SYLLABUS - 2022- 2023

Class - XII **Sub - English**

Books Prescribed :

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

Months	No. of Working Days	Topics
April	21	FL -The Last Lesson My Mother at Sixty Six (Poem) Lost Spring VS - The Third Level AWS - Notice Writing Letter to the Editor
May	16	FL - Keeping Quiet (Poem) VS - The Tiger King AWS - Article Writing
June	04	FL - Deep Water
July	24	FL- The Rattrap Indigo VS - Journey to The End of The Earth AWS - Report Writing Job Application
August	22	FL- Poets and Pancakes A Thing of Beauty (Poem) VS - The Enemy AWS- Invitations & Replies (Formal & Informal)

Months	No. of Working Days	Topics
Sept	23	**Revision for 1st Term** FL - A Roadside Stand (Poem) VS - On The Face of It
Oct	12	FL- The Interview FL- Aunt Jennifer's Tigers (Poem)
Nov	22	FL- Going Places VS - Memories of Childhood
Dec	**20**	**Revision for 2nd Term**

Subject - Mathematics (Code - 041)

Months	No. of Working Days	Portion
April	21	**1. Relations:** Types of relations, reflexive, symmetric transitive and equivalence relations, **Activity No. 1** **2. Functions:** One to one and onto functions **Activity No. 3 and 4** **3. Inverse trigonometric functions:** Definition, range, domain, principal value branch. Graphs of Inverse trigonometric functions. **4. Matrices** Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non- commutativity of multiplication of matrices & existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2).
May	16	Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries). **Activity No. 5** **5. Determinants** Determinant of a square matrix (up to 3x3 matrices), minors, co-factors and applica-

Months	No. of Working Days	Portion
		tions of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix. **6. Continuity and Differentiability:** Continuity and differentiability chain rule. derivatives of inverse trigonometric function, derivative of implicit functions. Concept or exponential and logarithmic functions Derivatives of logarithmic and exponential functions. Logarithmic differentiation. **Activity No. 6,7,8**
June	12	**QUALIFYING EXAMINATION**
July	23	derivative of Functions expressed in parametric forms. Second order derivatives. **7. Applications of Derivatives:** Rate of change of physical quantities, increasing / decreasing functions, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool) Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations. **Activity No. 9,10,11, and 15** **8. Linear Programming Problems (LPP):** Introduction,related terminologies such as Constraints, Objective functions, Optimization,

Months	No. of Working Days	Portion
		Graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).
Aug	21	**9. Integration:** Integration as inverse process of differentiation, Integration of a variety of functions by substitution, Evaluation of simple integrals of the special type of problems based on them by partial fractions. Integration by parts, special integrals like $\left[\frac{1}{x^2 \pm \alpha^2},\ \frac{1}{\alpha^2 - x^2},\ \frac{1}{\sqrt{x^2 \pm \alpha^2}},\ \frac{1}{\sqrt{\alpha^2 - x^2}}\right]$ $\sqrt{\alpha^2 - x^2},\ \sqrt{x^2 \pm \alpha^2},\ (\alpha x + b)\sqrt{x^2 \pm \alpha^2},\ (\alpha x + b)\sqrt{\alpha^2 - x^2}$ **10. Definite integrals** fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.
Sept.	10	**HALF YEARLY EXAM** **11. Applications of the integrals:** Applications in finding the area under simple curves especially lines, circles, parabolas, ellipses (in Standard form only). **Activity No. 12**

Months	No. of Working Days	Portion
Oct	12	**12. Differential Equations:** Definition, Order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations, Solution of linear differential equations of first order and first degree. **13. Probability:** Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable. **Activity No. 14**
Nov	23	**14. Vectors :** Vectors and scalars, magnitude and direction of a vector Direction cosines and direction ratios of a vector. Types of vectors, (equal, unit, zero, parallel and colinear vectors, position vector of a point. negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition and geometrical interpretation, properties and application of scalar product of vectors, Definition and geometrical interpretation, properties and application of vector product of vectors. **Activity No. 13**

Months	No. of Working Days	Portion
		15. Three-Dimensional Geometry: Direction cosines and direction ratios of a line joining two points, Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines.
Dec	20	**Revision**

Lab Activity in Mathematics

1. To make a partition of a set of students of standard XII on the basis of a relation defined as R = {(α, *b*): α and b have same birth year / birth day / birth month} and confirm it as an equivalence relation.

2. To draw the graph of $\sin^{-1} x$ using the graph of sin χ and demonstrate the concept of mirror reflection about the line $y = x$.

3. To sketch the graph of 2^{χ} and $\log_2$ and to examine that they are mirror images of each other.

4. 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_o , $\Delta y = |f(x_o + \Delta x) - f(x_o)|$ is arbitrary small, provided Δx is sufficiently small.

7. To understand the concept of decreasing and increasing functions.

8. To understand the concepts of local maxima, local minima and point of inflection.

9. To understand the concept of Absolute maxima and absolute minima of a function in a given closed interval through its graph.

10. To evaluate the definite integral $\int_{\alpha}^{b} \sqrt{1 - x^2}\, dx$ as the limit of the sum and verify it by actual integration.

11. To verify geometrically that $\alpha(\vec{\alpha} + \vec{b}) = \alpha\vec{\alpha} + \alpha\vec{b}$ and $(\alpha + \beta)\vec{\alpha} = \alpha\vec{\alpha} + \beta\vec{b}$.

12. 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.

13. To find the time when the area of a rectangle of given dimension become maximum, of the length is decreasing and breadth is increasing at a given rate.

Month	No. of Working Days	Topics to be covered
April	21	**Unit I : Electrostatics** **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). **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).

Month	No. of Working Days	Topics to be covered
May	16	**Unit II : 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	11	**QUALIFYING EXAMINATION** **Unit III : 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.
July	23	Ampere's law and its applications to infinitely long straight wire. Straight solenoid (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields. Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere, torque experienced by a current loop in uniform magnetic field; Current loop as a magnetic dipole and its magnetic dipole moment, moving coil galvanometer-its current sensitivity 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 IV: Electromagnetic Induction and Alternating Currents** **Chapter–6: Electromagnetic Induction** Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction.
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 V: Electromagnetic waves** **Chapter–8: Electromagnetic Waves** Basic idea of displacement current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet,

Month	No. of Working Days	Topics to be covered
		X-rays, gamma rays) including elementary facts about their uses. **Unit VI: Optics** **Chapter–9: Ray Optics and Optical Instruments** Ray Optics: Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and optical fibers, Refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism. Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.
Sept	23	**HALF YEARLY EXAMINATION** **Chapter–10: Wave Optics** Wave optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle.
Oct	12	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) **Unit VII: Dual Nature of Radiation and Matter** **Chapter–11: Dual Nature of Radiation and Matter**

Month	No. of Working Days	Topics to be covered
		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.
Nov	23	**Unit VIII: Atoms and Nuclei** **Chapter–12: Atoms** Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of nth possible orbit, velocity and energy of electron in his orbit, of hydrogen line spectra (qualitative treatment only). **Chapter–13: Nuclei** Composition and size of nucleus, nuclear force Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion. **Unit IX: Electronic Devices** **Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits** Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier. **REVISION, PRE BOARD - I**
Dec		**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

1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.

2. 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.

3. To study effect of intensity of light (by varying distance of the source) on an LDR.

4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.

5. To observe diffraction of light due to a thin slit.

6. 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).

7. 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
April	21	**Unit - II** **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.
May	16	**Unit - III** **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.
June		**Qualifying Exam**
July	24	**Unit - IV** **Chemical Kinetics** Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order

Month	No. of Working Days	Unit / Title
		reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.
July	24	**Unit - VIII** **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 $K_2Cr_20_7$ and $KMnO_4$. **Lanthanoids -** Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences. **Actinoids -** Electronic configuration, oxidation states and comparison with lanthanoids.
Aug	22	**Unit - IX** **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).

Month	No. of Working Days	Unit / Title
Aug	22	**Unit - X** **Haloalkanes and Haloarenes** **Haloalkanes:** Nomenclature, nature of C-X bond, physical and chemical properties, optical rotation mechanism of substitution reactions. **Haloarene:**sNature 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.
Sept	24	**Unit - XI** **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, electrophllic substitution reactions, uses of phenols. **Ethers:** Nomenclature, methods of preparation, physical and chemical properties, uses.
Oct	12	**Unit - XII** **Aldehydes, Ketones and Carboxyllc Acids** **Aldehydes and Kotones:** Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophlllc addition, reactivity of alpha hydrogen in aldehydes, uses.

Month	No. of Working Days	Unit / Title
		Carboxyllc Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical propertei s: uses.
Nov	22	**Unit - XIII** **Amines** **Amines:** Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identlflcatlon of prlmnry, secondary and tertiary amines. **Dlazonlum salts:** Preparation, chemical reactions and imp ortance in synthetic organic chemistry.
Nov	22	**Unit - XIV** **Biomolecules** **Carbohydrates -** Classification (aldoses and ketoses), monosaccharfdes (glucose and fructos e) , D - L configuration ollgosaccharfdes (sucrose, lactose, m alto s e), pol ysaccharides (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 (qualitati ve idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure . **Vitamins -** Classification and functions. **Nucleic Acids: DNA** and **RNA**.
Dec		**Revision**

PRACTICALS

1) Volumetric Analysis :

Determination of concentration / molarity of KM_nO_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+} , $A1^{3+}$,Fe^{3+} , Mn^{2+} , Ni^{2+} , Zn^{2+} ,

Co^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Mg^{2+} , NH_{4+}

Anions : $(CO_3)^{2-}$, S^{2-} , NO_{2-} , SO_3^{2-}, SO_4^{2-}, NO_{3-} , $C1^-$,

Br^- , I^- , PO_4^{3-}, $C_2O_4^{2-}$, 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 Revalue.

ii) Separation of constituents present in an inorganic mixture containing two cationsonly.

(Constituents having large difference in Revalues)

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

(For Term - II)

A) Preparation of Inorganic Compounds

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

B) Tests for functional groups present in organic compounds.

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

Subject - Biology

Months	No. of Working Days	Unit	Topics / Chapter
April	21	VI	**REPRODUCTION** **Ch.2. Sexual reproduction in flowering plants** Flower structure, development of male and female gametophyte, pollination – types, agencies and examples, outbreeding devices, pollen-pistil interaction, double fertilization, post fertilization development – endosperm and embryo, development of seed and formation of fruit, special modes – apomixes, pathernocarpy, polyembryony, significance of seed and fruit formation. **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).
May	16	VI & VII	**Ch. 4. Reproductive health** Need for reproductive health, prevention of sexually transmitted diseases, birth control – need and methods, contraception and MTP, Amniocentesis, Infertility and assisted reproductive technologies – IVF, ZIFT, GIFT (Elementary idea for general awareness).

Months	No. of Working Days	Unit	Topics / Chapter
			GENETICS & EVOLUTION **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- Haemophilia, colour blindness, Mendelian disorders in humans – Down's syndrome, Turner's syndrome and Klinefilter's syndrome.
June	11	VII	**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. **QUALIFYING EXAMINATION**.
July	23	VII & IX	**Ch. 7. Evolution** Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); adaptive radiation; Biological evolution: Lamarck's theory of use and disuse of organs, Darwin's theory of evolution; mechanism

Months	No. of Working Days	Unit	Topics / Chapter
			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. **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.
Aug	22	VIII	**Biology & Human Welfare** **Ch. 8. Health & Disease** Pathogens, parasites, causing human diseases (Malaria, Filaria, Ascariasis, Typhoid, Pneumonia, Common cold, Amoebiasis, Ringworm), basic concepts of immunology, vaccine, Cancer, HIV, AIDS, Adolescence, drug and alcohol abuse. **Ch. 10. Microbes in Human Welfare** In household food processing, industrial production, sewage treatment, energy generation, biocontrol agents and biofertilisers.
Sept	23		**Revision & Half Yearly Examination**

Months	No. of Working Days	Unit	Topics / Chapter
Oct	12	X	**Ecology** **Ch. 13. Organisms & Environment** Habitat and niche, Population and ecological adaptation, Population attributes – growth, birth and death rate, age distribution. **Ch.14. Ecosystem** **Ecosystem:** structure and function; productivity and decomposition; energy flow; pyramids of number, biomass, energy.
Nov	23	X	**Ch.15. Biodiversity and Conservation** Biodiversity - Concept, levels, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites. **PRE- BOARD - I**
Dec	20		**PRE BOARD - II**

Sub - Computer Science (083)

Month	No. of Working Days	Topic
April	21	**Database Management** • **Database concepts:** introduction to database concepts and its need • **Relational data model:** relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key) • **Structured Query Language:** introduction, Data Definition Language and Data Manipulation Language, • Data Type (char(n), varchar(n), int, float, date), constraints (not null, unique, primary key), • Create database, use database, show databases, drop database, show tables, • Create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table, insert, delete, select, operators (mathematical, relational and logical).
May	16	• 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.

Month	No. of Working Days	Topic
		Python Programming: • Revision of Python topics covered in Class XI.
June	11	• **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) .
July	23	**FileHandling:** 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.
Aug	22	**Binary file:** basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method, read, write/create, search, append and update operations in a binary file. **CSV file:** import csv module, open / close csv file, write into a csv file using csv.writer() and read from a csv file using csv.reader( )

Month	No. of Working Days	Topic
		Data Structure: Stack, operations on stack (push & pop), implementation of stack using list. **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	23	**Computer Networks** • Evolution of Networking. • Data Communication Terminologies • Transmission media • Network devices.
Oct	12	**Computer Networks** • Network Topologies and types • Network Protocol • Mobile Communication Technologies • Network security concepts • Introduction to web services
Nov	23	**Project Work :** The aim of the class project is to create tangible and useful IT application. The learner may identify a real-world problem by exploring the environment.
Dec	20	**Project Execution/Case studies :** Students can visit shops/business places, communities or other organizations in their localities and enquire about the functioning of the organization, and how data are generated, stored, and managed.
Jan	22	**Revision**
Feb	22	**Revision**

Month	No. of Working Days	Topic
April	21	**Revision of Class XI :** Programming Concept, List, Dictionary, NumPy.
May	16	**UNIT - 1 :** **Data Handling with Pandas (DH1) :** **Series :** Creation of Series from – ND-Array, Dictionary, Scalar value; Mathematical operations; Head and Tail functions; Selection, Indexing and Slicing.
June	11	**Data Frames :** Creation from - Text/CSV files; Display; Iteration; Operations on rows and columns: Add, Select, Delete, Rename; Head and Tail functions; Indexing using Labels, Boolean Indexing;
July	23	**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. **File Handling:** Importing/Exporting Data between CSV files and Data Frames.
Aug	22	**Unit 2: Database Query using SQL** **Revision of SQL of class XI :** Uses of Create, Constraint, Select, Where, Like, In, Between, Is, Not, **SQL Queries:** Select, Update, Alter, etc. **Math functions:** POWER (), ROUND (), MOD ().

Month	No. of Working Days	Topic
		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.
Sept	23	**Unit 3: Introduction to Computer Networks** Introduction to networks, Types of networks: LAN, MAN, WAN. **Network Devices:** modem, hub, switch, repeater, router, gateway Network Topologies: Star, Bus, Tree, Mesh. Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP. **Website:** Introduction, Difference between a website and webpage, Static v/s dynamic web page, web server and hosting of a website. **Web Browsers:** Introduction, Common browsers, Browser settings, Add-ons and Plug-ins, Cookies.

Month	No. of Working Days	Topic
Oct	12	**Unit 4: Societal Impacts** Digital footprint, Net and communication, Etiquettes, Data protection, Intellectual property rights (IPR), Plagiarism, Licensing and copyright, Free and open-source software (FOSS), Cybercrime and Cyber laws, Hacking, Phishing, Cyber bullying, Overview of Indian IT Act. **E-waste:** Hazards and Management. Awareness about health concerns related to the usage of technology.
Nov	23	**Project Work:** The aim of the class project is to create tangible and useful IT application. The learner may identify a real-world problem by exploring the environment.
Dec	20	**Project Execution/Case studies:** Students may visit shops/business places, communities or other organizations in their localities and enquire about the functioning of the organization, and how data are generated, stored, and managed.
Jan	22	**Revision**
Feb	22	**Revision**

Sub - Physical Health Education (048)

Months	No. of Working Days	Topics/Sub Topics
April	11	**Unit - 1** **PLANNING IN SPORTS :** ● Meaning and objectives of planning ● Various committees and their responsibilities (Pre, During and Post) ● Tournament- Knockout, League or Round robin and combination ● Procedure to draw fixture Knock-out (Bye and Seeding) and League (Staircase and Cyclic)
April	10	**Unit - 2** **SPORTS AND NUTRITION :** ● Balance diet and nutrition : Macro and Micro Nutrients ● Nutritive and Non-nutritive components of Diet ● Eating for weight control- a healthy weight, the pitfalls of dieting, food intolerance and food myths
May/ June	16+ 4	**Unit - 5** **CHILDREN AND WOMEN IN SPORTS :** ● Motor development and factors affecting it ● Exercise guidelines at different stage of growth and development ● Common postural deformities- Knock-knee, flat foot, round shoulders, lordosis, kyphosis, bow leg and scoliosis and their corrective measures ● Sports participation of women's in India

Months	No. of Working Days	Topics/Sub Topics
May/ June	16+ 4	**Unit - 6** **TEST AND MEASUREMENT IN SPORTS :** ● Motor fitness test- 50 M Standing Start,600 M run/walk, Sit and Reach, Partial Curl up, Push up (boys), Modified Pushups (girls), Standing Broad jump, Agility 4x10mt Shuttle run ● Measurement of Cardio Vascular Fitness-Harvard step test / Rockport test- Computation of fitness index : **5.5xPulse Count of 1.5Min after Exercise** ● **Rikili and Jones- senior citizen fitness test** 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

Months	No. of Working Days	Topics/Sub Topics
July	06	**Unit - 8** **BIOMECHANICS AND SPORTS :** ● Meaning and importance of Biomechanics in sports ● Types of movements (flexion, extension, abduction and adduction) ● Newton's law of motion and its application in sports.
July	18	**Unit - 3** **YOGA AND LIFE STYLE :** ● Asanas and preventive measures ● Obesity- procedure, benefits and contraindications for Vajrasana, Hasta asana, Trikonasana, Ardhmatse-yendrasana ● Diabetes- Procedure, Benefits and Contraindications for Bhujangasana, Paschimottasana,Pawanmuktasana, Ardhmatseyendrasana ● Asthma- Procedure, Benefits and Contraindications for such asana. Chakrasana, Gomukhasana, Parv-atsana, Bhujangasana, Paschim-ottasana, Matsyasana ● Hypertension: Taadasana, Vajrasana, Pavanmuktasana, Ardhchakrasana, Bhujanasana, Shavasana

Months	No. of Working Days	Topics/Sub Topics
Aug	22	**Unit - 4** **PHYSICAL EDUCATION AND SPORTS FOR CWSN (CHILDREN WITH SPECIAL NEEDS) :** ● Concept of Disability and Disorder ● Types of Disability, its causes and nature (Cognitive, Intellectual and Physical Disability) ● Types of disorder, its cause and nature (ADHD, SPD, ASD, ODD, OCD) ● Disability etiquettes ● Strategies to make physical activity assessable for children with special need
Sept	25	**Unit - 7** **PHYSIOLOGY AND INJURIES IN SPORTS :** ● Physiological factor determining com-ponent of physical fitness ● Effect of exercise on Cardio Respira-tory 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) Causes, Prevention and Treatment. ● First aid-Aims and Objectives

Months	No. of Working Days	Topics/Sub Topics
Oct	12	**Unit - 9** **SPSYCHOLOGY AND SPORTS :** ● Personality: Its definition- traits and types (Sheldon and Jung classification) and big five theory ● Motivation its types and techniques ● Meaning, concept and types of Aggression in sports
Nov	22	**Unit - 10** **TRAINING IN SPORTS:** ● Strength- Definition, Types and Methods of improving strength-Isometric, Isotonic and Isokinetic. ● Endurance- Definition, Types and Methods to develop Endurance-Continuous Training, Interval Training and Fartlek Training. ● Speed- Definition types and Methods to develop Speed- Acceleration and Pace run ● Flexibility - Definition types and Methods to improve Flexibility ● Coordinative Abilities - Definition and Types

Months	No. of Working Days	Units (Chapters and sub topics)
April		**National Income and Related Aggregates** ● 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** ● 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)** ● 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)
June/ July		**QUALIFYING EXAMINATION** **Economic Reforms since 1991** ● Need and main features- liberalization, privatization and globalization ● An appraisal of LPG Policy **Determination of Income and Employment** ● 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
Aug/ Sept		**Government Budget and The Economy** ● 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. **Balance of Payments and Foreign Exchange** ● 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

Months	No. of Working Days	Units (Chapters and sub topics)
		Rural Development ● Key Issues: credit and marketing: role of cooperatives, agricultural diversification; alternative farming- organic farming
Oct		**Human Capital Formation** ● How people become resource ● Role of human capital in economic development ● Growth of Education Sector in India **Employment** ● Formal and Informal ● Growth and other issues: problems and policies
Nov		**Sustainable Economic Development** ● Meaning ● Effects of economic development on resources and environment, including global warming **Development Experience of India : A comparison with neighbours** ● 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
April		• 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. **Note :** *Interest on partner's loan is to be treated as a charge against profit.* *Goodwill: meaning, factors affecting, need for valuation, methods for calculation (average profits, super profits and capitalization) , adjusted through partners capital/ current account or by raising and writing off goodwill (AS 26).*
May		**Accounting for Partnership Firms - Reconstitution Dissolution** • **Change in the Profit sharing Ratio among the existing partners -** sacrificing ratio, gaining ratio, accounting for revaluation of assets and reassessment of liabilities and treatment of reserves and accumulated profits. Preparation of Revaluation account and Balance Sheet.

Months	No. of Working Days	Chapter Content
		• **Admission of a partner :** effect of admission of a partner on change in the profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and re-assessment of liabilities, treatment of reserves, accumulated profits and losses, adjustment of capital accounts and preparation of capital, current account and balance sheet.
June/ July		• **Retirement and death of a partner:** effect of retirement / death of a partner on change in profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities, adjustment of accumulated profits, losses and reserves, adjustment of capital accounts and preparation of capital, current account and balance sheet. Preparation of loan account of the retiring partner. • Calculation of deceased partner's share of profit till the date of death. Preparation of deceased partner's capital account and his executor's account. • **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	Chapter Content
		Note: (i) If the realized value of tangible assets is not given it should be considered as realized at book value itself. (ii) If the realized value of intangible assets is not given it should be considered as nil (zero value). (iii) In case, the realization expenses are borne by a partner, clear indication should be given regarding the payment thereof.
Aug		**Unit-3 Accounting for Companies** **Accounting for Share Capital** ● Features and types of companies ● Share and share capital: nature and types. ● Accounting for share capital: issue and allotment of equity and preferences shares. Public subscription of shares - over subscription and under subscription of shares; issue at par and at premium, calls in advance and arrears (excluding interest), issue of shares for consideration other than cash. ● Concept of Private Placement and Employee Stock Option Plan (ESOP), Sweat Equity. ● Accounting treatment of forfeiture and re- issue of shares. ● Disclosure of share capital in the Balance Sheet of a company.

Months	No. of Working Days	Chapter Content
Sept		**Accounting for Debentures** ● Debentures: Meaning, types, Issue of debentures at par, at a premium and at a discount. Issue of debentures for consideration other than cash; Issue of debentures with terms of redemption; debentures as collateral security-concept, interest on debentures. Writing off discount / loss on issue of debentures. **Note:** Discount or loss on issue of debentures to be written off in the year debentures are allotted from Security Premium Reserve (if it exists) and then from Statement of Profit and Loss as Financial Cost (AS 16).
Oct		**Part B: Financial Statement Analysis** **Unit 4: Analysis of Financial Statements** **Financial statements of a Company:** Meaning, Nature, Uses and importance of financial Statement. Statement of Profit and Loss and Balance Sheet in prescribed form with major headings and sub headings (as per Schedule III to the Companies Act, 2013) **Note:** *Exceptional items, extraordinary items and profit (loss) from discontinued operations are excluded.* ● **Financial Statement Analysis:** Meaning, Significance Objectives, importance and limitations. ● **Tools for Financial Statement Analysis:** Cash flow analysis, ratio analysis.

Months	No. of Working Days	Chapter Content
		• **Accounting Ratios:** Meaning, Objectives, Advantages, classification and computation. • **Liquidity Ratios:** Current ratio and Quick ratio. • **Solvency Ratios:** Debt to Equity Ratio, Total Asset to Debt Ratio, Proprietary Ratio and Interest Coverage Ratio. Debt to Capital Employed Ratio. • **Activity Ratios:** Inventory Turnover Ratio, Trade Receivables Turnover Ratio, Trade Payables Turnover Ratio, Fixed Asset Turnover Ratio, Net Asset Turnover Ratio and Working Capital Turnover Ratio. • **Profitability Ratios:** Gross Profit Ratio, Operating Ratio, Operating Profit Ratio, Net Profit Ratio and Return on Investment. **Note:** Net Profit Ratio is to be calculated on the basis of profit before and after tax.
Nov		**Unit 5: Cash Flow Statement** • Meaning, objectives Benefits, Cash and Cash Equivalents, Classification of Activities and preparation (as per AS 3 (Revised) (Indirect Method only)

Months	No. of Working Days	Chapter
April	21	**Nature & Significance of Management** • Management - concept, objectives, and importance • Management as Science, Art and Profession • Levels of Management • Management functions-planning, organising, staffing, directing and controlling • Coordination- concept and importance **Principles of Management** • Principles of Management - Concept and significance • Fayol's Principles of Management • Taylor's Scientific Management - Principles and Techniques.
May	16	**Business Environment** • Business Environment : Concept and Importance. • Dimensions of Business Environment : Economic, Social, Technological, Political and Legal. • Demonetization - Concept and features **Marketing Management** • Marketing : Concept; Functions and Philosophies • Marketing Mix- Concept and Elements • Product - Branding, Labelling and Packaging Concept • Price - Concept, Factors determining price

Months	No. of Working Days	Chapter
		• Physical distribution - Concept, Components and channels of distribution • Promotion - Concept and elements; Advertising Personal selling , Sales Promotion and Public Relations.
June	12	**Qualifying Exam**
July	23	**Planning** • Planning : Concept, Importance and Limitations. • Planning process • Single use an standing plans : objectives strategy policy, procedure, method, Rule, Budget and Programme. **Organising** • Organising : Concept and Importance • Organising Process • Structure of Organisation - Functional and Divisional, Formal and Informal concept. • Delegation : concept, elements and importance. • Decentralisation: concept and Importance.
Aug	22	**Staffing** • Concept and Importance of Staffing • Staffingas a part of Human Resource Management concept • Staffing process • Recruitment Process • Selection Process

Months	No. of Working Days	Chapter
		• Training and Development - Concept and Importance, Methods of Training - on the job and off the job- vestibule Training, Apprenticeship Training and Intership Training. **Directing** • Concept and Importance • Elements of Directing • Motivation - concept, Maslow's hierarchy of needs, Financial and Non Financial incentives. • Leadership - concept, styles - authoritative, democratic and laissez faire. • Communication - concept, formal and informal communication; barriers to effective communication, how to overcome the barriers. **Controlling** • Controlling - Concept and importance • Relationship between planning and controlling. • Steps in process of control.
SEPT	9	**Financial Management** • Concept, role and objectives of Financial Management • Financial decisions: investment, financing and dividend- Meaning and factors affecting • Financial Planning - concept and importance **Half Yearly Exam**

Months	No. of Working Days	Chapter
OCT	12	• Capital Structure - concept and factors affecting capital structure • Fixed and Working Capital - Concept and factors affecting their requirements **Financial Market** • Financial Markets: Concept • Money Market Concept • Capital market and its types (primary and secondary) • Stock Exchange - Functions and trading procedure • Securities and Exchange Board of India (SEBI) - objectives and functions **Consumer Protection** • Concept and importance of consumer protection
NOV	15	• Consumer Protection Act 2019: source http://eqazette.nic.in/Write Read Data/2019/210422.pdf Meaning of consumer Rights and responsibilities of consumers Who can file a complaint? Redressal machinery Remedies available Consumer Awareness - Role of Consumer Organizations and Non-Government Organizations (NGOs)

Months	Theory/ Practical	Topics
April (22 days)	**Theory**	A brief introduction of Indian Miniature Painting and Schools :- **Pal, Jain & Central Indian Paintings**. Development of Indian Art. **The Rajasthani School of Miniature Painting :-** (1) Origin and Development, (2) Main features of the Rajasthani School, (3) Sub-Schools- Mewar, Bundi, Jodhpur, Bikaner, Kishangarh and Jaipur, (4) Study of different Rajasthani Paintings:- (a) Maru-Ragini by Sahibdin of Mewar, (b) Chaugan Players by Dana of Jodhpur, (c) Krishna on swing by Nuruddin of Bikaner, (d) Radha (Bani- Thani) by Nihal Chand of Kishangarh, (e) Bharat Meets Rama at Chitrakut by Guman of Jaipur.
	Practical	**Method and material of Painting.** Rendering painting, Still life with different draperies of different colours for background and foreground. **Subjects of composition:-** Still life in pencil shading and colour with light and shade from a fixed point of view, Decorative design, Pattern Making

Months	Theory/ Practical	Topics
		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.
May/ June (16 +05 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) Nand Yashoda and Krishna with Kinsmen going to Vrindavana by Nainsukh from Kangra **Fundamentals of Art and Shadanga of Indian Art**
	Practical	Portrait study with pencil shading & colour- ,composition with human figure. **Subjects of composition:-** Paper collage. Daily life, village life, one imaginative painting, animal figure, bird & flower(use pencil and pen). Presentation of Holiday works

Months	Theory/ Practical	Topics
July (24 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) Falcon on a Bird-Rest by Ustad Mansoor of Jahangir period, (c) Kabir and Raidas by Ustad Faquirullah Khan of Shahjahan period. (d) Marriage procession of Dara Shikoh by Haji Madni of Provincial Mughal (Avadh) period.
	Practical	Drawing method, Elements of Art,Design through modern concept, abstract painting, texture painting and Op art. **Subjects of composition:-** Painting, Affairs of family, friends and daily life; Affairs of family professionals; Bird and animal composition; Landscape painting with human figures.
Aug (23 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) Hazrat Nizamuddin Auliya and Amir Khusro of Hyderabad, (b) Chand Bibi Playing Polo (Chaugan) of Gol Konda.

Months	Theory/ Practical	Topics
		New Era in Indian Art. Contribution of Indian artists in the struggle for National Freedom Movement. **National Flag of India and Symbolic significance of its forms and the colour**.
	Practical	Project report writing.Painting in different medium, Mixed medium, Wax resistance technique. White on white technique, Monochrome painting. **Subjects of composition:-** Fresco/ Mural or Tempera/ any traditional process. Copy of any miniature painting with water colour, folk art of Jharkhand; Landscape with water colour,Human figure composition-Rainy Day, Park, Cultural event.
Sept (23 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) Radhika by M.A.R. Chughtai (d) Meghdoot by Ram Gopal Vijaivargiya
	Practical	Concept of modern art, Modern Art painting (acrylic colour or water colour), Canvas or Canvas board painting. Batik Tie and Dye .

Months	Theory/ Practical	Topics
		Subjects of painting composition:- Any festival, Colourful composition, Flowers with flower pot, Imaginative composition.
Oct (12 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 c) Mother and child by Jamini Roy d) Haldi Grinders by Amrita Sher-Gil e) Mother Teresa by M.F. Husain
	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 (24 days)	**Theory**	**Study of different Contemporary (Modern) Indian Graphics :-** (a) Children by Somnath Hore (b) Devi by Jyoti Bhatt (c) Of Walls by Anupam Sud (d) Man, Woman and Tree by K. Laxma Goud **Study of different Contemporary (Modern) Indian Sculptures:-** (a) Triumph of Labour by Devi Prasad Roy Chowdhury (b) Santhal Family by Ramkinker Baij (c) Cries Unheard by Amarnath Sehgal (d) Ganesha by P.V. Janakiram

Months	Theory/ Practical	Topics
	Practical	Colour composition in Acrylic and Water colour. Portfolio making technique. **Subjects ofpainting composition:-** Fantasy & dream, Any imaginative composition, Any games or Sports composition (indoor & outdoor).
Dec	**Theory**	**Revision of Theory and Exams**
(21 days)	**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	**Theory**	**Revision work and Theory Exams**
(22+ 23)	**Practical**	Practical Exams, Submission of complete Portfolio, 2 Practical Project Reports (Digital copies).
Materials and topics		**Materials required -** Pencil, eraser, shading pencil set, marker (thin and bold), artist oil pastel, artist water colour cakes (18 or 24), artist acrylic colour, big bowl, big colour palate, rough cloth, news paper, paper clip, hard board or

Months	Theory/ Practical	Topics
		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.
Examed for Practical		**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 years 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 (22 days)	**Theory**	A brief introduction of Indian Miniature Painting and Schools :- **Pal, Jain & Central Indian Paintings**. Development of Indian Art. The Rajasthani School of Miniature Painting: - (1) Origin and Development, (2) Main features of the Rajasthani School. (3) Sub-Schools- Mewar, Bundi, Jodhpur, Bikaner, Kishangarh and Jaipur. (4) Study of different Rajasthani Paintings:- (a) Maru-Ragini by Sahibdin of Mewar, (b) Chaugan Players by Dana of Jodhpur, (c) Krishna on swing by Nuruddin of Bikaner, (d) Radha (Bani- Thani) by Nihal Chand of Kishangarh, (e) Bharat Meets Rama at Chitrakut by Guman of Jaipur.
	Practical	Introduction of different Graphics medium and Serigraphy / Etching:- History, Method materials quality and safety. Relation between water and oil mediums. How Graphics (Print making) is different from other mediums. Why it is called Industrial art? How it developed with the Industrial growth? Object and Human figure Drawings. Creating layouts for Graphics using

Months	Theory/ Practical	Topics
		different lines, dots, circles, geometrical patterns and textures. **Serigraphy:-** The history of stencils and silk screen, Methods and materials. The use and maintenance of the squeeze. Sealing registration for colour work and preparation for printing. Use of water and oil mediums in printing technology. Oils & Solvents for cleaning, use and characteristics of printing inks. Print quality- no spot anywhere even backside of print, never retouch brush in print, print should be neat and clean. Writing Artists' Proof (A/P), medium, subject & name in print. Finishing mounting and the print. **Subjects of composition:-** Black & White imaginative composition using different textures. Use of different types of textures in composition, Affairs of family, friends and daily life; Affairs of family professionals; Flower vase, Decorative design, Pattern Making.
May/ June (16 +05 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) Nand Yashoda and Krishna with

Months	Theory/ Practical	Topics
		Kinsmen going to Vrindavana by Nainsukh from Kangra **Fundamentals of Art and Shadanga of Indian Art**
	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 (24 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) Falcon on a Bird-Rest by Ustad Mansoor of Jahangir period, (c) Kabir and Raidas by Ustad Faquirullah Khan of Shahjahan period. (d) Marriage procession of Dara Shikoh by Haji Madni of Provincial Mughal (Avadh) period.
	Practical	Printing using any two medium like- Serigraphy, Linocut, Wood cut, Colography, MDF, Paper-cardboard and Stencil works in monochrome. Pay

Months	Theory/ Practical	Topics
		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 (23 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) Hazrat Nizamuddin Auliya and Amir Khusro of Hyderabad, (b) Chand Bibi Playing Polo (Chaugan) of Gol Konda. **New Era in Indian Art.** Contribution of Indian artists in the struggle for 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.

Months	Theory/ Practical	Topics
		Subjects of composition:- Historical monuments; Folk and classical dances / theatres; Jharkhand folk art painting (Khobar & Sohrai); Madhubani and other folk arts.
Sept (25 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) Radhika by M.A.R. Chughtai (d) Meghdoot by Ram Gopal Vijaivargiya
	Practical	Serigraphy / Etching printing using multicolour and Black & White. Serigraphy by cool colours using Poster / Fabric colours. **Subjects of composition:-** Traditional / ancient sculpture and painting; Relevant social issues; Daily life; Village life; Urban life; Copy of any Graphic Artists' work
Oct (12 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) Mother and child by Jamini Roy c) Haldi Grinders by Amrita Sher-Gil d) Mother Teresa by M.F. Husain

Months	Theory/ Practical	Topics
	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.
Nov (24 days)	**Theory**	**Study of different Contemporary (Modern) Indian Graphics :-** (a) Children by Somnath Hore (b) Devi by Jyoti Bhatt (c) Of Walls by Anupam Sud (d) Man, Woman and Tree by K. Laxma Goud **Study of different Contemporary (Modern) Indian Sculptures:-** (a) Triumph of Labour by Devi Prasad Roy Chowdhury (b) Santhal Family by Ramkinker Baij (c) Cries Unheard by Amarnath Sehgal (d) Ganesha by P.V. Janakiram
	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	**Theory**	**Revision of Theory and Exams**
(21 days)	**Practical**	**Portfolio making** with 10 best seclected Graphics work- Finishing, mounting and file preparation, with record of the entire year's performance from sketch to finished Art work. Selected prints (either from Linocuts/ Woodcuts/ Paper-cardboard/ MDF/ Colography/ Serigraphy prints) for Portfolio. **Practical Project Report** Preparation on method, material, art works of entire year. (digital two copies).
Jan/Feb	**Theory**	**Revision work and Theory Exams**
(22 + 23	**Practical**	Practical Exams, Submission of Portfolio with selected 10 best prints, 2 Practical Project Reports (Digital copies).
Materials Required required Practical		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.

Months	Theory/ Practical	Topics
Practical Exam		**Practical Paper - I :** Layout making with black and white poster colour on given subject (original composition). Transforming layout on silk screen. **Practical Paper-II :-** Print Making process. Prints should be identical. All prints should be of good quality, neat and clean. In Practical Exam submit two identical prints along with layout on given topic. For extra prints use own papers. **Practical (Paper-III)-** Portfolio with selected 10 Prints, 2 Practical Project Reports (Digital copies) and Viva / Oral on Method material, Fundamentals of art, History of Art.

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Months	No. of Working Days	Name of the Chapter
April	22	**1. Introducing Indian Society (Non evaluative)** ● Colonialism ● Nationalism ●Class and Community **2. Demographic Structure and Indian Society** ● Theories and concepts in demography ● Rural - Urban Linkages and divisions **3. Social institutions : Continuity and change** ● Family and kinship ● The Caste System ● Tribal Society
May	22	**5. Pattern of Social Inequality and Exclusion** ● Caste, Prejudice, Scheduled castes and other Backward Classes ● Marginalisation of Tribal Communities ● The struggle for women's equality ● The struggle of the Differently Able
June	16	**6. Challenges of Cultural Diversity** ● Cultural Communities and the Nation State ● Problems of communalism, Regionalism and casteism ● The Nation State, religion related issues, and identities ● Communalism, Secularism and the Nation State. ● State and Civil Society

Months	No. of Working Days	Name of the Chapter
July	24	**7. Suggestions for Project Work (Non Evaluative)** **Changes and Development in Indian Society** **8. Structural Change** ● Colonialism ● Industrialisation ● Urbanisation **9. Cultural Change** ● Modernisation ● Westernisation ● Sanskritisation ● Secularisation ● Social Reform Movements and Laws
Aug	23	**11. Changes and Development in Rural Indian Society** ● Land Reforms, Green Revolution and Emerging Agrarian Society ● Agrarian Structure : Caste and Class in Rural India ● Land Reforms ● Green Revolution and its social consequences ● Transformation in Rural Society. ● Globalisation, Liberalisation and Rural Society
Sept	23	**12. Changes and Development in Industrial Society** ● From planned Industrialisation to Liberalisation. ● Getting a job ● Work Processes

Months	No. of Working Days	Name of the Chapter
Oct	**12**	**15. Social Movements** ● Theories and Classification of Social Movements ● Class based movements ; workers and peasants. ● Caste based movements : Dalit movements Backward caste movement ● Castes,Trends in Upper Caste Reformers ● Women's Movement in Independent India ● Tribal Movements ● Environmental Movements **Revision**

Months	No. of Working Days	Unit / Chapter / Topics
April		The Bhakti Sufi Tradition Broad overview a) Outline of religious developments during this period of saints. b) Ideas and practices of the Bhakti -Sufi 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.
April	**21**	**Part-I 1. The Story of the First Cities:** Harappan Archaeology Broad overview: Early urban centers Story of discovery: Harappan civilization Excerpt: Archaeological report on a major site Discussion: How it has been utilized by archaeologists / historians. ● Familiarize the learner with early urban centers as economic and social institution. ● Introduce the ways in which new data can lead to a revision of existing notions of history ● Illustrate steps of making archaeologists/ historians at the completion of this unit students will be able to:

Months	No. of Working Days	Unit / Chapter / Topics
		• State and deduce the multi-lateral aspects of Harappan civilization in order to understand the first civilization of the world. • Develop an ability to use and analyze socio- economic, political aspects of Harappa. • Investigate and interpret multiple historical and contemporary sources and viewpoints of ASI and historians on Harappa. 2. 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: Ashokan inscription and Gupta period land grant Discussion: Interpretation of inscriptions by historians. • Familiarize the learner with major trends in the political and economic history of the subcontinent. • Introduce inscriptional analysis and the ways in which these have shaped the understanding of political and economic processes. At the completion of this unit students will be able to:

Months	No. of Working Days	Unit / Chapter / Topics
		• Explain major trends in the 6th century BCE in order to understand the political and economic history of the subcontinent. • Analyze inscriptional evidences and the ways in which these have shaped the understanding of political and economic processes.
May	**16**	**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..
May		**History of Buddhism:** **Sanchi Stupa Broad overview :** a) A brief review of religious histories of Vedic religion, Jainism, Vaishnavism, Shaivism (Puranic Hinduism) b) Focus on Buddhism. Story of discovery: Sanchi stupa. Excerpt: Re-production of sculptures from Sanchi. Discussion: Ways in which sculpture has been interpreted by historians, other sources for reconstructing the history of Buddhism.

Months	No. of Working Days	Unit / Chapter / Topics
July	**24**	**Part-II -** Medieval Society through Travellers' Accounts Broad Overview: outlines of social and cultural life as they appear in traveller's account. Story of their writings: A discussion of where they travelled, what they wrote and for whom they wrote. **Agrarian Relations :** The Ain-i-Akbari Broad overview : a) Structure of agrarian relations in the 16th and 17th centuries. b) Patterns of change over the period.
August	**22**	New Architecture: Hampi broad over view: a) Outline of new buildings during Vijayanagar period-temples, forts, irrigation facilities. b) Relationship between architecture and the political system. **Part III -** 10.Colonialism and Rural Society: Evidence from Official Reports Broad overview: a) Life of zamindars, peasants and artisans in the late18th century. b) East India Company, revenue settlements in various regions of India and surveys Changes over the nineteenth century. 11. Representations of 1857 Broad overview: a) The events of 1857-58. b) Vision of Unity c) How these events were recorded and narrated.

Months	No. of Working Days	Unit / Chapter / Topics
Sept.	**25**	**Revision** **Half Yearly Examination**
Oct	**12**	13. Mahatma Gandhi through Contemporary Eyes Broad overview: a) The Nationalist Movement 1918 -48. b) The nature of Gandhi an politics and leadership.
Nov	**22**	15. The Making of the Constitution an overview: a) Independence and then new nation state. b) The making of the Constitution
Dec	**20**	**Revision**
Jan	**22**	**Revision**

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 it's 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	21	**Challenges of Nation - Building** Nehru's approach to nation-building; Legacy of partition : challenge of 'refugee' resettlement, the Kashmir problem. **The End of Bipolarity** New entities in world politics: Russia, Balkan states and Central Asian states. Introduction of democratic politics and capitalism in post-communist regimes. India's relations with Russia and other post-communist countries.
May	16	**Planned Development** Changing nature of India's Economic Development Planning Commission and Five Year Plans, National Development Council, NITI Aayog.
June	11	**New Centres of Power Organizations:** European Union, ASEAN, SAARC, BRICS. Nations: Russia, China, Israel, India, Japan and South Korea. **Discussion about Project work and synopsis making**
July	24	**India's Foreign Policy** Principles of Foreign Policy; India's Changing Relations with Other Nations: US, Russia, China, Israel; India's Relations with its Neighbours: Pakistan, Bangladesh, Bhutan, Nepal, Sri Lanka and Myanmar; India's Nuclear Programme. **Contemporary South Asia** Conflicts and efforts for Peace Democratization in South Asia: Pakistan, Nepal, Bangladesh, Sri Lanka, Maldives.
Aug	22	**United Nations and its Organizations** Principal Organs, Key Agencies: UNESCO, UNICEF, WHO, ILO, Security Council and the Need for its Expansion. **Security in Contemporary World Security:** Meaning and Type; Terrorism.

Month	Working Days	Topics
Sept	23	**Parties and Party System in India One** Party Dominance, Bi-Party System, Multi-Party Coalition System. **Half Yearly Examination**
Oct	12	**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	22	**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		**Pre Boards**

2) Project Work : 20 Marks

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

Months	Period	Topics
April		Elementary knowledge about the three styles of Chhau: Mayurbhanj, Seraikella andPurulia. Brief notes on the lives and contribution of the three Gurus: Guru Pankaj Charan Das, Guru Kelucharan Mohapatra and Guru Deba Prasad Das.
May		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 eachtext.
July		Basic understanding of the term ABHINAYA and definition of its four aspects: angika, vachika, aharya andsattvik.
Aug		Rasa: Definition and short explanation of the ninerasas.
Sept		Short noteson: a) The Aharya ofOdissi. b) The music accompaniment ofOdissi.
Oct		Brief explnation of the following terms: (Unit IV ClassXI) a) Nritta, Nritya andNatya b) Matra, Laya, Taal, Avartana, Vibhaga(Anga) c) Tandava and Lasya d) Natyadharmi andLokdharmi.

Months	Period	Topics
Nov		Write some names of Folk Dances of Odisha.
Practical		
Dec		Learning and practice of onePallavi: a) Definition of the term Pallavi. b) Demonstration of theitem. c) Recitation of the ukutas of the item withhands. d) Identification of the Raga, Taal and the Choreographer of theitem. e) Identification of the hastas and the bhangis used in theitem.
Jan		Ability to show different Paad bhedas andbramaris.
Feb		Practice of Patak Hasta Mudra Viniyog acc to AbhinayaDarpan

Sub - Hindustani Music Vocal (Code No. 034)

Months	No. of Periods	Practical Topic	Theory Topics
April	6	Raag Bhairav (Drutkhyal)	Brief study of the following :- Alankar, Alap, Tana, Meend, Gamak
		Taan of Raag Bhairav Vilambit Khyal in Raag Bhairav (Astayi)	Historical development of Time Theory of Ragas
May	2	Vilambit khyal in Raag Bhairav (Antara)	Description of prescribed talas along with tala notation with thah, dugun and chaugun-jhaptala, Rupak
June	2	Raag Bageshri (Drutkhyal)	● Critical study and writing notation of Raga Bageshri ● Description of Dhamar tala with tala notation
July	4	Taan of Raag Bageshri Taan in Vilambit Khyal	Details study of Sangeet Ratnakar
Aug	4	Raag Malkouns (Drutkhyal)	Brief study of the following :- Gram, Murchhana, Kan, Khatka, Murki
Sept	4	Taan in Raag Malkouns Tarana in Raga Malkouns	● Details study of Sangeet Parijat ● Knowledge of tuning of the Tanpura

Months	No. of Periods	Practical Topic	Theory Topics
Oct	3	Dhamar in Raag Malkouns (asthai)	Life sketch and contribution to music of - Faiyaz kha, Bade Gulam Ali Kha, Krishna Rao Shankar Pandit
Nov	2	Dhamar in Raag Malkouns (antara)	**Revision of term 1 syllabus and Practice file**
Dec	-	**Revision**	**Term 1 Exam**
Jan	-	**Revision of term 2 syllabus**	**Revision of term 2 syllabus**
Feb	-	**Revision & Pre Term**	**Revision & Pre Term**

Sub - Entrepreneurship

Months	No. of Working Days	Unit / Chapter / Topics
Mar &		Unit I : Entrepreneurial Opportunity Sensing entrepreneurial opportunities, Environment Scanning, Problem Identification, Idea fields, Spotting Trends, Creativity and Innovation, Selecting the right Opportunity.
May		Unit II : Entrepreneurial Planning Forms of Business organisation - Sole Proprietorship, Partnership, Company. Business Plan : Concept, Format : Components : Organisational Plan; Operational Plan; Production Plan; Financial Plan; Human Resource Planning.
June		**Mid - Term Examinations**
July		Unit III : Enterprise Marketing : Marketing and Sales Strategies. Branding, Logo, Tagline; Promotion Strategy, Pricing Strategy, Physical Distribution
Aug		Unit V : Business Arithmetic Unit of Sale, Unit Cost for multiple products or services; Breakeven Analysis for multiple products or services;
Sept		**Revision for Hlaf - Yearly** **Half Yearly Examinations** Continuation of Unit : V Computation of working capital, Inventory Control and EOQ, ROI and ROE

Months	No. of Working Days	Unit / Chapter / Topics
Oct		Unit IV : Enterprise Growth Strategies Franchising : Concept, types, advantages and limitations; Mergers and Acquisitions : Concept, reasons, types. Puja Vacation; Project work and Assignment
Nov		Unit VI : Resource Mobilisation : Capital Market - Primary : Angel Investor - Features Venture Capital - Features and Funding
Dec		**Revision, Project Work** **Pre Board Examinations**

Subject - Legal Studies

Units		Marks
1	Judiciary	10
2	Topics in Law	20
3	Arbitration, Tribunal Adjudication and Alternate Dispute Resolution	10
4	Human Rights in India	10
5	Legal Profession in India	10
6	Legal Services	10
7	International Context	10
	Total	**80**
	Project Work	**20**

Months	No. of Working Days	Unit / Chapter / Topics
April	21	**Unit 1 : Judiciary** ● Structure and Hierarchy of Courts and Legal Offices in India ● Constitution, Roles and Impartiality ● Appointments, Trainings, Retirement and Removal of Judges ● Courts and Judicial Review
		Continuation to April **Unit 2 : Topics in Law** ● Law of Property ● Law of Contracts ● Law of Torts ● Introduction to Criminal Laws in India ● Administrative Law

Months	No. of Working Days	Unit / Chapter / Topics
May+ June	16+04	**Unit 3 : Arbitration, Tribunal Adjudication and Alternate Dispute Resolution** ● Adversarial and Inquisitorial Systems ● Introduction to Alternative Dispute Resolution ● Types of ADR ● Arbitration, Administrative Tribunals ● Mediation and Conciliation ● Lok Adalats ● Ombudsman ● Lokpal and Lokayukta
July	24	**Unit 4 : Human Rights in India** ● Introduction - History and International Context ● Constitutional framework and Related laws in India ● Complaint Mechanisms of Quasi-judicial Bodies
Aug	22	**Unit 5 : Legal Profession in India** ● History of Legal profession in India ● Classification of lawyers: Roles and Functions, The Advocates Act, 1961, The Bar Council of India, Lawyers and Professional Ethics, Advertising by Lawyers ● Opportunities for Law graduates, Legal Education in India, Liberalization of the Legal Profession, Women and the Legal Profession in India. ● Legal Profession in other jurisdictions

Months	No. of Working Days	Unit / Chapter / Topics
Sept	25	**Unit 6 : Legal Services** ● Introduction ● Brief History of legal services ● Legal background - Free Legal Aid under International law, The Indian legal system, Free Legal Aid under Criminal law, Legal Aid by the State, Legal Aid under the Indian Constitution, NALSA Regulations, 2010 ● Criteria for giving free Legal Services ● Hierarchy of Legal Aid Service Authorities - The Central Authority, The State Authority, The District Authority and Taluk Legal Services Committee ● Lok Adalats ● Legal Aid in Context of Social Justice and Human Rights ● Funding
Oct+ Nov	12+22	**Unit 7 : International Context** ● Introduction to International Law ● Sources of International Law - Treaties, Customs and ICJ Decisions ● International Institutions ● International Human Rights ● Customary International Law ● International law & Municipal Law ● International Law & India ● Dispute Resolution - ICJ, ICC and Other Dispute Resolution Mechanisms
Nov+ Dec		**Pre Boards**