inverse trigonometric function, 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.



Topics

Activity No.5**11. Applications of Derivatives:**

Rate of change of physical 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).

Activity No. 7, 8, 9, 10 and 13

Month– August

Working Days–22

Topics

12. Integration:

Integration as inverse process of differentiation, Integration of a variety of functions by substitution, transformation. Evaluation of simple integrals of the special type of problems based on them by partial fractions.

Integration by parts, special integrals like

$$\frac{1}{x^2-a^2}, \frac{1}{x^2+a^2}, \frac{1}{a^2-x^2}, \frac{1}{\sqrt{x^2 \pm a^2}}, \frac{1}{\sqrt{a^2-x^2}}, \frac{1}{ax^2+bx+c}, \frac{1}{\sqrt{ax^2+bx+c}},$$

$$\frac{px+q}{ax^2+bx+c}, \frac{px+q}{\sqrt{ax^2+bx+c}}, \sqrt{ax^2+bx+c}$$

$$\sqrt{a^2-x^2}, \sqrt{x^2 \pm a^2}, (ax+b)\sqrt{x^2 \pm a^2}, \\ (ax+b)\sqrt{a^2-x^2},$$



DELHI PUBLIC SCHOOL

SUBJECT – MATHEMATICS

CLASS – XII

CORE

Month– September

Working Days–23

Topics

7. Definite integrals

Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals

Activity No. 11

Half Yearly Exam,

Month– October

Working Days–18

Topics

8. Applications of the integrals:

Applications in finding the area under simple curves especially lines, circles, parabolas, ellipses (in Standard form only)

9. 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, Solution of linear differential equations of first order and first degree.

Month– November

Working Days–13

Topics

Revision

Discussion on few sample Papers

PB-1



DELHI PUBLIC SCHOOL

**SUBJECT – MATHEMATICS
CORE**

**CLASS – XII
Month– December**

Working Days–22

Topics

**PB-1 (Continued..)
Discussion on common errors.
PB-2.**

Month– January

Working Days–17

Topics

SSCE Practical Examination –2027

Month– February

Working Days–21

Topics

SSCE Theory Paper Examination –2027

Month– March

Working Days–21

Topics

SSCE Theory Paper Examination –2027

Theory paper: Full Marks 80

Practical paper: Full Marks 20

Practical paper comprised of:

- I. Record of at least 08 practicals.
- II. One project file of any one mathematical activity
- III. One practical to be shown on the day of the exam.
- IV. Viva

Total marks 100.

Lab Activity in Mathematics

1. To make a partition of a set of students of class XII on the basis of a relation defined as $R = \{ (a, b) : a \text{ and } b \text{ both have same birth year/birth day/birth month} \}$ and confirm it as an equivalence relation.
2. To make a partition of a set $A \times A$ where $A = \{x : x \text{ is the number appeared on the top face of a die.}\} = \{1, 2, 3, 4, 5, 6\}$ based on a relation $(a, b)R(c, d) \Rightarrow a + d = b + c$ means Sum of exteriors = Sum of interiors.
3. To draw the graph of $\sin^{-1}x$ using the graph of $\sin x$ and demonstrate the concept of mirror reflection about the line $y = x$.
4. To sketch the graph of 2^x and $\log_2 x$ and to examine that they are mirror images of each other.
5. To establish a relationship between **common logarithm (to the base 10)** and **natural logarithm (to the base e)** of a number n .
6. Formation of **code** through **matrix multiplication**.
7. To verify for a function f to be continuous at given point $x = (x_0, y_0)$ $\Delta y = |f(x_0 + \Delta x) - f(x_0)|$ is arbitrary small, provided Δx is sufficiently small.
8. To understand the concept of decreasing and increasing functions.
9. To understand the concepts of local maxima, local minima and point of inflection.
10. To understand the concept of **Absolute maxima and absolute minima** of a function in a given closed interval through a graph.
11. To evaluate the definite integral $\int_0^1 \sqrt{1-x^2} dx$ as the limit of the sum and verify it by actual integration.
12. To verify geometrically that $a(\vec{a} + \vec{b}) = \alpha \vec{a} + \alpha \vec{b}$, and $(\alpha + \beta)\vec{a} = \alpha \vec{a} + \beta \vec{a}$.
13. 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.
14. To find the time when the area of a rectangle of given dimension become maximum, if the length is decreasing and breadth is increasing at a given rate.



Topics

Unit I: Electrostatics**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).

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).

Topics

Unit II: Current Electricity**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.



Topics

Scholastic proficiency Exam**Unit III: Magnetic Effects of Current and Magnetism****Chapter–4: Moving Charges and Magnetism**

Concept of magnetic field, Oersted's experiment.

Biot – Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire. Straight solenoid (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields.

Chapter–4: Moving Charges and Magnetism

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.

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

Chapter–5: Magnetism and Matter

Bar magnet, bar magnet as an equivalent solenoid (qualitative treatment only), magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis (qualitative treatment only), torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines.

Magnetic properties of materials– Para-, dia- and ferro – magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties.



Topics

Unit IV: Electromagnetic Induction and Alternating Currents**Chapter–6: Electromagnetic Induction**

Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction.

Chapter–7: Alternating Current

Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LCR series circuit (phasors only), resonance, power in AC circuits, power factor, wattless current. AC generator, Transformer.

Unit V: Electromagnetic waves**Chapter–8: Electromagnetic Waves**

Basic idea of displacement current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only).

Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.

Unit VI: Optics**Chapter–9: Ray Optics and Optical Instruments**

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.

Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.



Topics

HALF YEARLY EXAMINATION**Chapter–10: Wave Optics**

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).

Topics

Unit VII: Dual Nature of Radiation and Matter**Chapter–11: Dual Nature of Radiation and Matter**

Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation- particle nature of light.

Experimental study of photoelectric effect

Matter waves-wave nature of particles, de-Broglie relation.

Unit VIII: Atoms and Nuclei

Chapter–12: Atoms

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of nth possible orbit, velocity and energy of electron in nth orbit, hydrogen line spectra (qualitative treatment only).

Chapter–13: Nuclei

Composition and size of nucleus, nuclear force

Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.

**Topics****Unit IX: Electronic Devices****Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits**

Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors– p and n type, p–n junction

Semiconductor diode – I–V characteristics in forward and reverse bias, application of junction diode – diode as a rectifier.

REVISION, PRE–BOARD – I**Topics****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.

**CLASS – XII****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.



Topics

SOLUTION

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.

ELECTROCHEMISTRY

Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea,) dry cell – electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.

Topics

BIOMOLECULES

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.



Topics

CHEMICAL KINETICS**Unit IV: Chemical Kinetics**

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.

Topics

Haloalkanes and Haloarenes.

Haloalkanes: Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation mechanism of substitution reactions.

Haloarenes: Nature of C–X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only).

Uses and environmental effects of-dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

Unit**Alcohols, Phenols and Ethers 10 Periods 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.



CLASS – XII

Month– July

Working Days–22

Topics

Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

Month– August

Working Days–22

Topics

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.

Month– September

Working Days–23

Topics

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



Topics

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.

Topics

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).

Topics

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. © 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 $\text{Zn}/\text{Zn}^{2+} \parallel \text{Cu}^{2+}/\text{Cu}$ 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-benzal Acetone
- 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).



CLASS – XII

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: CO_3^{2-} , S^{2-} , SO_3^{2-} , NO_2^- , SO_4^{2-} , Cl^- , Br^- , I^- , PO_4^{3-} , $\text{C}_2\text{O}_4^{2-}$, CH_3COO^- , NO_3^-

(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 power, 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.



Topics

Unit - 6**REPRODUCTION****Ch.1. 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, parthenocarpy, polyembryony, significance of seed and fruit formation.

Ch.2. Human reproduction

Male and female reproductive system, Microscopic anatomy of testis and ovary, gametogenesis-spermatogenesis and oogenesis, menstrual cycle, fertilization, embryo development upto blastocyst formation, implantation, pregnancy and placenta formation (Elementary idea), parturition (Elementary idea), lactation (Elementary idea).

Topics

Unit - 6 & 7**Ch.3. 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).



Topics

GENETICS & EVOLUTION**Ch. 4. Principles of inheritance and variation**

Mendelian inheritance, deviations from mendelism – Incomplete dominance, Co-dominance, Multiple allelism and inheritance of blood group, Pleiotrophy, Elementary idea of Polygenic inheritance, Chromosomal theory of inheritance, Chromosomes and genes, Sex determination – In humans, birds, honey bee, linkage and crossing over, sex linked inheritance-Haemophilia, colour blindness, Mendelian disorders in humans – thalassemia; chromosomal disorders in humans- Down's syndrome, Turner's syndrome and Klinefilter's syndrome.

Topics

QUALIFYING EXAMINATION**Unit - 7****Ch. 5. Molecular Basis of inheritance**

Search for genetic material and DNA as 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 fingerprinting.



Topics

Ch.6. Evolution

Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution; variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy-Weinberg's principle; adaptive radiation; human evolution.

BIOTECHNOLOGY & ITS APPLICATION**Ch. 9. Biotechnology – Principles & processes**

Genetic engineering (Recombinant DNA technology).

Ch.10. Biotechnology and its Application

Application of biotechnology in health and agriculture, Human insulin and vaccine production, Gene therapy, GMO – Bt crops, Transgenic animals, Biosafety issues, Biopiracy, Patents.

Topics

Unit – 8**BIOLOGY & HUMAN WELFARE****Ch. 7. Human Health & Diseases**

Pathogens, parasites, causing human diseases (Malaria, dengue, chikungunya, Filariasis, Ascariasis, Typhoid, Pneumonia, Common cold, Amoebiasis, Ringworm) and their control, basic concepts of immunology-vaccine, Cancer, HIV, AIDS; Adolescence - drug and alcohol abuse.

Ch. 8. Microbes in Human Welfare

Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as biocontrol agents and biofertilisers. Antibiotics; production and judicious use.

**CLASS - XII****Month–September****Working Days–23**

Topics

REVISION & HALF YEARLY EXAMINATION**Month–October****Working Days–18**

Topics

Unit – 10**ECOLOGY AND ENVIRONMENT****Ch.11. Organisms and Populations**

Population interactions–mutualism, competition, predation, parasitism; Population attributes–growth, birth and death rate, age distribution.

Ch.12. Ecosystem

Ecosystem: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy.

Month– November**Working Days–13**

Topics

Ch.13. Biodiversity and its Conservation

Biodiversity–Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.

PRE– BOARD – I**Month– December****Working Days–22**

Topics

PRE– BOARD – II



Topics

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)

Topics

Exception Handling: Introduction, handling exceptions using try-except-finally blocks

Topics

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



Topics

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

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()

Data Structure: Stack, operations on stack (push & pop), implementation of stack using list.

Topics

Database Management

Database concepts: introduction to database concepts and its need

Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key)

Structured Query Language: introduction, Data Definition Language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints (not null, unique, primary key), create database, use database, show databases, drop database, show tables, create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table,



Topics

REVISION & HALF YEARLY EXAMINATION

Topics

Database Management (Continued.....)

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 natural join

Topics

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 Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET)

Data communication terminologies: concept of communication, components of data communication (sender, receiver, message, communication media, protocols), measuring capacity of communication media (bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching)



DELHI PUBLIC SCHOOL

SUBJECT – COMPUTER
SCIENCE

CLASS - XII

Month- November

Working Days-13

Topics

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

PRE-BOARD- I

Month-December

Working Days-22

Topics

PRE- BOARD- II

**CLASS - XII****Month- April****Working Days-16**

Topics

Revision of Class XI: Programming Concept, List, Dictionary, NumPy

Month- May**Working Days-7+5=12**

Topics

UNIT – I: Data Handling with Pandas (DH1)

Series : Creation of Series from–ND-Array, Dictionary, Scalar value; Mathematical operations; Head and Tail functions; Selection, Indexing, and Slicing.

Month-June**Working Days-16**

Topics

Data Frames: Creation from–Dictionary of Series, List of Dictionaries, Text/CSV files; Display; Iteration; Operations on rows and columns: Add, Select, Delete, Rename; Head and Tail functions; Indexing using Labels, Boolean Indexing;

Month-July**Working Days-22**

Topics

Data Visualization:

Purpose of plotting; Drawing and saving the following types of plots using Matplotlib – Line plot, Bar graph, Histogram
Customizing plots: Adding Label, Title, and Legending plots.

FileHandling: Importing/Exporting Data between CSV files and Data Frames.



Topics

Unit 2: Data base Query using SQL

Revision of SQL of class XI: Uses of Create, Constraint, Select, Where, Like, In, Between, Is, Not,

SQL Queries: Select, Update, Alter, etc.

Math functions: POWER(), ROUND(), MOD().

Text functions: UCASE()/UPPER(), LCASE()/LOWER(), MID(), SUBSTRING()/SUBSTR(), LENGTH(), LEFT(), RIGHT(), INSTR(), LTRIM(), RTRIM(), TRIM().

Date Functions: NOW(), DATE(), MONTH(), MONTHNAME(), YEAR(), DAY(), DAYNAME()

Aggregate Functions:

MAX(), MIN(), AVG(), SUM(), COUNT(); using COUNT(*).

Querying and manipulating data using Group By, Having, Order By.

Working with two tables using Equi-Join.

Topics

Unit 3: Introduction to Computer Networks

Introduction to networks, Types of networks: LAN, MAN, WAN.

Network Devices: modem, hub, switch, repeater, router,

gateway Network Topologies: Star, Bus, Tree, Mesh.

Introduction to Internet: URL, WWW, and its applications- Web, email, Chat, VoIP.

Website: Introduction, Difference between a website and webpage, Static v/s dynamic web page, web server and hosting of a website.

Web Browsers: Introduction, Common browsers, Browser settings, Add-ons and Plug-ins, Cookies.



Topics

Unit 4: Societal Impacts

Digital footprint, Net and communication, Etiquettes, Data protection, Intellectual property rights (IPR), Plagiarism, Licensing and copyright, Free and open-source software (FOSS), Cybercrime and Cyber laws, Hacking, Phishing, Cyber-bullying, Overview of Indian IT Act.

E-waste: Hazards and Management.

Awareness about the health concerns related to the usage of technology.

Topics

Project Work:

The class project aims to create tangible and use full applications. The learner may identify a real-world problem by exploring the environment.

Topics

Project Execution/Case Studies:

Students may visit shops/business places, communities, or other organizations in their localities and enquire about the functioning of the organization, and how data are generated, stored, and managed.



DELHI PUBLIC SCHOOL

SUBJECT-I.P.

CLASS - XII

Month- January

Working Days-17

Topics

PB Exam

Month- February

Working Days-21

Topics

Exams

Month- March

Working Days-23

Topics

Exams



Topics

Unit 1: Accounting for Partnership Firms**Chapter 1 – Accounting for Partnership Firms – Fundamentals**

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).

Chapter 2 – Goodwill: Nature and Valuation

Goodwill: meaning, nature, factors affecting and methods of valuation – average profit, super profit and capitalization.

Topics

Unit 2: Accounting for Partnership firms – Reconstitution and Dissolution**Chapter 3 – Change in 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.



Topics

QUALIFYING EXAMINATION**Chapter 4 – 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.

Chapter 5 – Retirement 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 res

Topics

Chapter 5 – Retirement of a Partner.....Continued

Adjustment of capital accounts and preparation of capital, current account and balance sheet. Preparation of loan account of the retiring partner.

Chapter 6 – Death of a 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.

Chapter 7 – 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)).



Topics

Note: (i) If the realized value of tangible assets is not given it should be considered as realized at book value itself. (ii) If the realized value of intangible assets is not given it should be considered as nil (zero value). (ii) In case, the realization expenses are borne by a partner, clear indication should be given regarding the payment thereof.

Topics

Unit-3 Accounting for Companies**Chapter 8 – 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. 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.



Topics

HALF YEARLY EXAMINATION**Chapter 9 – 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.

Note: Discount or loss on issue of debentures to be written off in the year debentures are allotted from Security Premium Reserve (if it exists) and then from Statement of Profit and Loss as Financial Cost (AS 16)

Topics

Part B: Financial Statement Analysis**Unit 4: Analysis of Financial Statements****Chapter 10 – 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)

Chapter 11 – Financial Statement Analysis

Meaning, Significance Objectives, importance and limitations.

Chapter 12 – Tools for Financial Statement Analysis

Comparative statements, common size statements, Ratio analysis, Cash flow analysis.

**Chapter 12 – 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.

Month–November**Working Days–13****Topics****Unit 5: Cash Flow Statement**

Meaning, objectives Benefits, Cash and Cash Equivalents, Classification of Activities and preparation (as per AS 3 (Revised) (Indirect Method only) Note: (i) Adjustments relating to depreciation and amortization, profit or loss on sale of assets including investments, dividend (both final and interim) and tax. (ii) Bank overdraft and cash credit to be treated as short term borrowings. (iii) Current Investments to be taken as Marketable securities unless otherwise specified.

PRE–BOARD I EXAMINATIONS**Month–December****Working Days–22****Topics**

Revision &

PRE–BOARD II EXAMINATIONS**Month–January****Working Days–17****Topics****BOARD PRACTICAL EXAMINATIONS**



Topics

PART – A : Principles and Functions of Management**Unit – 1: Nature and Significance of Management**

Management – Concept, objectives, and importance.
Management as Science, Art, and Profession. Levels of Management, Management Functions – Planning, Organising, Staffing, Directing and Controlling. Coordination – concept and importance and characteristics of coordination.

Unit 2: Principles of Management

Principles of Management – concept and significance;
Fayol's principles of management;
Taylor's Scientific management – principles and techniques;

Topics

Unit 3: Business Environment

Business Environment – concept and importance;
Dimensions of Business Environment – Economic, Social, Technological, Political, and Legal;
Demonetization – concept and features;

Topics

QUALIFYING EXAMINATION**Unit 4: Planning**

Planning: Concept, importance, and limitation;
Planning process; Single use and Standing Plans. Objectives;
Strategy, Policy, Procedure, Method, Rule;
Budget and Programme;

Unit 5: Organising : Concept and importance;

Organising Process;
Structure of organisation – functional and divisional concept;



Topics

Formal and informal organization–concept, advantages and disadvantages;
Delegation: concept, elements and importance;
Decentralization: concept and importance; Difference between Delegation and Decentralisation;

Unit 6: Staffing

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 - vestibule training, apprenticeship training and internship training;

Topics

Unit 7: Directing

Directing: Concept and importance;
Elements of Directing
Motivation–concept, Maslow's hierarchy of needs, Financial and non-financial incentives;
Leadership–concept, styles–authoritative, democratic, laissez-faire;
Communication–concept, formal and informal communication; barriers to effective communication, how to overcome the barriers?

Unit 8: Controlling

Controlling – Concept and importance
Relationship between planning and controlling; Steps in process of control



Topics

Part B: Business Finance and Marketing**Unit 11: Marketing**

Marketing – Concept, features of marketing, marketing functions, and philosophies;

Marketing Mix – Concept and elements;

REVISION & HALF YEARLY EXAMINATION

Topics

Product-concept, branding, labelling, and packaging;

Price-Concept, Factors determining price; Physical Distribution – concept, components, and channels of distribution;

Promotion – Concept and elements;

Advertising, Personal Selling, Sales Promotion, and Public Relations;

Unit 9: Financial Management

Financial Management: Concept, role and objectives;

Financial Decisions: investment, financing and dividend-meaning and factors affecting financial decisions;

Financial Planning – concept and importance;

Capital Structure-concept and factors affecting capital structure Fixed and Working Capital – Concept and factors affecting their requirements;

POOJA VACANTION PROJECT AND ASSIGNMENT

Topics

Unit 10: Financial Markets

Financial Markets: Concept;

Money Market: Concept;

Capital Market and its types (primary and secondary);

Stock Exchange – Functions and trading procedure;

Securities and Exchange Board of India (SEBI) – objectives and functions;

**CLASS - XII****Month–November****Working Days–13**

Topics

Unit 12: Consumer Protection

Consumer Protection: Concept and importance;

The Consumer Protection Act, 2019:

Meaning of consumer

Rights and responsibilities of consumers. Who can file a complaint?

Redressal Machinery and Remedies available

Consumer awareness – Role of consumer organizations and Non-Governmental Organizations (NGOs).

REVISION & PREBOARD EXAMINATION –I

Month–December**Working Days–22**

Topics

Unit:13 Project Work**REVISION & PRE-BOARD II EXAMINATIONS**

Month–January**Working Days–17**

Topics

BOARD PRACTICAL EXAMINATIONS

**CLASS - XII****Month–April****Working Days–21**

Topics

MACRO

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 & 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 & 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

Month–May**Working Days–7+5=12**

Topics

INDIAN ECONOMICS**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

QUALIFYING EXAM

Month–June**Working Days–16**

Topics

MACRO**UNIT-2: Money and banking: Meaning and Supply of money**

Topic : Commercial bank and Credit creation

**CLASS - XII****Month–July****Working Days–22****Topics****MACRO**

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

Month–August**Working Days–22****Topics****INDIAN ECONOMICS**

Topic : Economic reform since 1991:- Need for reform, Liberalisation measures, Privatisation measures, Globalization, 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**MACRO : INCOME DETERMINATION** CONTEDED... : Multiplier, working of multiplier, Inflationary and deflationary gap, measures to control it**INDIAN ECONOMICS****RURAL DEVELOPMENT** : key Issues, Rural credit, Agriculture marketing, Agriculture diversification, Organic farming**Employment** : Types of employment, formal and informal, casualisation and in formalisation of workforce, recent trends of unemployment, problem and policy measures. HALF YEARLY EXAM**Month–September****Working Days–23****Topics****GOVERNMENT BUDGET AND THE ECONOMY** : Meaning and objectives, Component of revenue and capital budget,

**CLASS - XII****Month–October****Working Days–18**

Topics

MACROECONOMICS

Exchange rate Systems : Fixed, Flexible and Managed floating rate system, functions of exchange market, balance of payment : components, sides and items in BOP.

Month–November**Working Days–13**

Topics

INDIAN ECONOMICS : ENVIRONMENT AND SUSTAINABLE **DEVELOPMENT** : MEANING, resources, effects and measures
INDIA, PAKISTAN, & CHINA : Issues growth, population, sectoral development, other development indicators

Pre–Board 1**Month–December****Working Days–22**

Topics

Pre–Board 2

Month–January**Working Days–17**

Topics

**Topics**

- Bricks, Beads and Bones
- The Indus valley civilization–The urban planning–sources–Seals Script–The mystery of the sudden ending of the civilisation
- Kings, Farmers and Towns–The political, economic History of the Indian subcontinent of 6th century BCE to 6th century CE
- Kinship, Caste and Class– Social History of the Indian subcontinent –Based on the Mahabharaya and other written material of the time period

Topics

- Thinkers, Beliefs and Buildings– The cultural changes in the Indian subcontinent during the period of time of 6th Century BCE to 6th century CE–Budhism, Jainism and puranic Hinduism
- Through the Eyes of Travellers –Sources through the writing of Travellers from outside the subcontinent– during various time period AlBiruni, Ibn Batuta François bernier and others

Topics**Qualifying Examination**

- Bhakti Sufi traditions–The cultural traditions leading to the leading of the amalgamation of cultures and faith

**CLASS - XII****Month–July****Working Days–22****Topics**

- An Imperial Capital: Vijayanagara–The architectural remains of vijayanagara Empire along with the written sources
- 1. Peasants, Zamindars and the State–The life of Mughal rural India

Month–August**Working Days–22****Topics**

- 9. Colonialism and the Countryside–Different Revenue systems under the British East Indian Company in various areas of the subcontinent and resistance against it
- 10. Rebels and the Raj The revolt of 1857 causes, course and effects in the history of India

Month–September**Working Days–23****Topics**

Revision and Half yearly

Month–October**Working Days–18****Topics**

- Mahatma Gandhi and the Nationalist Movement– The struggle for freedom from the British Empire led by Mahatma Gandhi in British India 1915–1947

**CLASS - XII****Month–November****Working Days–13****Topics**

- Framing the Constitution–Major challenges–Debates–important individuals in the making of the constitution

Month–December**Working Days–22****Topics**

- Revision & Preboard I

Month–January**Working Days–17****Topics**

- Revision & Preboard II

Month–February**Working Days–21****Topics**

- Revision Boards 2026–2027



<u>UNIT</u>	<u>MARKS</u>
PART-A : CONTEMPORARY WORLD POLITICS	
1. Cold War Era	6
2. The End of Bipolarity	6
3. Contemporary centers of power	6
4. Contemporary South Asia	6
5. International organization	6
6. Security in the Contemporary World	6
7. Environment and Natural Resources	6
8. Globalization	4
TOTAL	40
PART-B : POLITICS IN INDIA SINCE INDEPENDENCE	
9. Challenge of Nation Building	6
10. Era of One Party Domination	4
11. Politics of Planned Development	2
12. India's External Relations	6
13. Challenges to Congress System	4
14. Crisis of the Democratic Order	4
15. Regional aspirations	6
16. Recent Developments in Indian Politics	8
TOTAL	40

Month-April	Working Days-21
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Topics

• **Cold War Era**

Emergence of two power blocs after the second world war. Arenas of the cold war. Challenges to Bipolarity: Non Aligned Movement, quest for new international economic order. India and the cold war.

• **Challenges of Nation-Building**

Nehru's approach to nation-building; Legacy of partition: challenge of 'refugee' resettlement, the Kashmir problem.

Era of One-Party Dominance

First three general elections, nature of Congress dominance at the national level, uneven dominance at the state level, coalitional nature of Congress. Major opposition parties

**CLASS - XII****Month – May****Working Days – 7+5=12****Topics****• India's External Relations**

Nehru's foreign policy. Sino-Indian war of 1962, Indo-Pak war of 1965 and 1971. India's nuclear programs. Shifting alliance in world politics.

Month – June**Working Days – 16****Topics****• 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.

SPE – Scholastic Proficiency Examination**• 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.

SPE – Scholastic Proficiency Examination**Politics of Planned Development**

Five year plans, expansion of state sector and the rise of new economic interests. Famine and suspension of five year plans. Green Revolution and its political fallouts.

Discussion about Project work and synopsis making**Month – July****Working Days – 22****Topics****• Challenges to & Restoration of Congress System**

Political succession after Nehru. Non-Congressism and electoral upset of 1967, Congress split and reconstitution, Congress' victory in 1971 elections, politics of 'garibi hatao'

**• Alternative Centers of Power**

Rise of China as an economic power in post-Mao era, creation and expansion of European Union, ASEAN. India's changing relations with China.

Month–August**Working Days–22****Topics****• Contemporary South Asia in the Post–Cold War Era**

Democratization in Pakistan and Nepal. Ethnic conflict in Sri Lanka, Impact of economic globalization on the region. Conflicts and efforts for peace in South Asia. India's relation with its neighbors

Crisis of the Democratic Order

Search for 'committed' bureaucracy and judiciary. Navnirman movement in Gujarat and the Bihar movement. Emergency: context, constitutional and extra-constitutional dimensions, resistance to emergency. 1977 elections and the formation of Janata Party. Rise of civil liberties organizations.

Month–September**Working Days–23****Topics****• Rise of Popular Movements in India**

Farmers' movements, Women's movement, Environment and Development-affected people's movements. Implementation of Mandal Commission report and its aftermath.

International Organizations

Restructuring and the future of the UN. India's position in the restructured UN. Rise of new international actors: new international economic organizations, NGOs. How democratic and accountable are the new institutions of global governance?



Topics

• Security in Contemporary World

Traditional concerns of security and politics of disarmament. Non-traditional or human security: global poverty, health and education. Issues of human rights and migration.

Regional Aspirations

Rise of regional parties. Punjab crisis and the anti-Sikh riots of 1984. The Kashmir situation. Challenges and responses in the North East.

Globalization

Economic, cultural and political manifestations. Debates on the nature of consequences of globalization. Anti-globalization movements. India as an arena of globalization and struggle against it.

Topics

• Recent Developments in Indian Politics

Participatory upsurge in 1990s. rise of the JD and the BJP. Increasing role of regional parties and coalition politics. Coalition governments:
NDA (1998–2004)
UPA (2004–2014)
NDA (2014 onwards)

Environment and Natural Resources

Environment movement and evolution of global environmental norms. Conflicts over traditional and common property resources. Rights of indigenous people. India's stand in global environmental debates.



DELHI PUBLIC SCHOOL

SUBJECT – POL. SCIENCE

CLASS – XII

Month–December

Working Days–22

Topics

- **Pre Board**

Month–January

Working Days–17

Topics

- **Pre Board**

- **B. Project Work: 20 Marks**

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



Topics

1. Introducing Indian Society (Non evaluative)

- Colonialism
- Nationalism
- Class and Community

2. Demographic Structure and Indian Society

- Theories and conception demography
- Rural – Urban Linkages and divisions

3. Social institutions : Continuity and change

- Family and kinship
- The Caste System
- Tribal Society

Topics

5. Pattern of Social Inequality and Exclusion

- Caste, Prejudice, Scheduled castes and other Backward Classes
- Marginalisation of Tribal Communities
- The struggle for women's equality
- The struggle of the Differently Abled.

Topics

6. Challenges of Cultural Diversity

- 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)

**CLASS - XII****Month–July****Working Days–22**

Topics

Changes and Development in Indian Society**8. Structural Change**

- Colonialism
- Industrialisation
- Urbanisation

9. Cultural Change

- Modernisation
- Westernisation
- Sanskritisation
- Secularisation
- Social Reform Movements and Laws

Month–August**Working Days–22**

Topics

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

Month–September**Working Days–23**

Topics

12. Changes and Development in Industrial Society

- From planned Industrialization to Liberalization.
- Getting a job
- Work Processes



Topics

15. Social Movements

- 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

Topics

Revision/Pre-Board- 1



Topics

B1 Human Geography: Nature and Scope

- Nature of Human Geography
- Fields and Sub-fields of Human Geography

B1 The World Population: Distribution, Density and Growth

- Patterns of population distribution in the world
- Density of population
- Factors influencing the distribution of population
- Population growth
- Demographic transition
- Population control measures

B2 Population: Distribution, Density, Growth and Composition

- Distribution of population
- Density of population
- Growth of population
- Regional variation population growth
- Population composition

B2 Human Settlements

- Types of rural settlement
- Urban settlements
- Urbanisation in India

B3 Data – Its Source and Compilation

- 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



Topics

B2 Land Resources and Agriculture

- 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
- Other crops
- Agricultural development in India
- Problems of Indian agriculture

B1 Human Development

- Growth and development
- The four pillars of human development
- Approaches to human development
- Measuring human development
- International comparisons

Topics

Scholastic Proficiency Examination**B2 Water Resources**

- Water resources of India
- Deterioration of water quality
- Watershed management
- Rainwater harvesting



Topics

B1 Primary Activities

- Hunting and gathering
- Pastoralism
- Agriculture
- Mining

B1 Secondary Activities

- Manufacturing
- Classification of manufacturing industries
- Concept of high technology industry

B2 Mineral and Energy Resources

- Types of mineral resources
- Distribution of minerals in India
- Ferrous minerals
- Non-ferrous minerals
- Non-metallic minerals
- Energy resources
- Conservation of Mineral resources

B3 Data Processing

- Measures of central tendency
- Comparison of Mean, Median and Mode

Topics

B1 Tertiary and Quaternary Activities

- Types of tertiary activities
- People engaged in tertiary activities
- Some selected examples
- Quaternary activities
- Quinary activities
- The digital divide

B2 Planning and Sustainable Development in Indian Context

- Target Area Planning
- Hill Area Development Programme
- Drought Prone Area Programme
- Sustainable Development



Topics

- **B2 Transport and Communication**
- Land transport
- Water transport
- Air transportation
- Oil and gas pipelines
- Communication networks
- **B3 Graphical Representation of Data**
- Representation of data
- General rules for drawing graphs, diagrams and maps
- Construction of diagrams
- Classification of thematic maps based on method of construction

Topics

- Revision & Half Yearly Examination**
- B1 Transport and Communication**
- Transport
 - Modes of transportation
 - Communications

Topics

- B1 International trade**
- History of international trade
 - Gateways of international trade
- B3 Spatial Information Technology**
- What is Spatial Information Technology
 - What is GIS
 - Advantages of GIS over manual methods
 - Components of GIS
 - Spatial data formats
 - Sequence of GIS activities



Topics

B2 International trade

- 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

B2 Geographical Perspective on Selected Issues and Problems

- Environmental pollution
- Urban waste disposal
- Rural-urban migration
- Problems of slums
- Land degradation

**Revision &
Pre Board– I**

Topics

Pre Board – I

Pre Board – II &

Revision

B1 – Fundamentals of Human Geography – NCERT

B2 – India – People and Economy – NCERT

B3 – Practical Work in Geography Part II – NCERT



Topics

Variations in Psychological Attributes

The topics in this unit are:

- Introduction
- Individual Differences in Human Functioning
- Assessment of Psychological Attributes
- Intelligence
- Psychometric Theories of Intelligence, Information Processing Theory: Planning, Attention-arousal and Simultaneous successive Model of Intelligence, Triarchic Theory of Intelligence; Theory of Multiple Intelligences.
- Individual Differences in Intelligence
- Culture and Intelligence
- Emotional Intelligence
- Special Abilities: Aptitude: Nature and Measurement
- Creativity

Practical 1- Ravens' standard progressive matrices / emotional stability test

Topics

Meeting Life Challenges

The topics in this unit are:

- Introduction
- Nature, Types and Sources of Stress
- Effects of Stress on Psychological Functioning and Health
 - Stress and Health
 - General Adaptation Syndrome



CLASS - XII

Month-May

Working Days-7+5=12

Topics

- Stress and Immune System
- Lifestyle
- Coping with Stress
 - Stress Management Techniques
- Promoting Positive Health and Well-being
 - Life Skills
 - Positive Health

Practical 3- Comprehensive anxiety scale

Month-June

Working Days-16

Topics

**Qualifying Examination
Self and Personality (Cont.)**

- Introduction
- Self and Personality
- Concept of Self
- Cognitive and Behavioural aspects of Self
- Culture and Self
- Concept of Personality
- Major Approaches to the Study of Personality
 - Type Approaches
 - Trait Approaches
 - Psychodynamic Approach and Post Freudian Approaches
 - Behavioural Approach
 - Cultural Approach
 - Humanistic Approach
- Assessment of Personality
 - Self-report Measures
 - Projective Techniques
 - Behavioural Analysis

Practical 2- Maudsley Personality inventory (MPI)



Topics

Psychological Disorders

The topics in this unit are:

- Introduction
- Concepts of Abnormality and Psychological Disorders
 - Historical Background
- Classification of Psychological Disorders
- Factors Underlying Abnormal Behaviour
- Major Psychological Disorders
- 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
 - Neurodevelopmental Disorders
 - Disruptive, Impulse-Control and Conduct Disorders
 - Feeding and Eating Disorders
 - Substance Related and Addictive Disorders

Practical 4 – SCAT

Topics

Therapeutic Approaches

The topics in this unit are:

- Nature and Process of psychotherapy
 - Therapeutic relationship
- Types of Therapies
 - Behaviour Therapy

**CLASS - XII****Month-August****Working Days-22**

Topics

- Cognitive Therapy
- Humanistic-Existential Therapy
- Alternative Therapies
- Factors contributing to healing in Psychotherapy
- Ethics in Psychotherapy
- Rehabilitation of the Mentally Ill

Attitude and Social Cognition

The topics in this unit are:

- Introduction
- Explaining Social Behaviour
- Nature and Components of Attitudes
- Attitude Formation and Change
 - Attitude Formation
 - Attitude Change
 - Attitude-Behaviour Relationship
- Prejudice and Discrimination
 - Strategies for Handling Prejudice

Month-September**Working Days-23**

Topics

HALF YEARLY EXAMINATION

**CLASS - XII****Month-October****Working Days-18**

Topics

Social Influence and Group Processes

The topics in this unit are:

- Introduction
- Nature and Formation of Groups
- Type of Groups
- Influence of Group on Individual Behaviour
 - Social Loafing
 - Group Polarisation

Practical 5- AISS

Month-November**Working Days-13**

Topics

Case Study on one psychological disorder.

Revision

Month-December**Working Days-22**

Topics

Revision

Pre boards-I

Month-January**Working Days-17**

Topics

Revision & Pre Board II

Psychology CBSE Practicals exam

Month-February**Working Days-21**

Topics

Revision

**Practical****30Marks**

- A. Development of case profile:
Using appropriate methods like interview, observation & psychological tests.
- B. Test administration:
Students are required to administer and interpret five psychological tests related to various psychological attributes like intelligence, aptitude, attitude, personality, etc.
- C. In the Practical examination, the student will be required to administer and interpret two psychological tests.

Distribution of Marks:

Practical File and Case Profile	10 Marks
Viva Voce (Case Profile & Two psychological tests)	05 Marks
Two tests (5 marks for conducting the tests and 10 marks for reporting)	15 Marks
Total-	30 Marks



Topics

Unit – 1: MANAGEMENT OF SPORTING EVENT

1. Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling)
2. Various Committees & their Responsibilities (pre; during & post)
3. Fixtures and their Procedures – Knock-Out (Bye & Seeding) & League (Staircase, Cyclic, Tabular method) and Combination tournaments.
4. Intramural & Extramural tournaments – Meaning, Objectives & Its Significance
5. Community sports program (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity)

Unit – 2: CHILDREN AND WOMEN IN SPORTS

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).



Topics

Unit - 5 : SPORTS AND NUTRITION

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

Unit - 6 : TEST AND MEASUREMENT IN SPORTS

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, Push Ups for boys, Modified Push-Ups for girls)

2. Measurement of Cardio Vascular Fitness-Harvard Step Test – Duration of the Exercise in Seconds $\times 100 / 5.5 \times$ Pulse count of 1-1.5 Min after Exercise.
3. Computing Basal Metabolic Rate (BMR)
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, Jumping Half-Turn, Jumping full turn).



Topics

BIOMECHANICS AND SPORTS

1. Newton's Law of Motion & its application in sports
2. Types of Levers and their application in Sports.
3. Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports
4. Friction & Sports
5. Projectile in Sports

Unit - 3 : YOGA AS PREVENTIVE MEASURE FOR LIFESTYLE DISEASE

1. Obesity: Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayanasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama.
2. Diabetes: Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana, Bhujang asana, Shalabhasana, Dhanurasana, Suptavajarasana, Paschimottanasana, Ardha-Mastendrasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalabhati.
3. Asthma: Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, Uttan Mandukasan - a, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalabhati, Gomukhasana Matsyaasana, Anuloma - Viloma.
4. Hypertension: Procedure, Benefits & Contraindications for Tadasana, Katichakransan, Uttanpadasana, ArdhaHalasana, Sarala Matyasana, Gomukhasana, Uttan Mandukasan-a, Vakrasana, Bhujangasana, Makarasana, Shavasana, Nadishodhanapranayam, Sitlipranayam.
5. Back Pain and Arthritis: Procedure, Benefits & Contraindications of Tadasana, Urdhawahastootansana, Ardh-Chakrasana, Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujandgasana, Gomukhasana, Bhadrasana, Makarasana, Nadi Shodhana pranayama.



Topics

**Unit - 4 : PHYSICAL EDUCATION AND SPORTS FOR CWSN
(CHILDREN WITH SPECIAL NEEDS)**

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.

Topics

Unit - 7 : PHYSIOLOGY AND INJURIES IN SPORTS

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)



Topics

Unit – 9 : PSYCHOLOGY AND SPORTS

1. Personality; its definition & types (Jung Classification & Big Five Theory)
2. Motivation, its type & techniques.
3. Exercise Adherence: Reasons, Benefits & Strategies for Enhancing it
4. Meaning, Concept & Types of Aggressions in Sports
5. Psychological Attributes in Sports – Self-Esteem, Mental Imagery, Self Talk, Goal Setting

Topics

Unit – 10 : TRAINING IN SPORTS

1. Concept of Talent Identification and Talent Development in Sports
 2. Introduction to Sports Training Cycle – Micro, Meso, Macro Cycle.
 3. Types & Methods to Develop – Strength, Endurance, and Speed.
 4. Types & Methods to Develop – Flexibility and Coordinative Ability.
 5. Circuit Training – Introduction & its importance
-



Topics

THEORY:**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

PRACTICAL:

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....



Topics

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.

Topics

THEORY:**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



Topics

PRACTICAL:

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.

Topics

THEORY:**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.



Topics

PRACTICAL:

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;

Topics

THEORY:**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.



Topics

PRACTICAL:

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.;

Topics

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 Nandlal Bose,
 - (c) Radhika by M.A.R. Chughtai,
 - (d) Meghdoot by Ram Gopal Vijaivargiya

PRACTICAL :

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.



Topics

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

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.

Topics

THEORY:**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



Topics

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.

Topics

THEORY:

Revision of Theory and Previous Question Papers.

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).

Topics

THEORY :

Revision work and Theory Question Papers

PRACTICAL :

Practical Exams, Submission of Portfolio with selected 10 best prints, 2 Practical Project Reports (Digital copies).



Topics

Materials Required for Practical

Silk screens of 12x15 or 15x20 inches (Approx), MDF Board (8x10 inches), 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 / 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.

Please submit Theory Assignment and Practical Progress Report**Practical Exam**

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.



Topics

THEORY:

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.

PRACTICAL:

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.



Topics

THEORY:**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

PRACTICAL:

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.

Topics

THEORY:**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,



Topics

- (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.

PRACTICAL:

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.

Topics

THEORY:**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 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.



Topics

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.

Topics

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 Nandlal Bose,
 - (c) Radhika by M.A.R. Chughtai,
 - (d) Meghdoot by Ram Gopal Vijaivargiya

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.



Topics

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

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.

Topics

THEORY:

**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

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).



Topics

THEORY:

Revision of Theory and Previous Question Papers.

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.

Topics

THEORY:

Revision work and Theory Question Papers

PRACTICAL:

Practical Exams, Submission of complete Portfolio with selected 20 works, 2 Practical Project Reports(Digital copies).



Topics

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**

Practical Topics (Paper-I)- Pencil shading- Still life study, Nature study, Foliage study, Object study.(Drawing, composition, treatment of media/colour,overall impression.)

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.)

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)

**CLASS - XII****Month-April****Working Days-21**

Topics

Practical

Raag Bhairav (Drut khyal)

Taan of Raag Bhairav Vilambit khyal in Raga Bhairav (Astayi)

Theory

Brief study of the following:-Alankar. Alap, Tana, Meend, Gamak

Historical development of Time Theory of Ragas

Month-May**Working Days-7+5=12**

Topics

Practical

Vilambit khyal in Raag Bhairav (Antara)

Theory

Description of prescribed talas along with tala notation with tah, dugun and chaugun -Jhaptala, Rupak

Month-June**Working Days-16**

Topics

Practical

Raag Bageshri (Drut khyal)

Theory

Critical study and writing notation of Raga Bageshri

Description of Dhamar talawith tala notation



CLASS - XII

Month-July

Working Days-22

Topics

Practical

Taan of Raag Bageshri Taan in Vilambit khyal

Theory

Details study of Sangeet Ratnakar

Month-August

Working Days-22

Topics

Practical

Raag Malkouns (Drut khyal)

Theory

Brief study of the following:-Gram,Murchhana,Kan,Khatka,
Murki

Month-September

Working Days-23

Topics

Practical

Taan in Raga Malkouns Tarana in Raga Malkouns

Theory

Details study of Sangeet Parijat Knowledge of tuning of the
Tanpura

Month-October

Working Days-18

Topics

Practical

Dhamar in Raag Malkouns (asthai)

Theory

Life sketch and contribution to music of - Faiyaz kha, Bade
Gulam Ali Kha, Krishna Rao Shankar Pandit

**CLASS - XII****Month-November****Working Days-13****Topics****Practical**

Dhamar in Raag Malkouns (antara)

Theory

Description of Dhamar Tala with Tala notation.

Month-December**Working Days-22****Topics****Practical**

Revision & pre board exam

Theory

Revision & pre board exam

Month-January**Working Days-17****Topics****Practical**

Pre board exam-2

Theory

Pre board exam-2

Month-February**Working Days-21****Topics****Practical**

Practical exams

Theory

Practical exams

**CLASS - XII****Month-April****Working Days-21****Topics**

Learning and practice of one Pallavi. Recitation of the Ukutas of the item with hands. Definition of the term Pallavi and Demonstration of the item.

Elementary knowledge about the three styles of chhau : Mayurbhanj, Seraikella and Purulla.

Month-May**Working Days-7+5=12****Topics**

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.

Month-June**Working Days-16****Topics**

(a) Elementary introduction to the texts: 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.

**CLASS - XII****Month-July****Working Days-22****Topics**

- (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.

Month-August**Working Days-22****Topics**

Practice of patak hasta mudra viniyogacc 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.

Month-September**Working Days-23****Topics**

Ability to demonstrate the following Bhangis: Samabhang, Abhang, Tribhaanga, Alasaa, Darpani, Abhimama, Mardala, ParshvaMardala, 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 paadbhedas and bharis. Definition and short explanation of nineRasa. And folk dance of Odisha.

**CLASS - XII****Month-October****Working Days-18****Topics**

Revision of the Pallavi.
Revision of Patak Hasta Mudra Viniyog.
Identification of the Raga, Taal and Choreographer of the Pallavi.
Identification of the Hastas and the Bhangis used in the Items.
Oriya song: (a) Demonstration of the item (b) Name of the poet
(c) Naming of the Raga and Taal of the item (d) Meaning of the verses used (e) Identification of the hastas used.

Month-November**Working Days-13****Topics**

Revision work and Theory exams.
Revision of Bhangis.

Month-December**Working Days-22****Topics**

Revision & Pre-Board Exam

Month-January**Working Days-22****Topics**

Pre-Board II

Month-February**Working Days-21****Topics**

Practical Exams. Submission of Practical Project.

Month-March**Working Days-23****Topics**

Annual Exam Term – II CBSE