

SYLLABUS - 2023- 2024

Class - XII

Sub - English

Books Prescribed :

1. Flamingo (FL)
2. Vistas (VS)

Months	No. of Working Days	Topics
March	8	FL - My Mother at Sixty Six (Poem) The Last Lesson AWS - Notice Writing Letter to the Editor
April	19	FL - Lost Spring Deep Water An Elementary School Classroom In A Slum (Poem) VS - The Third Level AWS - Article Writing Note Making With Summary
May	15	AWS - Advertisements (Display & Classified) Report Writing Letter of Enquiry & Reply VS - The Tiger King
June	14	FL - Keeping Quiet (Poem) VS - Journey To The End of the Earth AWS - Job Application

Months	No. of Working Days	Topics
July	22	FL - The Rattrap Indigo A Thing of Beauty (Poem) VS - The Enemy AWS - Poster Speech Writing
August	22	FL - Poets and Pancakes VS - Should Wizard Hit Mommy ? On The Face of It AWS - Letter of Complaint Placing Order & Cancellation
Sept	21	ASL REVISION FOR HALF YEARLY FL - The Interview AWS - Invitations & Replies (Formal & Informal)
Oct	18	FL - A Roadside Stand (Poem) Going Places VS - Evans Tries An O Level AWS - Letter To School Authorities
Nov	16	FL - Aunt Jennifer's Tigers (Poem) VS - Memories of Childhood AWS - Debate Writing
Dec	24	PROJECT & VIVA Revision

Subject - Mathematics (Code - 041)

Months	No. of Working Days	Portion
March	12	<p>Linear Programming Problems(LPP): Introduction, Related terminology such as Constraints, Objective function, Optimization, Different types of Linear Programming Problems, Mathematical formulation of LPP, Graphical method of solution for problems in two variables, Feasible and infeasible regions (bounded and unbounded), Feasible and infeasible solutions, Optimal feasible solutions(up to three nontrivial constraints) .</p> <p>Vectors:</p> <p>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.</p>
April	19	<p>Vectors (Continued...): Definition and geometrical interpretation, properties, and application of scalar product of vectors, Definition and geometrical interpretation, properties and application of vector product of vectors, [Scalar triple product, their geometrical interpretation, properties and applications.]*</p>

Months	No. of Working Days	Portion
		<p>Activity No. 13</p> <p>Three-Dimensional Geometry:</p> <p>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. [Cartesian equation and vector equation of a plane, distance of a point from a plane. Angle between two lines, two planes and line with plane.]*</p> <p>Probability:</p> <p>Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean, [variance and standard deviation of random variable, repeated independent (Bernoulli) trials and Binomial distribution.]*</p> <p>Activity No. 14</p> <p>Relations:</p> <p>Types of relations, reflexive, symmetric transitive and equivalence relations,</p> <p>Activity No. 1</p> <p>Functions:</p> <p>One to one and onto functions, composite functions, inverse of a function, [Binary operations]*</p> <p>Activity No. 3 and 4</p>

Months	No. of Working Days	Portion
May	15	<p>Inverse trigonometric functions: Definition, range, domain, principal value branch. Graphs of Inverse trigonometric functions, [elementary properties of Inverse trigonometric functions.]*</p> <p>Activity No. 2</p> <p>Matrices:</p> <p>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 and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). [Concept of elementary row and column operations.]* Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).</p> <p>Activity No. 5</p> <p>Determinants:</p> <p>Determinant of a square matrix (up to 3×3 matrices), [properties of determinants]* minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square</p>

Months	No. of Working Days	Portion
		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.
June	14	<p>Pre-Mid Term Examination</p> <p>Continuity and Differentiability: Continuity and differentiability, derivative of composite functions. chain rule. derivatives of inverse trigonometric function, derivative of implicit functions.</p>
July	22	<p>Differentiation (Continued...) Concept of exponential and logarithmic functions, Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of Functions expressed in parametric forms. Second order derivatives [Role's and Lagrange's Mean Value Theorems and their geometric interpretation.]*</p> <p>Activity No. 6,7,8</p> <p>Applications of Derivatives: Rate of change of physical quantities, increasing / decreasing functions, [Tangents and Normal, use of derivatives in approximation,]* maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool) Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).</p> <p>Activity No. 9,10,11, and 15</p>

Months	No. of Working Days	Portion
Aug	22	<p>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 like</p> $\frac{1}{\alpha^2 - x^2}, \frac{1}{x^2 - \alpha^2}, \frac{1}{x^2 + \alpha^2},$ $\frac{1}{\sqrt{\alpha^2 - x^2}}, \frac{1}{\sqrt{x^2 - \alpha^2}}, \frac{1}{\sqrt{x^2 + \alpha^2}}$ $\frac{px+q}{\sqrt{\alpha^2 - x^2}}, \frac{px+q}{\sqrt{x^2 - \alpha^2}}, \frac{px+q}{\sqrt{x^2 + \alpha^2}}$ <p>Integration by partial fractions. Integration by parts, special integrals like</p> $\sqrt{\alpha^2 - x^2}, \sqrt{x^2 + \alpha^2}, [(\alpha x + b)\sqrt{x^2 + \alpha^2}, (\alpha x + b)\sqrt{\alpha^2 - x^2}]^*$ <p>Definite Integration [Definite integrals as a limit of a sum,]* fundamental Theorem of Calculus (without proof).</p>
Sept	21	<p>Definite Integration (Continued...) Basic properties of definite integrals and evaluation of definite integrals Revision Mid Term Examination</p>
Oct	18	<p>Applications of the integrals: Applications in finding the area under simple curves especially lines, circles, parabolas, ellipses (in Standard form only) [Area between any of the two above said curves (the region should be clearly identifiable).]* Activity No. 12</p>

Months	No. of Working Days	Portion
Nov	16	<p>Differential Equations: Definition, Order and degree, general and particular solutions of a differential equation. Formation of differential equation, whose general solution is given. Solution of differential equations by method of separation of variables, solution of homogeneous differential equation, Solution of linear differential equations of first order and first degree. Revision Pre Board Examination - I</p>
Dec	24	<p>Pre Board Examination -I(Continued...) Common Error Discussion Pre Board Examination - II</p>
Jan	16	<p>Pre Board Examination - II</p>

* = Suggested Supplementary reading topics.

Lab Activity in Mathematics:

- 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.
- To draw the graph of $\sin^{-1} x$ using the graph of $\sin x$ and demonstrate the concept of mirror reflection about the line $y=x$.
- To sketch the graph of 2^x and $\log_2 x$ and to examine that they are mirror images of each other.
- To establish a relationship between common logarithm (to the base 10) and natural logarithm (to the base e) of number n .

5. Formation of code through matrix multiplication
6. To verify that for a function f to be continuous at given point x_0 , $\Delta y = |f(x_0 + \Delta x) - f(x_0)|$ is arbitrary small, provided Δx is sufficiently small.
7. To verify Rolle's theorem by taking a suitable case.
8. To verify Lagrange's Mean Value theorem
9. To understand the concept of decreasing and increasing functions.
10. To understand the concepts of local maxima, local minima and point of inflection.
11. To understand the concept of Absolute maxima and absolute minima of a function through its graph in a closed interval.
12. 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.
13. To verify geometrically that $\alpha(\vec{a} + \vec{b}) = \alpha\vec{a} + \alpha\vec{b}$ and $(\alpha + \beta)\vec{a} = \alpha\vec{a} + \beta\vec{a}$.
14. 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.
15. 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.

Maximum Marks :100

Theory: 80 Marks

Practical: 20 Marks (Internal Assessment 10 + Lab Activity 10)

Note :

An activity record copy is to be prepared carrying at least either of eight practicals.

Month	No. of Working Days	Topics to be covered
April	19	<p>Unit I : Electrostatics</p> <p>Ch. 1 : Electric Charges and Fields Electric charges, Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).</p> <p>Chapter-2: Electrostatic Potential and Capacitance Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two-point charges and of electric dipole in an electrostatic field. Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor (no derivation, formulae only).</p>

Month	No. of Working Days	Topics to be covered
May	15	Unit 2 : Current Electricity Ch. 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.
June	14	QUALIFYING EXAMINATION Unit 3 : Magnetic Effects of Current and Magnetism Ch. 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.
July	22	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.

Month	No. of Working Days	Topics to be covered
		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.
		Unit 4: 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.
Aug	22	Ch. 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 5: 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,

Month	No. of Working Days	Topics to be covered
		<p>microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.</p> <p>Unit 6: Optics</p> <p>Chapter–9: Ray Optics and Optical Instruments</p> <p>Ray Optics: Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism.</p> <p>Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers</p>
Sept	21	<p>HALF YEARLY EXAMINATION</p> <p>Chapter–10: Wave Optics</p> <p>Wave optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle.</p>
Oct	18	<p>Interference, Young's double slit experiment and expression for fringe width (No derivation final expression only), coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima (qualitative treatment only)</p> <p>Unit 7: Dual Nature of Radiation and Matter</p>

Month	No. of Working Days	Topics to be covered
		<p>Chapter–11: Dual Nature of Radiation and Matter</p> <p>Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Experimental study of photoelectric effect. Matter waves-wave nature of particles, de-Broglie relation.</p>
Nov	16	<p>Unit 8: Atoms and Nuclei</p> <p>Chapter–12: Atoms</p> <p>Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of nth possible orbit, velocity and energy of electron in his orbit, of hydrogen line spectra (qualitative treatment only).</p> <p>Chapter–13: Nuclei</p> <p>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.</p> <p>Unit 9: Electronic Devices</p> <p>Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits</p> <p>Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction Semiconductor diode -I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier.</p> <p>REVISION, PRE BOARD - I</p>
Dec	24	REVISION, PRE BOARD - II

Lists of Experiments

SECTION - A

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

OR

To verify the laws of combination (parallel) of resistances using a metre bridge.

4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
5. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.

OR

To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.

6. To find the frequency of AC mains with a sonometer.

Activities

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To assemble the components of a given electrical circuit.

5. To study the variation in potential drop with length of a wire for a steady current.
6. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

SECTION - B

Experiments

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

Activities

- To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
- Use of multimeter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order.
- To study effect of intensity of light (by varying distance of the source) on an LDR.
- To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
- To observe diffraction of light due to a thin slit.
- To study the nature and size of the image formed by a (i) convex lens, or (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
- To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

Sub - Chemistry (Code - 043)

Month	No. of Working Days	Unit / Title
March	12	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.
April	19	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, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.
May	15	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.
		Haloalkanes and Haloarenes Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties,

Month	No. of Working Days	Unit / Title
		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.
June	14	Alcohols, Phenols and Ethers 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. 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.
July	22	Aldehydes, Ketones and Carboxylic Acids 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. 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.

Month	No. of Working Days	Unit / Title
Aug	22	d and f Block Elements General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first-row transition metals - metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$.
Sept	21	Half Yearly Exam & Revision
Oct	18	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, the importance of coordination compounds (in qualitative analysis, extraction of metals and biological system). 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.
Nov	16	Revision & Annual Exam
Dec	24	

PRACTICALS

1) Volumetric Analysis :

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)

2) Salt Analysis (qualitative analysis)

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

Cations- Pb^{2+} , Cu^{2+} , As^{3+} , Al^{3+} , Fe^{3+} , Mn^{2+} , Ni^{2+} , Zn^{2+} ,

Co^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Mg^{2+} , NH_4^+

Anions : $(\text{CO}_3)^{2-}$, S^{2-} , NO_2^- , SO_3^{2-} , SO_4^{2-} , NO_3^- , Cl^- ,

Br^- , I^- , PO_4^{3-} , $\text{C}_2\text{O}_4^{2-}$, CH_3COO^-

(Note : Water insoluble salts excluded)

(For Term - I)

3) Content based experiment

A) Chromatography

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

- ii) Separation of constituents present in an inorganic mixture containing two cations only.

(Constituents having large difference in R_f values)

- B) Characteristic tests of carbohydrates, fats and protein in pure samples and their detection in given foodstuffs.

(For Term - II)

A) Preparation of Inorganic Compounds

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

B) Tests for functional groups present in organic compounds.

Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic acid and primary aminog.

Subject - Biology

Months	No. of Working Days	Unit	Topics / Chapter
April	19	VI	<p>REPRODUCTION</p> <p>Ch.1. Reproduction in Organisms Reproduction, a characteristic feature of all organisms for continuation of species; modes of reproduction - asexual and sexual reproduction; asexual reproduction - binary fission, sporulation, budding, gemmule formation, fragmentation; vegetative propagation in plants; events in sexual reproduction.</p> <p>Ch.2. Sexual reproduction in flowering plants Flower structure, development of male and female gametophyte, pollination – types, agencies and examples, outbreeding devices, pollen-pistil interaction, double fertilization, post fertilization development – endosperm and embryo, development of seed and formation of fruit, special modes – apomixes, parthenocarpy, polyembryony, significance of seed and fruit formation.</p> <p>Ch. 3. Human reproduction Male and female reproductive system, Microscopic anatomy of testis and ovary, gametogenesis, menstrual cycle, fertilization, embryo development upto blastocyst formation, implantation, pregnancy and placenta formation (Elementary idea), parturition (Elementary idea), lactation (Elementary idea).</p>
May	15	VI & VII	<p>Ch. 4. Reproductive health Need for reproductive health, prevention of sexually transmitted diseases, birth control – need and methods, contraception</p>

Months	No. of Working Days	Unit	Topics / Chapter
			<p>and MTP, Amniocentesis, Infertility and assisted reproductive technologies – IVF, ZIFT, GIFT (Elementary idea for general awareness).</p> <p>GENETICS & EVOLUTION</p> <p>Ch. 5. Principles of inheritance Mendelian inheritance, deviations from mendelism – Incomplete dominance, Co-dominance, Multiple 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 e- Haemophilia, colour blindness, Mendelian disorders in humans – Down’s syndrome, Turner’s syndrome and Klinefilter’s syndrome.</p>
June	14	VII	<p>Ch. 6. Molecular Basis of inheritance Search for genetic material, structure of DNA and RNA, DNA packaging, DNA replication, central dogma: Transcription, genetic code, translation, gene expression and regulation – Lac Operon, Human genome project, Rice genome project, DNA fingerprinting.</p> <p>QUALIFYING EXAMINATION.</p>
July	22	VII & IX	<p>Ch. 7. Evolution Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); adaptive radiation; Biological evolution: Lamarck’s theory of use and disuse of organs,</p>

Months	No. of Working Days	Unit	Topics / Chapter
			<p>Darwin's theory of evolution; mechanism of evolution - variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy - Weinberg's principle; brief account of evolution; human evolution.</p> <p>BIOTECHNOLOGY & ITS APPLICATION Ch. 11. Principles & processes of Biotechnology Genetic engineering, Recombinant DNA technology. Ch. 12. Application of Biotechnology In health and agriculture, Human insulin, Gene therapy, GMO – Bt crops, Transgenic animals, Bioethical issues, Biopiracy, Patent.</p>
Aug	22	VIII	<p>Biology & Human Welfare Ch. 8. Health & Disease Pathogens, parasites, causing human diseases (Malaria, Filariasis, Ascariasis, Typhoid, Pneumonia, Common cold, Amoebiasis, Ringworm), basic concepts of immunology, vaccine, Cancer, HIV, AIDS, Adolescence, drug and alcohol abuse. Ch.9. Strategies for Enhancement in Food Production Animal husbandry, Plant breeding, tissue culture, single cell protein. Ch. 10. Microbes in Human Welfare In household food processing, industrial production, sewage treatment, energy generation, biocontrol agents and biofertilisers.</p>
Sept	21		Revision & Half Yearly Examination

Months	No. of Working Days	Unit	Topics / Chapter
Oct	18	X	<p>Ecology Ch. 13. Organisms & Environment Habitat and niche, Population and ecological adaptation, Population attributes – growth, birth and death rate, age distribution, Population interactions – mutualism, competition, predation, parasitism. Ch.14. Ecosystem Ecosystem: Ecosystem: structure and function; productivity and decomposition; energy flow; pyramids of number, biomass, energy; nutrient cycles (carbon and phosphorous); ecological succession; ecological services - carbon fixation, pollination, seed dispersal, oxygen release (in brief).</p>
Nov	16	X	<p>Ch.15. Biodiversity and Conservation Biodiversity - Concept, levels, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites. Ch.16. Environmental Issues Air pollution and its control; water pollution and its control; agrochemicals and their effects; solid waste management; radioactive waste management; greenhouse effect and climate change impact and mitigation; ozone layer depletion; deforestation; case study exemplifying success story addressing environmental issue(s). PRE- BOARD - I</p>
Dec	20		PRE BOARD - II

Sub - Computer Science (083)

Month	No. of Working Days	Topic
March	12	Unit - III - Database Management <ul style="list-style-type: none"> • 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).
April	19	Unit - III - Database Management <ul style="list-style-type: none"> • Structured Query Language: introduction, Data Definition Language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints (not null, unique, primary key), create database, use database, show databases, drop database, show tables, create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table, insert, delete, select, operators (mathematical, relational and logical), aliasing, distinct clause, where clause, in, between, order by, meaning of null, is null, is not null, like, update command, delete command, aggregate functions (max, min, avg, sum, count), group by, having clause, joins: cartesian product on two tables, equi-join and natural join.
May	15	Unit I: Computational Thinking and Programming – 2 <ul style="list-style-type: none"> • Revision of Python topics covered in Class XI.

Month	No. of Working Days	Topic
		<ul style="list-style-type: none"> • 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).
June	14	Unit I: Computational Thinking and Programming – 2 <ul style="list-style-type: none"> • Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths. • Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause, writing/appending data to a text file using write() and writelines(), reading from a text file using read(), readline() and readlines(), seek and tell methods, manipulation of data in a text file.
July	22	Unit I: Computational Thinking and Programming – 2 <ul style="list-style-type: none"> • 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.

Month	No. of Working Days	Topic
		<ul style="list-style-type: none"> CSV file: import csv module, open / close csv file, write into a csv file using csv.writer() and read from a csv file using csv.reader().
Aug	22	<p>Unit I: Computational Thinking and Programming – 2</p> <ul style="list-style-type: none"> Data Structure: Stack, operations on stack (push & pop), implementation of stack using list. <p>Unit III: Database Management</p> <ul style="list-style-type: none"> Interface of python with an SQL database: connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using fetchone(), fetchall(), rowcount, creating database connectivity applications.
Sept	21	Revision + Half Yearly Examination
Oct	18	<p>Unit II: Computer Networks</p> <ul style="list-style-type: none"> 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).

Month	No. of Working Days	Topic
		<ul style="list-style-type: none"> Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves). Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card). Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree). Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP. Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting.
Nov	16	<p>Project</p> <p>The aim of the class project is to create something that is tangible and useful using Python file handling/ Python-SQL connectivity. This should be done in groups of two to three students and should be started by students at least 6 months before the submission deadline. The aim here is to find a real world problem that is worthwhile to solve. Students are encouraged to visit local businesses and ask them about the problems that they are facing. For example, if a business is finding it hard to create invoices for filing GST claims,</p>

Month	No. of Working Days	Topic
		then students can do a project that takes the raw data (list of transactions), groups the transactions by category, accounts for the GST tax rates, and creates invoices in the appropriate format. Students can be extremely creative here. They can use a wide variety of Python libraries to create user friendly applications such as games, software for their school, software for their disabled fellow students, and mobile applications, of course to do some of these projects, some additional learning is required; this should be encouraged. Students should know how to teach themselves. The students should be sensitised to avoid plagiarism and violations of copyright issues while working on projects. Teachers should take necessary measures for this.
Dec	24	Revision

Sub - Informatics Practices (065)

Month	No. of Working Days	Topics to be covered
March	12	Revision of Class XI : List, Dictionary, NumPy Introduction to Python libraries- Pandas.
April	19	UNIT- 1: Data Handling with Pandas- 1 Series : Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing and Slicing.
May	15	Data Frames : Introduction, Creation – from Dictionary of Series, List of dictionaries, Array of NumPy. Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels, Boolean Indexing;
June	14	Importing/Exporting Data between CSV/ Text files and Data Frames.
July	22	Data Frame operations: Aggregation, group by, Sorting, Deleting and Renaming Index, Pivoting. Handling missing values – dropping and filling. Finding max, min, count, sum, mean, median, mode, quartile, Standard deviation, variance. Importing/Exporting Data between MySQL database & Pandas.

Month	No. of Working Days	Topics to be covered
Aug	22	<p>Data Visualization: Purpose of plotting, drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram Customizing plots: adding label, title, and legend in plots.</p>
Sept	21	<p>Unit 2: Database Query using SQL</p> <ul style="list-style-type: none"> • 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
Oct	18	<p>Unit 3: Introduction to Computer Networks</p> <ul style="list-style-type: none"> • Introduction to networks, Types of network: LAN, MAN, WAN. • Network Devices: modem, hub, switch, repeater, router, gateway

Month	No. of Working Days	Topics to be covered
		<ul style="list-style-type: none"> • 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 vs dynamic web page, web server and hosting of a website. • Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies
Nov	16	<p>Unit 4: Societal Impacts</p> <ul style="list-style-type: none"> • 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 health concerns related to the usage of technology • Revision & Project work
Dec	24	Revision & Project work, PB Exam

Sub - Physical Health Education (048)

Months	No. of Working Days	Topics
March/ April	20	Unit - 1 MANAGEMENT OF SPORTING EVENT <ul style="list-style-type: none"> ● Functions of Sports Events Management (Planning, Organising, staffing, Directing & Controlling) ● Various committees and their responsibilities (Pre, During and Post) ● Fixtures and its Procedures Knock-out (Bye and Seeding) and League (Staircase and Cyclic)
April	9	Unit - 2 CHILDREN AND WOMEN IN SPORTS <ul style="list-style-type: none"> ● Common postural deformities- Knock-knee, flat foot, round shoulders, lordosis, kyphosis, bow leg and scoliosis and their corrective measures ● Special Consideration (Menarche & Menstrual Dysfunction) ● Female Athletics Traid (Osteoporosis, Amenorrhea, Eating Disorder)
May/ June	15	Unit - 5 SPORTS AND NUTRITION : <ul style="list-style-type: none"> ● Concept of Balance diet and nutrition ● Macro and Micro Nutrients : Food Source and Functions ● Nutritive and Non Nutritive components of Diet
	14	Unit - 6

Months	No. of Working Days	Topics
		TEST AND MEASUREMENT IN SPORTS: <ul style="list-style-type: none"> ➤ Fitness Test – SAI Khelo India Fitness test in School: ➤ Age group 5-8 yrs/ class 1-3 BMI Flamingo Balance test, Plate Tapping test ● Age group 5-8 yrs/ class 4-12 BMI - 50 M Standing Start, 600 M run/walk, Sit and Reach Flexibility test, Strength test (Abdominal Partial Curl up, Push up (boys), Modified Pushups (girls)) ● Computing Basal Metabolic Rate (BMR) ● Rikli and Jones- senior citizen fitness test <ol style="list-style-type: none"> 1. Chair stand test for lower body Strength 2. Arm curl test for upper body Strength 3. Chair sit and reach test for lower Flexibility 4. Back stretch test for upper body Flexibility 5. Eight foot up and go test for Agility 6. Six minute walk test for Aerobic Endurance
July	10	Unit - 8 BIOMECHANICS AND SPORTS : <ul style="list-style-type: none"> ● Newton's law of motion and its application in sports, Equilibrium - Dynamic & Static and Centre of gravity and its application in sports ● Friction & sports ● Projectile in sports.

Months	No. of Working Days	Topics
July	12	<p>Unit - 3</p> <p>YOGA AND LIFE STYLE :</p> <ul style="list-style-type: none"> ● Obesity- procedure, benefits and contraindications for Katichakrasanan, Pawanmuktasana Halasana Paschimottasana Ardhamatseyendrasana Dhanurasana Ushtrasana, Suryabedhan ● Diabetes- Procedure, Benefits and Contraindications for Bhujangasana, Paschimottasana, Pawanmuktasana, Ardhamatseyendrasana Supta Vajarasana Shalabhasana Gomukhasana-yogmudra Ushtrasana Kapalbharti ● Asthma- Procedure, Benefits and Contraindications for such asana. Uttan Mandukasana, Chakrasana, Gomukhasana, Parvatsana, Bhujangasana, Dhanurasana Ushtrasana Vakrasana Kapalbharti Anuloma Viloma, Matsyasana ● Hypertension: Procedure, Benefits and Contraindications for Hypertension Taadasana, Katichakrasanan, Uttanpadasana, ArdhHalasana, Sarala Matyasana Goumukhasana Uttan Mandukasana, Vakrasana, Bhujanasana, Makarasana, Shavasana, Nadishodhanapranayam, Sitlipranayam

Months	No. of Working Days	Topics
Aug	22	<p>Unit - 4</p> <p>PHYSICAL EDUCATION AND SPORTS FOR CWSN (CHILDREN WITH SPECIAL NEEDS) :</p> <ul style="list-style-type: none"> ● Organizations promoting Disability Sports (Special Olympics, Paralympics Deaflympics) ● Advantages of Physical Activities for Children with Special Needs ● Strategies to make physical activity assessable for children with special need
Sept	21	<p>Unit - 7</p> <p>PHYSIOLOGY AND INJURIES IN SPORTS :</p> <ul style="list-style-type: none"> ● Physiological factor determining component of physical fitness ● Effect of exercise on Cardio Respiratory System ● Effect of exercise on Muscular System ● Sports injuries: Classification(Soft tissue injuries: Abrasion, Contusion, Laceration, Incision, Sprain, Strain) Bone and Joint injuries: (Dislocation, Fracture: Stress Fracture, Green Stick, Communated , Transverse Oblique and Impacted) ● First aid-Aims and Objectives

Months	No. of Working Days	Topics
Oct	18	Unit - 9 SPSYCHOLOGY AND SPORTS : <ul style="list-style-type: none"> ● Personality: Its definition- traits and types (Sheldon and Jung classification) and big five theory ● Meaning, concept and types of Aggression in sports ● Psychological Attribute in sports - Self Esteem, Mental Imagery, Self Talk, Goal Setting
Nov	16	Unit - 10 TRAINING IN SPORTS: <ul style="list-style-type: none"> ● Concept of talent Identification and Talent Development in Sports. ● Introduction to sports Training Cycle - Micro, Meso, Macro Cycle ● Types & Method to develop - Strength, Endurance and Speed ● Types & Method to develop - Flexibility and Coordinative Ability

Sub - Economics

Months	No. of Working Days	Units (Chapters and sub topics)
April		National Income and Related Aggregates <ul style="list-style-type: none"> ● Some basic concept: consumption goods, capital goods, final goods, intermediate goods, stocks and flows, gross investment and depreciation ● Circular Flow of Income ● Methods of calculating national income-product/ value added method, income method and expenditure method ● Aggregates related to National Income-GNP, NNP, GDP, NDP, Market price and Factor Cost, Nominal and Real GDP ● GDP and Welfare
May		Money and Banking <ul style="list-style-type: none"> ● Meaning, Functions and Components of Money Supply ● Money Creation by Commercial Banks ● Central Bank and its functions: Bank of issue, Government's Bank ● Banker's Bank, Control of Credit through Bank Rate, Control of Credit through Bank Rate, CRR, SLR, Repo Rate, Reverse Repo Rate, Open Market Operations, Margin Requirements Development Experience (1947-90) <ul style="list-style-type: none"> ● A brief introduction of the state of the Indian economy on the eve of independence ● Common Goals of Five Year Plans ● Main features, problems and policies of agriculture (institutional aspects and new agricultural strategy etc.), industry (industrial licensing etc.) and foreign trade.

Months	No. of Working Days	Units (Chapters and sub topics)
		<p>Economic Reforms since 1991</p> <ul style="list-style-type: none"> ● Need and main features- liberalization, privatization and globalization ● An appraisal of LPG Policy <p>Determination of Income and Employment</p> <ul style="list-style-type: none"> ● Aggregate Demand and its components, Aggregate Supply ● Propensities to consume and save
June/ July		<p>QUALIFYING EXAMINATION</p> <ul style="list-style-type: none"> ● Aggregate Demand and its components, Aggregate Supply ● Propensities to consume and save ● Short Run Equilibrium Output: investment multiplier and its mechanism ● Meaning of full employment and involuntary unemployment ● Problems of Excess Demand and Deficient Demand; measures to correct them- changes in government spending, taxes and money supply <p>Human Capital Formation</p> <ul style="list-style-type: none"> ● How people become resource ● Role of human capital in economic development ● Growth of Education Sector in India
Aug/ Sept		<p>Government Budget and The Economy</p> <ul style="list-style-type: none"> ● Meaning, objectives and components ● Classification of Receipts and Expenditure- Revenue and Capital Components ● Measures of Government Deficit- Revenue deficit, Fiscal deficit, Primary deficit: their meaning.

Months	No. of Working Days	Units (Chapters and sub topics)
		<p>Balance of Payments and Foreign Exchange</p> <ul style="list-style-type: none"> ● Meaning and components of BoP ● BoP deficit: meaning ● Foreign Exchange Rate: meaning of fixed and flexible rates and Managed Floating ● Determination of exchange rate in a free market
Oct		<p>Rural Development</p> <ul style="list-style-type: none"> ● Key Issues: credit and marketing: role of cooperatives, agricultural diversification; alternative farming- organic farming <p>Employment</p> <ul style="list-style-type: none"> ● Formal and Informal ● Growth and other issues: problems and policies
Nov		<p>Sustainable Economic Development</p> <ul style="list-style-type: none"> ● Meaning ● Effects of economic development on resources and environment, including global warming <p>Development Experience of India : A comparison with neighbours</p> <ul style="list-style-type: none"> ● India and Pakistan ● India and China ● Issues: growth, population, sectoral development and other development indicators

Sub - Accountancy (Sub Code - 055)

Months	No. of Working Days	Topics/Unit
March	10	<ul style="list-style-type: none"> ● Partnership: features, Partnership Deed ● Provisions of the Indian Partnership Act 1932 in the absence of partnership deed. ● Fixed v/s fluctuating capital accounts. Preparation of Profit and Loss Appropriation account -division of profit among partners, guarantee of profits. ● Past adjustments (relating to interest on capital, interest on drawing, salary and profit sharing ration) ● Goodwill : nature, factors affecting and methods of valuation - average profit, super profit and capitalization. <p>Note : <i>Interest on partner's loan is to be treated as a charge against profit.</i></p> <p><i>Goodwill to be adjusted through partners capital/current account.</i></p> <p>Note: <i>Raising and writing off goodwill is excluded.</i></p>
April	19	<p>Accounting for Partnership Firms - Reconstitution</p> <ul style="list-style-type: none"> ● Change in the Profit sharing Ratio among the existing partners - sacrificing ratio, gaining ratio, accounting for revaluation of assets and reassessment of liabilities and treatment of reserves and accumulated profits. Preparation of Revaluation account and Balance Sheet.

Months	No. of Working Days	Topics/Unit
		<ul style="list-style-type: none"> ● Admission of a partner : effect of admission of a partner on change in the profit sharing ratio, treatment of goodwill, treatment for revaluation of assets and reassessment of liabilities, treatment of reserves and accumulated profits.
May	15	<p>Unit : Accounting for Partnership Firms Accounting for Partnership firms - Reconstitution and Dissolution</p> <ul style="list-style-type: none"> ● Retirement and death of a partner: effect of retirement / death of a partner on change in profit sharing ratio, treatment of goodwill, treatment for revaluation of assets and reassessment of liabilities, adjustment of accumulated profits and reserves and preparation of balance sheet. ● Calculation of deceased partner's share of profit till the date of death. ● 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)).

Months	No. of Working Days	Topics/Unit
		<p>Note:</p> <p>(i) If realized value of an asset is not given, it is to be presumed that it has not realized any amount. If a partner has borne and/ or paid therealisation expenses, it should be stated</p>
June	14	<p>Accounting for Share Capital</p> <ul style="list-style-type: none"> ● Share and share capital: nature and types. ● Accounting for share capital: issue and allotment of equity and preference 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). ● Accounting treatment of forfeiture and re-issue of shares. <p>Disclosure of share capital in the Balance Sheet of a company.</p>
July	22	<p>Unit - Accounting for Companies</p> <p>Accounting for Debentures</p> <ul style="list-style-type: none"> ● Debentures: 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. Writing off discount / loss on issue of debentures.

Months	No. of Working Days	Chapter Content
		<p>Note: Discount or loss on issue of debentures to be written off in the year debentures are allotted from Security Premium Reserve/ Capital Reserve/ Statement of Profit and Loss as Financial Cost (AS16) in that order.</p> <p>Note: Related sections of the Companies Act, 2013 will apply.</p> <p>Concept of Tax Deducted at Source (TDS) is excluded.</p>
Aug	22	<p>Unit : Accounting for Not - For Profit Organisations</p> <ul style="list-style-type: none"> ● Not - for - profit organizations : concept. ● Receipts and Payments Account : features and preparation. ● Income and Expenditure Account : features, preparation of income and expenditure account and balance sheet from the given receipts and payments account with additional information. <p>Scope :</p> <p>(i) Adjustments in a question should not exceed 3 or 4 in number and restricted to subscriptions, consumption of consumables and sale of assets/ old material.</p> <p>(ii) Entrance/admission fees and general donations are to be treated as revenue receipts.</p> <p>Trading Account of incidental activities is not to be prepared.</p>

Months	No. of Working Days	Chapter Content
Sept	21	<p>Financial statements of a Company: 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).</p> <p>Note: Exceptional items, extraordinary items and profit (loss) from discontinued operations are excluded.</p> <ul style="list-style-type: none"> ● Financial Statement Analysis : Objectives, importance and limitations. ● Accounting Ratios: Meaning, Objectives, 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 coverageratio. ● Activity Ratios: Inventory Turnover Ratio, Trade Receivables Turnover Ratio, Trade Payables Turnover Ratio and Working Capital Turnover Ratio. <p>Profitability Ratios: Gross Profit Ratio, Operating Ratio, Operating Profit Ratio, Net Profit Ratio and Return on Investment</p>
Oct	15	<p>Financial statements of a Company: 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).</p>

Months	No. of Working Days	Chapter Content
		<p>Note: Exceptional items, extraordinary items and profit (loss) from discontinued operations are excluded.</p> <p>Unit : Cash Flow Statement Meaning, objectives and preparation (as per AS 3 (Revised) (Indirect Method only)</p> <p>Note: Adjustments relating to depreciation and amortization, profit or loss on sale of assets including investments, dividend (both final and interim) and tax. Bank overdraft and cash credit to be treated as short term borrowings. Current Investments to be taken as Marketable securities unless otherwise specified.</p>
Nov	12	Project

Subject - Business Studies (054)

Months	No. of Working Days	Chapter
March & April	10 19	<p>Nature & Significance of Management</p> <p>Management-concept, features, objectives and importance. Management as Science, Art and Profession. Levels of Management. Management Functions- Planning, Organising, Staffing, Directing and Controlling. Co-ordination-concept and importance.</p> <p>PRINCIPLES OF MANAGEMENT</p> <p>Concept and significance. Fayol's Principles of Management.</p> <p>Taylor's Scientific Management- Principles and Techniques.</p>
May	15	<p>Business Environment</p> <p>Concept and Importance. Dimensions of Business Environment: Economic, Social, Technological, Political and Legal. Demonetization -Concept and features.</p> <p>Marketing Management</p> <p>Selling and Marketing - Concept ; Marketing management - Concept; Marketing Functions; Marketing Management Philosophies; Marketing Mix - Concept and Elements; Product - Concept, Branding, Labelling and Packaging; Price - Concept, Factors determining price; Physical distribution - Concept and Components, Channels of distribution: Types, Choice of Channels;</p>

Months	No. of Working Days	Chapter
		<p>Promotion - Concept and elements; Advertising - Concept; Personal selling - concept ; Sales Promotion - Concept ; Public Relations - Concept .</p>
June	14	<p>Qualifying Examination Planning</p> <p>Concept , Importance and Limitations; Planning process; Single use and Standing Plans: Objectives, Strategy, Policy, Procedure, method, Rule, Programme and Budget.</p>
July	22	<p>ORGANISING</p> <p>Concept and Importance; Process; Structure of Organisation- Functional and Divisional - Concept. Formal and Informal Organisation - Concept; Delegation-concept, elements and importance. Decentralisation: concept and Importance.</p> <p>STAFFING</p> <p>Concept and Importance of Staffing; Staffing as a part of Human Resource Management - Concept. Staffing process; Recruitment Process; Selection Process; Training and Development - Concept and Importance, Methods of Training - On the Job and Off the Job- Induction training, vestibule Training, Apprenticeship Training and Internship Training.</p>

Months	No. of Working Days	Chapter
August	22	<p>DIRECTING Concept and Importance; Elements of Directing; Supervision - concept, functions of a supervisor; Motivation - concept, Maslow's hierarchy of needs, Financial and Non Financial incentives. Leadership - concept, styles - autocratic, democratic and laissez faire. Communication - concept, formal and informal communication; Barriers to effective communication, how to overcome the barriers.</p> <p>CONTROLLING Concept and importance; Relationship between planning and controlling; Steps in the process of controlling.</p>
Sept	21	REVISION, HALF YEARLY EXAMINATIONS
Oct	18	<p>FINANCIAL MANAGEMENT Concept, role and objectives of Financial Management; Financial decisions - Investment, Financing and Dividend - Meaning and factors affecting; Financial Planning - Concept and Importance.</p> <p>POOJA VACATION PROJECT WORK AND ASSIGNMENT</p> <p>Capital Structure - concept and factors determining Capital Structure. Fixed and Working Capital - Concept and factors affecting their requirements.</p>

Months	No. of Working Days	Chapter
Nov	16	<p>FINANCIAL MARKETS Concept, Functions and Types; Money Market and its Instruments; Capital market and its types (Primary and Secondary), Methods of Floatation in the primary market; Stock Exchange - Functions and Trading Procedure; Securities and Exchange Board of India (SEBI) - Objectives and Functions.</p> <p>CONSUMER PROTECTION Concept and Importance of Consumer Protection; Consumer Protection act 2019: Meaning of Consumer, Rights and Responsibilities of Consumer; Who can file a complaint against whom? Redressal Machinery; Remedies Available. Consumer awareness - Role of Consumer organizations and Non Governmental Organisations (NGOs).</p>
Dec/ Jan	24 16	<p>Project work Revision and Pre-board exams</p>

Sub - Fine Art Painting (Code No. 049)

Months	Theory/ Practical	Topics
April (19 days)	Theory	<p>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 :-</p> <p>(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) Raja Aniruddha Singh Hara of Bundi, (c) Chaugan Players by Dana of Jodhpur, (d) Krishna on swing by Nuruddin of Bikaner, (e) Radha (Bani- Thani) by Nihal Chand of Kishangarh, (f) Bharat Meets Rama at Chitrakut by Guman of Jaipur.</p>
	Practical	<p>Method and material of Painting. Introduction about Nature study- Foliage and flower. Rendering painting, Still life with different draperies of different colours for background and foreground.</p>

Months	Theory/ Practical	Topics
		<p>Subjects of composition:- Still life in pencil shading and colour with light and shade from a fixed point of view, Decorative design, Pattern Making Water colour painting (transparent & opaque), Pencil shading & pen ink. Subjects of composition:- Flower study and still life in pencil shading and colour, landscape painting, composition with human figure - study room, social event.</p>
May/ June (15 +14 days)	Theory	<p>The Pahari School of Miniature Painting:</p> <p>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) Bharat worshipping the Charanpaduka of Ram from Guler, (c) Nand Yashoda and Krishna with Kinsmen going to Vrindavana by Nainsukh from Kangra</p>
	Practical	<p>Portrait study and Life study with pencil shading, sketching & colouring- composition with human figure; Storyboard painting and illustration.</p>

Months	Theory/ Practical	Topics
		Subjects of composition:- Paper collage. Daily life, village life, one imaginative painting, animal figure, bird & flower (use pencil and pen). Presentation of Holiday works.
July (22 days)	Theory	<p>The Mughal School of Miniature Painting :</p> <p>1) Origin and development</p> <p>2) Main features of the Mughal School</p> <p>3) Study of different Mughal Paintings</p> <p>(a) Krishna lifting Mount Goverdhana by Miskin of Akbar period,</p> <p>(b) Birth of Salim by Ramdas of Akbar period,</p> <p>(c) Falcon on a Bird-Rest by Ustad Mansoor of Jahangir period,</p> <p>(d) Kabir and Raidas by Ustad Faquirullah Khan of Shahjahan period.</p> <p>(e) Marriage procession of Dara Shikoh by Haji Madni of Provincial Mughal (Avadh) period.</p>
	Practical	<p>Drawing method, Elements of Art, Design through modern concept, abstract painting, texture painting and Op art.</p> <p>Subjects of composition:- Painting, Affairs of family, friends and daily life; Affairs of family professionals; Bird and animal composition; Landscape painting with human figures.</p>

Months	Theory/ Practical	Topics
Aug (22 days)	Theory	<p>The Deccan School of Miniature Painting :-</p> <p>1) Origin and development</p> <p>2) Main features of the Deccan School</p> <p>3) Study of different Deccan Paintings</p> <p>(a) Ragini Pat hamsika of Ahmednagar,</p> <p>(b) Hazrat Nizamuddin Auliya and Amir Khusro of Hyderabad,</p> <p>(c) Dancers of Hyderabad</p> <p>(d) Chand Bibi Playing Polo (Chaugan) of Gol Konda.</p> <p>New Era in Indian Art. Contribution of Indian artists in the struggle for the National Freedom Movement.</p> <p>National Flag of India and Symbolic significance of its forms and the colour.</p>
	Practical	<p>Project report writing. Painting in different medium, Mixed medium, Wax resistance technique. White on white technique, Monochrome painting, Typography painting, Poster painting.</p> <p>Subjects of composition:- Folk art of Jharkhand (Khobar & Sohrai), Madhubani, Patachitra of Bengal etc.; Fresco/ Mural or Tempera/ any traditional process. Copy of any miniature painting with watercolour, Landscape with watercolour, Human figure composition- Rainy Day, Park, Cultural event.</p>

Months	Theory/ Practical	Topics
Sept (21 days)	Theory	Introduction to the Bengal School of Painting 1) Origin and development 2) Main features of the Bengal School Study of different paintings of the Bengal School : a) Journey's End by Abanindranath Tagore (b) Shiv and Sati by Nandlal Bose (c) Rasa Lila by Kshitindranath Majumdar, (d) Radhika by M.A.R. Chughtai, (e) 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.
Oct (18 days)	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) A Cubist City by Gaganendranath Tagore (c) Doodle by Rabindranath Tagore (d) Mother and child by Jamini Roy

Months	Theory/ Practical	Topics
		(e) Haldi Grinders by Amrita Sher-Gil (f) The Lives of Medieval Saints by Benode Behari Mukherjee (g) Mother Teresa by M.F. Husain (h) Fairy tales from Purvapalli by K. G. Subramanyan
	Practical	Abstract art painting, Modern art, Collage art, Mixed Media, Nature study with pencil shading & colour, Subjects of painting composition:- Mother and child, Cityscape, Copy of any Modern Art.
Nov (16 days)	Theory	Study of different Contemporary (Modern) Indian Graphics :- (a) Whirlpool by N. Krishna Reddy, (b) Children by Somnath Hore, (c) Devi by Jyoti Bhatt, (d) Of Walls by Anupam Sud, (e) Man, Woman and Tree by K. Laxma Goud Study of different Contemporary (Modern) Indian Sculptures:- (a) Triumph of Labour by Devi Prasad Roy Chowdhury (b) Santhal Family by Ramkinker Baij (c) Cries Unheard by Amarnath Sehgal (d) Ganesha by P.V. Janakiram (e) Chaturmukhi by Aekka Yadagiri Rao (f) Vanshri by Mrinalini Mukherjee

Months	Theory/ Practical	Topics
	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).
Dec (21 days)	Theory	Revision of Theory and Exams
	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.
Jan/Feb (22+ 23)	Theory	Revision work and Theory Exams
	Practical	Practical Exams, Submission of complete Portfolio, 2 Practical Project Reports (Digital copies).
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,

Months	Theory/ Practical	Topics
		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) and Viva / Oral on Method material, Fundamentals of art, History of Art.

Sub - Fine Art Graphics (Code No. 050)

Months	Theory/ Practical	Topics
April (19 days)	Theory	<p>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) Raja Aniruddha Singh Hara of Bundi, (c) Chaugan Players by Dana of Jodhpur, (d) Krishna on swing by Nuruddin of Bikaner, (e) Radha (Bani- Thani) by Nihal Chand of Kishangarh, (f) Bharat Meets Rama at Chitrakut by Guman of Jaipur</p>
	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

Months	Theory/ Practical	Topics
		<p>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</p> <p>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.</p> <p>Print quality- no spot anywhere even backside of print, never retouch brush in print, print should be neat and clean.</p> <p>Writing Artists' Proof (A/P), medium, subject & name in print. Finishing mounting and the print.</p> <p>Subjects of composition:- Black & White imaginative composition using different textures. Use of different types of textures in composition, Decorative design, Pattern Making; Flower vase; Affairs of family, friends and Daily life; Affairs of family professionals. And submit Theory Assignment Practical Progress Report.</p>

Months	Theory/ Practical	Topics
May/ June (15 +14 days)	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) Bharat worshipping the Charanpaduka of Ram from Guler, (c) Nand Yashoda and Krishna with Kinsmen going to Vrindavana by Nainsukh from Kangra
	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
July (22 days)	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) Birth of Salim by Ramdas of Akbar period, (c) Falcon on a Bird-Rest by Ustad

Months	Theory/ Practical	Topics
		Mansoor of Jahangir period, (d) Kabir and Raidas by Ustad Faquirullah Khan of Shahjahan period. (e) Marriage procession of Dara Shikoh by Haji Madni of Provincial Mughal (Avadh) period.
	Practical	Printing using any two medium 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 boarder side & backside 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;
Aug (22 days)	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) Ragini Pat hamsika of Ahmednagar, (b) Hazrat Nizamuddin Auliya and Amir Khusro of Hyderabad, (c) Dancers of Hyderabad

Months	Theory/ Practical	Topics
		(d) 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.
	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.;
Sept (21 days)	Theory	Introduction to the Bengal School of Painting 1) Origin and development 2) Main features of the Bengal School Study of different paintings of the Bengal School : (a) Journey's End by Abanindranath Tagore (b) Shiv and Sati by Nandlal Bose (c) Rasa Lila by Kshitindranath Majumdar, (d) Radhika by M.A.R. Chughtai, (e) Meghdoot by Ram Gopal Vijaivargiya

Months	Theory/ Practical	Topics
	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
Oct (18 days)	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) A Cubist City by Gaganendranath Tagore (c) Doodle by Rabindranath Tagore (d) Mother and child by Jamini Roy (e) Haldi Grinders by Amrita Sher-Gil (f) The Lives of Medieval Saints by Benode Behari Mukherjee (g) Mother Teresa by M.F. Husain (h) Fairy tales from Purvapalli by K. G. Subramanyan
	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.

Months	Theory/ Practical	Topics
Nov (16 days)	Theory	<p>Study of different Contemporary (Modern) Indian Graphics :-</p> <p>(a) Whirlpool by N. Krishna Reddy, (b) Children by Somnath Hore, (c) Devi by Jyoti Bhatt, (d) Of Walls by Anupam Sud, (e) Man, Woman and Tree by K. Laxma Goud</p> <p>Study of different Contemporary (Modern) Indian Sculptures:-</p> <p>(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 (e) Chaturmukhi by Aekka Yadagiri Rao (f) Vanshri by Mrinalini Mukherjee</p>
	Practical	Human figure (Colour and Black & white) compositions. Serigraphy using Primary and Secondary colours. Print your composition in one or two colours. Presentation of Graphics (Print Making). Technique of writing Artist's Proof (A/P), no. of prints (1/6), Medium, Subject, Name Class Sec. in prints.

Months	Theory/ Practical	Topics
Dec (24 days)	Theory	Revision of Theory and Exams
	Practical	<p>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.</p> <p>Practical Project Report Preparation on method, material, art works of entire year. (digital two copies).</p>
Jan/Feb (16 + 21)	Theory	Revision work and Theory Exams
	Practical	Practical Exams, Submission of Portfolio with selected 10 best prints, 2 Practical Project Reports (Digital copies).
	Materials Required for Practical	<p>Silk screens of 12X15 or 15x20 inches (Approx), MDF Board (8x10inches), Small poster colour set of 6 colours, Few Brushes, Pencil, Small steel bowl-2, Small plastic bottle-2, Cello tape-1 inch, Big Paper knife cutter, Scissor, {Tarpine, Reducer / Nytero- ½ L (keep at home)}, Waste Cloths, Old News Papers, Apron, in a big Carry bag, Chart papers (A/2 size or ½ Chart paper unrolled), File boards for Portfolio of dark Colour etc.</p> <p>Please submit Theory Assignment and Practical Progress Report</p>

Months	Theory/ Practical	Topics
Practical Exam		<p>Practical Paper - I : Layout making with black and white poster colour on given subject (original composition). Transforming layout on silk screen.</p> <p>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 own papers.</p> <p>Practical (Paper-III)- Portfolio with selected 10 Prints, 2 Practical Project Reports (Digital copies) and</p> <p>Viva / Oral on Method material, Fundamentals of art, History of Art.</p>

Sub - Sociology

Months	No. of Working Days	Name of the Chapter
March	10	<p>1. Introducing Indian Society (Non evaluative)</p> <ul style="list-style-type: none"> ● Colonialism ● Nationalism ● Class and Community <p>2. Demographic Structure and Indian Society</p> <ul style="list-style-type: none"> ● Theories and concepts in demography ● Rural - Urban Linkages and divisions
April	19	<p>3. Social institutions : Continuity and change</p> <ul style="list-style-type: none"> ● Family and kinship ● The Caste System ● Tribal Society <p>4. Market as a Social Institution</p> <ul style="list-style-type: none"> ● Sociological perspective on markets and the economy ● Globalisation Interlinking of local, Regional National and International Markets.
May	15	<p>5. Pattern of Social Inequality and Exclusion</p> <ul style="list-style-type: none"> ● Caste, Prejudice, Scheduled castes and other Backward Classes ● Marginalisation of Tribal Communities ● The struggle for women's equality ● The struggle of the Differently Abled <p>6. Challenges of Cultural Diversity</p> <ul style="list-style-type: none"> ● Cultural Communities and the Nation State ● Problems of communalism, Regionalism and casteism

Months	No. of Working Days	Name of the Chapter
		<ul style="list-style-type: none"> ● The Nation State, religion related issues, and identities ● Communalism, Secularism and the Nation State. ● State and Civil Society
June	14	7. Suggestions for Project Work (Non Evaluative)
July	22	<p>Changes and Development in Indian Society</p> <p>8. Structural Change</p> <ul style="list-style-type: none"> ● Colonialism ● Industrialisation ● Urbanisation <p>9. Cultural Change</p> <ul style="list-style-type: none"> ● Modernisation ● Westernisation ● Sanskritisation ● Secularisation ● Social Reform Movements and Laws
Aug	22	<p>10. The Story of Democracy</p> <ul style="list-style-type: none"> ● The Constitution as an instrument of social change. ● Political Parties, Pressure groups and Democratic politics ● Panchayati Raj and the Challenges of Social Transformations <p>11. Changes and Development in Rural Indian Society</p> <ul style="list-style-type: none"> ● Land Reforms, Green Revolution and Emerging Agrarian Society ● Agrarian Structure : Caste and Class in Rural India

Months	No. of Working Days	Name of the Chapter
		<ul style="list-style-type: none"> ● Land Reforms ● Green Revolution and its social consequences ● Transformation in Rural Society. ● Globalisation, Liberalisation and Rural Society
Sept	21	<p>12. Changes and Development in Industrial Society</p> <ul style="list-style-type: none"> ● From planned Industrialisation to Liberalisation. ● Getting a job ● Work Processes
Oct	18	<p>13. Globalisation and Social Change</p> <ul style="list-style-type: none"> ● Dimensions of Globalisation. <p>14. Globalisation and Social Change</p> <ul style="list-style-type: none"> ● Types of Mass Media : Radio, Television and Print Media ● Changing Nature of Mass Media
Nov	16	<p>15. Social Movements</p> <ul style="list-style-type: none"> ● Theories and Classification of Social Movements ● Class based movements ; workers and peasants. ● Caste based movements : Dalit movements Backward caste movement ● Castes, Trends in Upper Caste Reformers ● Women's Movement in Independent India ● Tribal Movements ● Environmental Movements <p>Revision</p>

Sub - History (Code 027)

Months	No. of Working Days	Topics and Sub-Topics	Monday test /Ability Test
March	12	<p>Religious Histories : The Bhakti-Sufi Tradition Broad overview: a Outline of religious developments during this period b. Ideas and practices of the Bhakti-Sufi saints. Story of Transmission: How Bhakti-Sufi (compositions) have been preserved. Excerpt: Extracts from selected Bhakti-Sufi works Discussion: Ways in which these have been interpreted by historians.</p>	
April	19	<p>The Story of the First Cities: Harappan Archaeology. Broad overview: Early urban centres Story of discovery: Harappan civilization. Excerpt: Archaeological report on a major site Discussion: How it has been utilized by archaeologists/historians.</p>	24/04/2023 The Bhakti Tradition

Months	No. of Working Days	Topics and Sub-Topics	Monday test /Ability Test
		<p>Political and Economic History: How Inscriptions tell a story. Broad overview: Political and economic history from the Mauryan to the Gupta period. Story of discovery: Inscriptions and the decipherment of the script. Shifts in the understanding of political and economic history. Excerpt: Asokan inscription and Gupta period land grant Discussion: Interpretation of inscriptions by historians.</p>	
May	15	<p>Social Histories: Using the Mahabharata Broad overview: Issues in social history, including caste, class, kinship and gender Story of discovery: Transmission and publications of the Mahabharata Excerpt: from the Mahabharata, illustrating how it has been used by historians. Discussion: Other sources for reconstructing social history.</p>	15/05/2023 Ability Test Indus valley civilisation

Months	No. of Working Days	Topics and Sub-Topics	Monday test /Ability Test
		<p>A History of Buddhism: Sanchi Stupa Broad overview: A brief review of religious histories of Vedic religion, Jainism, Vaishnavism, Shaivism (Puranic Hinduism). Focus on Buddhism. Story of discovery: Sanchi stupa. Excerpt: Reproduction of sculptures from Sanchi. Discussion: Ways in which sculpture has been interpreted by historians, other sources for reconstructing the history of Buddhism.</p>	
June		Qualifying Examination	
July	22	<p>Medieval Society through Travellers' Accounts Broad overview: Outline of social and cultural life as they appear in travellers' accounts. Story of their writings: A discussion of where they travelled, why they travelled, what they wrote, and for whom they wrote. Excerpts: from AlBiruni, Ibn Battuta, Francois Bernier</p>	31/07/2023 Ability Test Buddhism Jainism and Puranic Hinduism

Months	No. of Working Days	Topics and Sub-Topics	Monday test /Ability Test
		<p>Discussion: What these travel accounts can tell us and how they have been interpreted by historians. Agrarian Relations: The Ain-i-Akbari Broad overview: Structure of agrarian relations in the 16th and 17th centuries. Patterns of change over the period. Story of Discovery: Account of the compilation and translation of Ain-i-Akbari Excerpt: from the Ain-i-Akbar Discussion: Ways in which historians have used the text to reconstruct history.</p> <p>The Mughal Court : Reconstructing Histories through Chronicles Broad overview: Outline of political history 15th-17th centuries Discussion of the Mughal court and politics. Story of Discovery: Account of the production of court chronicles, and their subsequent translation and transmission. Excerpts: from the</p>	

Months	No. of Working Days	Topics and Sub-Topics	Monday test /Ability Test
		Akbarnama and Padshahnama Discussion: Ways in which historians have used the texts to reconstruct political histories.	
August	22	Colonialism and Rural Society: Evidence from Official Reports Broad overview: Life of zamindars, peasants and artisans in the late 18th century East India Company, revenue settlements in various regions of India and surveys Changes over the nineteenth century Story of official records: An account of why official investigations into rural societies were undertaken and the types of records and reports produced. Excerpts: From Fifth Report, Accounts of Frances Buchanan-Hamilton, and Deccan Riots Report. Discussion: What the official records tell and do not tell, and how they have	07/08/2023 Mughal society and court

Months	No. of Working Days	Topics and Sub-Topics	Monday test /Ability Test
		been used by historians. Representations of 1857 Broad overview: The events of 1857-58 Vision of Unity How these events were recorded and narrated. Focus: Lucknow Excerpts: Pictures of 1857. Extracts from contemporary accounts Discussion: How the pictures of 1857 shaped British opinion of what had happened. Mahatma Gandhi through Contemporary Eyes Broad overview: The Nationalist Movement 1918-48. The nature of Gandhian politics and leadership. Focus: Mahatma Gandhi and the three movements and his last days as "finest hours" Excerpts: Reports from English and Indian language newspapers and other contemporary writings. Discussion: How newspapers can be a source of history.	

Months	No. of Working Days	Topics and Sub-Topics	Monday test /Ability Test
Sept	21	Half yearly Examination	
Oct	18	<p>New Architecture:Hampi Broad overview: Outline of new buildings during Vijayanagar period -temples, forts, irrigation facilities. Relationship between architecture and the political system. Story of Discovery: Account of how Hampi was found. Excerpt: Visuals of buildings at Hampi Discussion: Ways in which historians have analyzed and interpreted these structures.</p> <p>Colonialism and Indian Towns: Town Plans and Municipal Reports Broad overview: History of towns in India, colonization and cities, hill stations, town planning of Madras, Calcutta and Bombay. Excerpts: Photographs and paintings. Plans of cities. Extract from town plan reports. Focus on Calcutta town planning</p>	<p>16/10/2023 Ability Test National movement 30/10/2023 Monday Test Revolt of 1857</p>

Months	No. of Working Days	Topics and Sub-Topics	Monday test /Ability Test
		Discussion: How the above sources can be used to reconstruct the history of towns. What these sources do not reveal.	
Nov	16	<p>Partition through Oral Sources Broad overview: The history of the 1940s Nationalism, Communalism and Partition. Focus: Punjab and Bengal Excerpts: Oral testimonies of those who experienced partition. Discussion: Ways in which these have been analyzed to reconstruct the history of the event. The Making of the Constitution Broad overview Independence and the new nation-state.</p> <p>The making of the Constitution Focus: The Constitutional Assembly debates Excerpts: from the debates Discussion: What such debates reveal and how they can be analyzed.</p>	
Dec	24	Revision - Pre boards	

Subject - Political Science (028)

A. Theory

Units		Marks
PART - A : Contemporary World Politics		
1	The End of Bipolarity	8
2	New Centres of Power	6
3	Contemporary South Asia	6
4	United Nations and its organization	5
5	Security in Contemporary World	5
6	Environment and Natural Resource	5
7	Globalisation	5
	Total	40
PART - B : Politics in India since Independence		
1	Challenge of Nation Building	4
2	Planned Development	4
3	India's Foreign Policy	8
4	Parties and Party System in India	6
5	Democratic Resurgence	6
6	Regional Aspirations	6
7	Indian Politics- Recent Trends and Development	6
	Total	40

PROJECT WORK

20 Marks

Grand Total 100

Month	Working Days	Topics
April	19	<p>Challenges of Nation - Building Nehru's approach to nation-building; Legacy of partition : challenge of 'refugee' resettlement, the Kashmir problem.</p> <p>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.</p>
May	15	<p>Planned Development Changing nature of India's Economic Development Planning Commission and Five Year Plans, National Development Council, NITI Aayog.</p>
June	14	<p>New Centres of Power Organizations: European Union, ASEAN, SAARC, BRICS. Nations: Russia, China, Israel, India, Japan and South Korea.</p> <p>Discussion about Project work and synopsis making</p>
July	22	<p>India's Foreign Policy Principles of Foreign Policy; India's Changing Relations with Other Nations: US, Russia, China, Israel; India's Relations with its Neighbours: Pakistan, Bangladesh, Bhutan, Nepal, Sri Lanka and Myanmar; India's Nuclear Programme.</p> <p>Contemporary South Asia Conflicts and efforts for Peace Democratization in South Asia: Pakistan, Nepal, Bangladesh, Sri Lanka, Maldives.</p>
Aug	22	<p>United Nations and its Organizations Principal Organs, Key Agencies: UNESCO, UNICEF, WHO, ILO, Security Council and the Need for its Expansion.</p> <p>Security in Contemporary World Security: Meaning and Type; Terrorism.</p>

Month	Working Days	Topics
Sept	21	Parties and Party System in India One Party Dominance, Bi-Party System, Multi-Party Coalition System. Half Yearly Examination
Oct	18	Democratic Resurgence Jaya Prakash Narayan and Total Revolution, Ram Manohar Lohia and Socialism, Pandit Deendayal Upadhyaya and Integral Humanism, National Emergency, Democratic Upsurges - Participation of the Adults, Backwards and Youth. Environment and Natural Resources Environmental Movements, Global Warming and Climate Change, Conservation of Natural Resources. Globalization : Meaning, Manifestation and Debates.
Nov	16	Regional Aspirations Rise of regional parties. Punjab Crisis. The Kashmir Issue, Movements for Autonomy. Indian Politics: Recent Trends and Development Era of Coalitions, National Front, United Front, United Progressive Alliance (UPA) - I & II, National Democratic Alliance (NDA) I, II, III & IV, Issues of Development and Governance.
Nov-Dec	16+24	Pre Boards

2) Project Work : 20 Marks

Note : Topics from the PDF extra topics to be covered with the syllabus side by side.

Sub - Odissi Dance (Code No. 059)

Months	Period	Topics
March		Learning and practice of one Pallavi. Definition of the term Pallavi and Demonstration of the item.
April		Learning and practice of one Pallavi. Recitation of the Ukutas of the item with hands. Elementary knowledge about the three styles of chhau : Mayurbhanj, Seraikella and Purulla.
May		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.
June		(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..
July & Aug		Practice of patak hasta mudra viniyog acc to Abhinaya Darpan. Short notes on : (a) The Aharya of Odissi (b) The music accompaniment of Odissi (c) Past and present exponents of Odissi their short biography and contribution. And

Months	Period	Topics
		brief explanation of the following terms : (a) Nritta, Nritya, and Natya (b) Matra, Laya, Taal, Avartan, Vibhaga (c) Tandav and Lasya (d) Natyadharmi and Lokadharmi.
Sept		Ability to demonstrate the following Bhangis : Samabhanga, Abhanga, Tribhaanga, Alasaa, Darpani, Abhimama, Mardala, Parshva Mardala, and Biraja, Akuchana, Kumbhaka, Architkar or Nibedana, Daalmalika. Ability to write the notation of the learnt items of Sthayi and Moksha. Ability to show different paad bhedas and bramaris. Definition and short explanation of nine Rasa.
Oct		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.
Nov		Revision work and Theory exams. Revision of Bhangis.
Dec		Practical Exams. Submission of Practical Project.
Jan		Revision for PB – II Exams.

Sub - Hindustani Music Vocal (Code No. 034)

Months	No. of Periods	Practical Topic	Theory Topics
March		Raag Bhairav (Drutkhyal)	Brief study of the following :- Alankar, Alap, Tana, Meend, Gamak
April		Taan of Raag Bhairav Vilambit Khyal in Raag Bhairav (Astayi)	Historical development of Time Theory of Ragas
May		Vilambit khyal in Raag Bhairav (Antara)	Description of prescribed talas along with tala notation with thah, dugun and chaugun-jhaptala, Rupak
June		Raag Bageshri (Drutkhyal)	<ul style="list-style-type: none"> ● Critical study and writing notation of Raga Bageshri ● Description of Dhamar tala with tala notation
July		Taan of Raag Bageshri Taan in Vilambit Khyal	Details study of Sangeet Ratnakar
Aug		Raag Malkouns (Drutkhyal)	Brief study of the following :- Gram, Murchhana, Kan, Khatka, Murki
Sept		Taan in Raag Malkouns Tarana in Raga Malkouns	<ul style="list-style-type: none"> ● Details study of Sangeet Parijat ● Knowledge of tuning of the Tanpura

Months	No. of Periods	Practical Topic	Theory Topics
Oct		Dhamar in Raag Malkouns (asthai)	Life sketch and contribution to music of - Faiyaz kha, Bade Gulam Ali Kha, Krishna Rao Shankar Pandit
Nov		Dhamar in Raag Malkouns (antara)	Description of Dhamar Tala with Tala notation.
Dec		Revision & Pre board exam	Revision& pre board exam
Jan		Pre board -2	Pre board-2
Feb		Practical exams	Practical exams

Sub - Geography

Months	No. of Working Days	Topics / Subtopics
April	19	<p>B1. Human Geography: Nature and Scope</p> <p>B1. The World Population- distribution, density and growth</p> <p>B1. Population change - Components of population change, Demographic Transition</p> <p>B2. Population: distribution, density and growth; composition of population - linguistic, religious; sex, rural-urban and occupational-regional variations in growth of population</p> <p>B2. Human Settlements</p> <ul style="list-style-type: none"> ➤ Rural settlements - types and distribution ➤ Urban settlements - types, distribution and functional classification <p>B3. Type and Sources of data: Primary, Secondary and other sources.</p>
May	15	<p>B2. Land resources- general land use; agricultural land use; geographical conditions and distribution of major crops (Wheat, Rice, Tea, Coffee, Cotton, Jute, Sugarcane and Rubber); agricultural development and problems</p>

Months	No. of Working Days	Topics / Subtopics
		B2. Water resources -availability and utilisation, irrigation, domestic, industrial and other uses; scarcity of water and conservation methods-rain water harvesting and watershed management
June	14	Qualifying Examination B1. Human development - concept; selected indicators, international comparisons.
July	22	B1. Primary activities - concept and changing trends; gathering, pastoral, mining, subsistence agriculture, modern agriculture; people engaged in agricultural and allied activities - some examples from selected countries. B1. Secondary activities - concept; manufacturing : types - household, small scale, large scale; agro based and mineral based industries. B2. Mineral and energy resources -distribution of metallic (Iron ore, Copper, Bauxite, Manganese); non-metallic (Mica, Salt) minerals; conventional (Coal, Petroleum, Natural gas and Hydroelectricity) and non-conventional energy sources (solar, wind, biogas) and conservation.

Months	No. of Working Days	Topics / Subtopics
		B3. Tabulating and processing of data ; calculation of averages, measures of central tendency.
Aug	22	B1. Tertiary activities - concept; trade, transport and tourism; services; people engaged in tertiary activities. B1. Quaternary activities - concept; people engaged in quaternary activities - case study from selected countries. B2. Planning in India - target group area planning (case study); idea of sustainable development (case study). B2. Transport and communication - roads, railways, waterways and airways: oil and gas pipelines; Geographical information and communication net works. B3. Representation of data- construction of diagrams : bars, circles and flowchart; thematic maps; construction of dot; choropleth and isopleths maps.
Sept	21	B1. Transport, Communication and Trade. ➤ Land transport - roads, railways; transcontinental railways Water transport- inland waterways; major ocean routes.

Months	No. of Working Days	Topics / Subtopics
		<ul style="list-style-type: none"> ➤ Air transport- Intercontinental air routes Oil and gas pipelines. ➤ Satellite communication and cyber space importance and usage for geographical information; use of GPS <p>Revision & Half Yearly Examination</p>
Oct	18	<p>B1. International trade- bases and changing patterns; ports as gateways of international trade; role of WTO in international trade.</p> <p>B3. Spatial Information Technology - Introduction to GIS; hardware requirements and software modules; data formats; raster and vector data, data input, editing and topology building; data analysis; overlay and buffer.</p>
Nov	16	<p>B2. International trade- changing pattern of India's foreign trade; sea ports and their hinterland and airports.</p> <p>B2. Geographical Perspective on selected issues and problems.</p> <ul style="list-style-type: none"> ➤ Environmental pollution; urban-waste disposal. ➤ Urbanization, rural-urban migration; problems of slums. ➤ Land degradation <p>Revision & Pre - Board I</p>

Months	No. of Working Days	Topics / Subtopics
Dec/ Jan	24+ 16	Pre - Board I Revision & Pre - Board II

B1 - Fundamentals of Human Geography.

B2 - India - People and Economy.

B3 - Practical Work in Geography Part - II.