SYLLABUS - 2022 - 2023

Class - XI **Sub - English**

Prescribed Books :

1) Hornbill - Text Book published by NCERT
2) Snapshots - Supplementary Reader published by NCERT

Months	No. of Working Days	Book / Area	Unit / Chapter
June	04	**Hornbill -**	1) The Portrait of a Lady
July	24	**Reading**	Note Making
		Hornbill -	1) A Photograph (Poem)
			2) We are not afraid ..... together.
		Snapshots-	1) The Summer of a beautiful white Horse.
		Grammar -	1) Tenses
		Writing -	1) Poster
Aug	22	**Hornbill -**	1) Laburnum Top (Poem)
			2) Discovering Tut : The Saga Continues
		Snapshots-	1) The Address
		Writing -	1) Speech Writing
			2) Debate Writing
Sept.	25		**Revision + ASL**
		Hornbill -	1) The voice of the Rain
		Writing -	1) Classified Advertisements
Oct.	12	**Snapshots-**	1) Mother's Day (Play)
		Hornbill -	1) Childhood (Poem)

Months	No. of Working Days	Book / Area	Unit / Chapter
Nov.	22	**Hornbill -**	1) The Adventure
			2) Father to Son
		Grammar	1) Clauses
Dec.	20	**Hornbill -**	1) Silk Road
		Snapshots-	1) Birth
		Grammar	1) Sentence Re-ordering & Sentence Transformation
Jan.	22	**Snapshots-**	1) The Tale of Melon City (Poem)
		Writing -	1) Revision of Writing & Grammar
			Revision
Feb	23	**Writing** -	**ASL / Project** **Revision**

Subject - Mathematics

Month wise Description of the Content :

Months	No. of Working Days	Content Description
June	04	**Set Theory** Sets and their representation, Empty set, Finite and Infinite set, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set, Venn-Diagrams. Union and Intersection of sets. Difference of sets, Complement of a set, Properties of complement.
July	**24**	**Relations and Functions** Ordered Pairs, Cartesian Product of set, Number of elements in the Cartesian Product of two Finite sets, Cartesian Product of the set of real numbers with itself (up to R X R X R), Definition of Relation, Pictorial Diagrams, Domain, Co-domain, and Range of a function, Real valued Functions, Domain and Range of these Functions, Constant, Identity, Polynomial, Rational, Modulus, Signum, Exponential, Logarithmic and Greatest Integer Function with their Graphs, Sum, Difference, Product and Quotient of functions. **Trigonometric Functions** Positive and Negative angles, Measuring angles in Radians and in Degrees and conversion from one measure to another. Definition of Trigonometric functions with the help of unit circle, Truth of the identity $Sin^2x + Cos^2x = 1$, for all x. Signs of Trigonometric functions, Domain and Range of Trigonometric

Months	No. of Working Days	Content Description
		functions and their graphs. Expressing Trigonometric ratios for Compound angles, Multiple Angles, Sub multiple angles, Transformation formulae from sum to product form as well as product form to sum form with deductions.
Aug	**22**	**Complex Numbers and Quadratic Equations** Need for complex numbers to be motivated by inability to solve some of the quadratic equations, Algebraic Properties of complex numbers, Argand Plane and **Linear Inequalities** Algebraic Solutions of Linear Inequalities in one variable and their representation on the number line. **Permutations** Fundamental Principal of Counting. Factorial n. Permutations, Derivation of formula and their connections and Simple applications.
Sept.	**25**	**Revision** **Half Yearly Examination** **Combinations** Combination, derivation of formula and their connections and simple applications.
Oct	**12**	**Binomial Theorem** History perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's Triangle, Simple applications.

Months	No. of Working Days	Content Description
		Sequence and Series AP, AM, GP, General term of a G.P. Sum of n terms of a G.P. infinite G.P. and its sum, G.M. Relation between AM and GM.
Nov	22	**Straight Lines :** Slope of a line and angle between two lines, various forms of equations of a line; parallel to axis, point and slope form, slope-intercept form, two point or intercept form and normal form. General equation of a line. Distance of a point from a line. **Conic Section** **Circle :** Standard equation of circle, circle centered at origin and radius r, circle centered at a point other than the origin and a radius r, circle with extremities of a diameter, general form of the circle. Some standard result related with the circle. **Parabola, Ellipse, Hyperbola :** A pair of intersecting lines as a degenerated case of a conic section, Standard equations and simple properties of parabola, ellipse and hyperbola. **Three Dimensional Coordinate Geometry :** Coordinate axes and coordinate planes in three dimensions. Coordinates of point Distance between two points and

Months	No. of Working Days	Content Description
Dec	20	**Limits and Derivatives** Derivative introduced as rate of change both as that of distance function and Geometrically intuitive idea of limit. Limits of Polynomials and rational functions, trigonometric, exponential and logarithmic functions. Definition of derivative relate it to scope of tangent of the curve, Derivative of sum, difference, product and quotient of functions. Derivative of Polynomial and Trigonometric functions.
Jan	22	**Statistics** **Measures of dispersion :** Range, Mean deviation variance and standard deviation of ungrouped / grouped data. **Probability** Random experiments, outcomes, Sample spaces, events, occurrence of events, 'not', 'and, and or Events, Exhaustive events, Mutually exclusive events, Axiomatic probability. Probability of an event, probability of 'not', 'and' or events.
Feb.	23	**Revision** **Annual Examination**

1. List of Mathematics Activities before the Half Yearly Examination.

i) To find the number of subsets of a given set and verity that if a set has 'n' number of elements then the total number of subsets is 2n.

ii) To find the values of the sine and cosine functions in second, third and fourth quadrant using their values in first quadrant.

iii) To plot the graph of $Sin\, x$, $Sin\, 2x$, $2Sin\, x$ and $Sin\, (x/2)$ in the same cartesian plane.

iv) To interpret geometrically $i = \sqrt{-1}$ and its integral powers.

v) To obtain a quadratic function graphically with the help of linear functions.

2. List of Maths Activities Post - Half Yearly Examination

vi) To distinguish between a relation and a function.

vii) To verify for two sets A and B, $n(A \times B) = n(A) \times n(B)$ and the total number of relations from A to B is $2^{n(A) \times n(B)}$.

viii) To construct different types of conic sections.

ix) To find analytically the Limit of the function $f(x) = \frac{x^n - a^n}{x - a}$ at the point $x = a$.

x) Verification of the geometrical significance of derivantives.

Theory Paper	:	Full Marks 80
Practical Paper	:	Full Marks 20
Total Marks		**100**

Months	No. of Working Days	Topics
June	**04**	**Ch-1 : Physical World Physics** Scope and excitement; nature of physical laws; Physics, technology and society. (To be discussed as a part of introduction and integrated with other topics).
July	**24**	**Ch-2 : Units and Measurements Need for measurement :** Units of measurement; systems of units, S.I. units, fundamental and derived units ; significant figures. Dimensions of physical quantities, dimensional analysis and applications. **Ch-3 : Motion in a Straight Line :** Elementary concepts of differentiation and integration for describing motion, Frame of reference, Motion in a straight line: Position-time graph, uniform and nonuniform motion, average speed and instantaneous velocity, uniformly accelerated motion, velocity-time and position-time graph, Relations for uniformly accelerated motion (graphical treatment).
Aug	**22**	**Ch-4 : Motion in a Plane :** Scalars and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of a vector by a real number; addition and subtraction of vectors, unit vector; Resolution of a vector in a plane, rectangular components, Scalar and Vector products of vectors. Motion in a plane, Cases of uniform velocity and uniform accelerated-projectile motion, Uniform circular motion.

Months	No. of Working Days	Topics to be Covered
		Ch-5 : Laws of Motion Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; Impulse; Newton's third law of motion. (Recapitulation only) Law of conservation of linear momentum and it's applications. Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion : Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).
Sept	**25**	**Revision and Half Yearly Exam** **Ch-6 : Work, Energy and Power** Work done by a constant force and variable force; kinetic energy, work-energy theorem, Power. Notion of Potential Energy, Potential Energy of a spring, conservative forces; - conservation of Mechanical energy (kinetic and potential energies); non-conservative forces: motion in a vertical circle; Elastic and inelastic collisions in one and two dimensions.
Oct	**12**	**Ch-7 : System of particles and Rotational Motion :** Centre of mass of a two particle system, momentum conservation and Centre of Mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod. /Moment of a force, Torque, Angular momentum, law of conservation of angular momentum and

Months	No. of Working Days	Topics to be Covered
		applications. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).
Nov	**22**	**Ch-8 : Gravitation** Kepler's laws of planetary motion, Universal law of gravitation, Acceleration due to gravity (recapitulation only) and its variation with altitude and depth. Gravitational potential energy and Gravitational potential, Escape velocity, Orbital velocity of a satellite. **Ch-9 : Mechanical Properties of Solids:** Stress-strain relationship, Hooke's law, Young's Modulus, Bulk Modulus, Shear Modulus of rigidity, Poission's Ratio; Elastic Energy, **Ch-10 : Mechanical Properties of Fluids:** Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure/ Viscosity, Stoke's law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its applications.

Months	No. of Working Days	Topics
Dec	**20**	**Ch-10 : Mechanical Properties of Fluids:** Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise. **Ch-11 : Thermal Properties of Matter :** Heat, temperature (recapitulation only) thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - Calorimetry; change of state - latent heat capacity. /Heat transfer-conduction, convection and radiation (recapitulation only), Thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law. **Ch-12 : Thermodynamics.** Thermal equilibrium and definition of temperature (Zeroth law of thermodynamics), Heat, work and internal energy. First law of thermodynamics, Isothermal and Adiabatic processes. Second law of thermodynamics: Reversible and irreversible processes.
Jan	**22**	**Ch-13 : Kinetic Theory of Gases** Kinetic theory of gases, assumptions, Equation of state of a perfect gas,concept of pressure. Kinetic interpretation of temperature, rms speed of gas molecules; degrees of freedom, law of equipartition of energy (statement only) and appplication to specific heat capacities of Avogadro number.

Months	No. of Working Days	Topics
		Ch-14 : Oscillations : Periodic motion- time period, frequency, displacement as a function of time, periodic functions. Simple Harmonic Motion (S.H.M.) and its equation; phase; Oscillations of a spring- restoring force and force constant; energy in S.H.M., Kinetic and Potential energies; simple pendulum derivation of expression for its time period. **Ch-15 : Wave motion -** Transverse and longitudinal waves, speed of travelling wave, Displacement relation for a progressive wave. Principle of superposition of waves, Reflection of waves, standing waves in strings and organ pipes, Beats.
Feb.	**23**	**Revision for Annual Examination**

Sub - Physics (Practicals)

Month	Experiments
June/	1. To measure the internal diameter and depth of a given breaker / Calorimeter using vernier callipers and hence find its volume. 2. To measure the diameter of a given wire using a screw gauge. 3. To measure the thickness of a given sheet using a screw gauge. 4. To measure the radius of curvature of a given spherical surface by a spherometer. 5. To determine the mass of two different objects using a beam balance. 6. To find the weight of a given body using parallelogram law of vectors. 7. Using simple pendulum, plot L-T and L-T^2 graphs. Hence find the effective length of a second's pendulum using appropriate graph.
Sept./	8. To study the relationship between force of limiting friction and normal reaction and to find the coefficient of friction between a block and a horizontal surface. 9. To find the force constant of a helical spring by plotting a graph between load and extension. 10. To study the relationship between temperature of a hot body and time by plotting a cooling curve. 11. To determine the surface tension of water by the capillary rise method. 12. To determine the coefficient of viscosity of a given viscous liquid by measuring the terminal velocity of a given spherical body. 13. To study the relation between frequency and length of a given wire under constant tension using sonometer. 14. To study the relation between length of a given wire and tension for constant frequency using sonometer. 15. To find the speed of sound in air at room temperature using a resonance tube by two resonance positions.

Sub - Chemistry

Months	No. of Working Days	Topics
June	**04**	**Some Basic Concepts of Chemistry :** General Introduction : Importance & scope of Chemistry. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical & molecular formula. Chemical reactions, stoichiometry and calculations based on stoichiometry.
July	**24**	**Structure of Atom :** Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals-Aufbau Principle, Pauli's exclusion principle and Hund's rule, Electronic Configuration of atoms, stability of half-filled and completely filled orbitals. **Classification of Elements and Periodicity in Properties :** Modern periodic law and the present form of periodic table, periodic trends in properties of elements- atomic radii, ionic radii, inert gas radii, lonization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.
Aug	**22**	**Chemical Bonding and Molecular Structure:** Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar

Months	No. of Working Days	Topics
		character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), Hydrogen bond.
Sept	**25**	**Revision and Half Yearly Examination** **Organic Chemistry : Some basic Principles and Techniques :** General introduction, classification and IUPAC nomenclature of organic compounds, Electronic displacement in a covalent bond : Inductive effect, electromeric effect, resonance & hyper conjugation.
Oct	**12**	**Organic Chemistry :** Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions. **Hydrocarbons : -** Classification of Hydrocarbons Aliphatic Hydrocarbons : Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions. **Alkenes -** Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides

Months	No. of Working Days	Topics
		(Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition. **Alkynes -** Nomenclature, Structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, alkynes, addition reaction of - hydrogen halogens, hydrogen halides and water.
Nov	**22**	**Aromatic Hydrocarbons :** Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of functional group in monosubstituted benzene. Carcinogenicity and toxicity.
Dec	**20**	**Chemical Thermodynamics :** Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics - internal energy and enthalpy, measurement of ΔU and ΔH , Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction) introduction of entropy as a state function, Gibb's energy change for spontaneous and nonspontaneous processes. Third law of thermodynamics (brief introduction).

Months	No. of Working Days	Topics
		Equilibrium : Equilibrium in physical & chemical processes, Dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting, equilibrium-Le Chatelier's principle, ionic equilibrium ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, buffer solution, solubility product, common ion effect (with illustrative examples).
Jan	**22**	**Redox Reactions :** Concept of oxidation & reduction, redox reactions, oxidation number, balancing redox reactions in terms of loss and gain of electrons and change in oxidation number, application of redox reactions.
Feb	**23**	**Revision and Annual Examination**

Subject - Biology

Months	Unit	No. of Working Days	Topics / Chapters
June	I	**04**	**DIVERSITY IN LIVING ORGANISMS** **Ch. 1. The Living World** What is living ? Biodiversity; Need for classification; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature.
July	I&II	**24**	**Ch. 2. Biological Classification** Five Kingdom Classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids. **Ch. 3. Plant Kingdom** Salient features and classification of plants into major groups - Algae, Bryophyta, Pteridophyta, Gymnos-permae. **4. Animal Kingdom** Basis of Classification; Salient features and classification of animals, non-chordates upto phyla level and chordates up to class level (salient features and distinguishing features of a few examples of each category). **STRUCTURAL ORGANISATION IN PLANTS & ANIMALS** **Ch. 5. Morphology of Flowering Plants** Morphology and modifications; Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of families: Fabaceae, Solanaceae.

Months	Unit	No. of Working Days	Topics / Chapters
Aug.	II&III	**22**	**Ch. 6. Anatomy of Flowering Plants** Anatomy and functions of different tissues and tissue systems in dicots and monocots. **Ch.7. Structural Organisation in Animals** Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog. **Cell : Structure and Function** **Ch. 8. Cell : The Unit of Life** Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system- endoplasmic reticulum, ribosomes, golgi bodies, lysosomes, vacuoles; mitochondria, plastids, microbdodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus. **Ch. 10. Cell Cycle and Cell Division** Cell Cycle, mitosis, meiosis and their significance
Sept		**25**	**REVISION &** **HALF YEARLY EXAMINATION**

Months	Unit	No. of Working Days	Topics / Chapters
Oct.	III	**12**	**Ch. 9. Biomolecules** Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; Enzymes - types, properties, enzyme action, factors, classification, Co-factors.
Nov.	IV&V	**22**	**Plant Physiology** **Ch. 13. Photosynthesis in Higher Plants** Photosynthesis as a means of autotrophic nutrition; early experiments, site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis. **Ch. 14. Respiration in Plants** Exchange of gases; do plants breathe; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

Months	Unit	No. of Working Days	Topics / Chapters
			Ch. 15. Plant - Growth and Development Seed germination; characteristics, measurements and phases of plant growht, growth rate; conditions for growth; differentation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.
Dec.	**IV& V**	**20**	**Human Physiology** **Ch. 17. Breathing and Exchange of Gases** Introduction to respiratory organs in animals; Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volumes; disorders related to respiration - asthma, emphysema, occupational respiratory disorders. **Ch. 18. Body Fluids and Circulation** Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; circulatory pathways; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure.

Months	Unit	No. of Working Days	Topics / Chapters
			Ch. 19. Excretory Products and their Elimination Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system - structure and function; urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH, diabetes inspipidus; micturition; role of other organs in excretion; disorders - uremia, renal failure, renal calculi, nephrities; dialysis and artificial kidney, kidney transplant.
Jan	V	**22**	**Ch. 20. Locomotion and Movement** Types of movement - amoeboid, ciliary, flagellar, muscular; types of muscles; skeletal muscle, contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems- myasthenia g ravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout. **Ch. 21. Neural Control and Coordination** Neuron and nerves; Nervous system in humans - central nervous system and peripheral nervous system; generation, conduction and transmission of nerve impulse.

Months	Unit	No. of Working Days	Topics / Chapters
			Ch. 22. Chemical Coordination and Integration Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, thymus, adrenal, pancreas, gonads; hormones of heart, kidney and gastrointestinal tract; mechansim of hormone action (elementary idea); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goiter, diabetes, Addision's disease.
Feb.		**23**	**REVISION & ANNUAL EXAMINATION**

PRACTICALS

TERM - I

1. Study and description of three locally available common flowering plants, one from each of the families Solanaceae, Fabacceae and including dissection and display of floral whorls, anther and ovary to show number of chambers (floral formulae and floral diagrams). Types of root (Tap and adventitious); types of stem (herbaceous and woody); leaf (arrangement, shape, venation, simple and compound).
2. Preparation and study of T.S. of dicot and monocot roots and stems (primary).

3. Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.
4. Parts of a compound microscope.
5. Specimens / slides / models and identification with reasons - Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.
6. Virtual specimens / slides / models and identification features of - Amoeba, Hydra, liverfluke, Ascaris, leech, earthworm, prawn, silkworm, honeybee, snail, stgarfish, shark, rohu, frog, lizard, pigeon and rabbit.

TERM - II

1. Study of plasmolysis in epidermal peels (e.g. Rhoeo/lily leaves or flashy scale leaves of onion bulb).
2. Study of distribution of stomata in the upper and lower surface of leaves.
3. Test for presence of urea in urine.
4. Test for presence of sugar in urine.
5. Test for presence of albumin in urine.
6. Test for presence of bile salts in urine.
7. Tissues and diversity in shape and size of plant cells (palisade cells, guard cells, parenchyma, collenchyma, sclerenchyma, xylem and phooem) through temporary and permanent slides.

SUB - ECONOMICS

Months	No. of Working Days	Unit / Topics
June/ July	**11+23 34 Days**	**STATISTICS** **Unit -1- Introduction** **Topic :** What is economics, meaning scope and importance of Statistics in economics. **Unit -2- Collection, Organisation and Presentation of data** **Topics : Collection of data -** Sources of Data, Methods of collecting data, Census and NSSO. **Topics :** Organisation of data : meaning and types of variables, frequency distribution. **Unit -2-** Topics : Presentation of data : tabular and diagrammatic presentation of data (bar diagrams, pie, diagrams, polygon and ogive, time series graph). **Micro Economics** **Unit -1- Central problem and production possibility curve** **Topic :** Introduction to economics, micro and macro economics, central problems of an economy, production possibility curve and application. Positive and normative economics.
Aug	**22**	**MICRO ECONOMICS** **Topic : Consumer behaviour : -** Cardinal and ordinal approach of utility, Law of Diminishing marginal utility, Consumer equilibrium single and more than one commodity, Indifference curve and budget line, Properties of IC, Consumer equilibrium under IC approach.

Months	No. of Working Days	Unit / Topics
		Topic : Demand and elasticity of demand :- Demand Law, factors affecting Demand, market and individual demand, change in demand and change in quantity demanded, exceptions of demand, Elasticity of demand, methods of measuring elasticity, factors affecting elasticity, factors affecting elasticity of demand. **STATISTICS** **Unit -3- Measures of Central Tendency** mean (simple and weighted)
Sept.	**25**	**MICRO ECONOMICS** **Topic : Producer Behaviour :-** Law of variable proportion, relation between TP, AP and MP, Cost - different cost curves and relation between TC, TVC, TFC, MC, AC, AVC, AFC, Explicit and Implicit cost curves. **Revision for Ist Semester Examination**
Oct	**12**	**STATISTICS** **Topic : Measures of Central Tendency : - Median and mode (in cont...)** **Micro Economics :** **Topic : Producer behaviour :** Supply and elasticity of supply, factors affecting supply, change in supply and change in quantity supplied.
Nov	**22**	**Developing Project in Economics :- Introduction** **Topic : Correlation :** Meaning, scatter diagram, measure of corrleation-Karl person and spearmans rank correlation. **Micro Economics : Topic : Producer behaviour :** shape of revenue curves in different markets. producer equiliberium - MR-MC approach.

Months	No. of Working Days	Unit / Topics
		Topic : Main market forms :- Perfect competion, Monopoly, Monopolistic competition, Oligopoly. Features and their implication.
Dec	**20**	**STATISTICS** **Topic : Introduction to Index No.:-** Meaning, Types -wholesale price index, consumer price index and index of Industrial production, methods of index number uses of index no., inflation index number. **Micro Economics : Topic : Main Market Forms :** Perfect competition, Monopoly, Monopolistic competition, Oligopoly. Features and their implication. (Contd..) Simple application of demand and supply, market equiliberium and change in equiliberium, price ceiling and price floor.
Jan	**22**	**STATISTICS** **Topic : Introduction to Index No.:-** (Contd..) **Revision for 2nd Semester Examination**
Feb	**23**	**Revision Continued ...**

REFERENCE BOOKS :

MICRO ECONOMICS :

1. **NCERT MICRO ECONOMICS**
2. **MICRO ECONOMICS (I.D. MANGLA)**
3. **MICRO ECONOMICS (V.K. JAIN AND OHRI)**

STATISTICS :

1. **STATISTICS (NCERT)**
2. **STATISTICS (N.M. SHAH)**
3. **STATISTICS (I.D. MANGLA)**

Months	No. of Days	Unit No.	Topics
July	**24**	**1**	**Changing trends & career in Physical Education** ● Concept, Aims & Objectives of Physical Education. ● Changing trend in sports-playing surface, wearable gears and sports equipment, technological advancements ● Career Options in Physical Education ● Khelo - India & Fit India Program
Aug	**22**	**2**	**Olympism** ● Ancient and Modern Olympics ● Olympism - Concept and Olympics value (Excellence, Friendship & Respect) ● Olympic - Symbol, Motto, Flag, Oath and Anthem ● Olympic Movement Structure - IOC, NOC, IFC, Other members
		5	**Physical Fitness, Health and Wellness** ● Meaning & Importance of Wellness, Health and Physical Fitness ● Components / Dimension Wellness, Health and Physical Fitness ● Traditional Sports & Regional Games for promoting wellness

Months	No. of Days	Unit No.	Topics
Sept	**25**	**6**	**Test, Measurement & Evaluation** ● Concept of test, Measurement & Evaluation in Physical Education and Sports ● Classification of test in Physical Education & Sports ● Test administration guidelines in Physical Education & Sports.
Oct	**12**	**7**	**Fundamentals of Anatomy, Physiology in Sports** ● Definition and Importance of Anatomy, Physiology in exercise and Sports ● Function of Skeleton system, Classification of Bones & Joints ● Function & Structure of Circulatory System and Heart ● Function and Structure of Respiratory System
Nov	**22**	**4**	**Physical Education & Sports for CWSN (Children with Special Needs-Divyang)** ● Concept of Disability and Disorder ● Types of Disability, its causes and nature (Intellectual disability, Physical Disability ● Aims and objectives of Adaptive Physical Education ● Role of various professionals for children with special needs (Counsellor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist & Special Educator)

Months	No. of Days	Unit No.	Topics
		3	**Yoga** ● Meaning & Importance of Yoga ● Introduction of Ashtanga Yoga ● Introduction of Yogic Kriyas (Shat Karma)
Dec	**20**	**8**	**Fundamentals of Kinesiology and Biomechanics in Sports** ● Definition & Importance of Kinesiology and Biomechanics in Sports ● Principles of Biomechanics ● Types of Body Movement - Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation ● Axis and Planes - Concept and its application in body movements
		9	**Psychology & Sports** ● Definition & Importance of Psychology in Physical Education & Sports ● Adolescent problems & their Management ● Team Cohesion and Sports
Jan	**22**	**10**	**Training and Doping in Sports** ● Concept and Principles of Sports Training ● Training Load : Overload, Adaption and Recovery ● Concept of Doping and its disadvantages

SUB - COMPUTER SCIENCE

Months	No. of Working Days	Topic
June	**04**	**Computer Systems and Organization (CSO)** ● **Basic computer organization :** description of a computer system and mobile system, CPU, memory, hard disk, I/O, battery, power. ● **Types of Software :** application, OS, Utility, libraries. ● **Language of Bits :** bit, byte, MB, GB, TB and PB.
July	**24**	● **Boolean logic :** OR, AND, NAND, NOR, XOR, NOT, truth tables, De Morgan's laws. ● **Information representation :** numbers in base 2, 8, 16, unsigned integers, binary addition. ● **Strings:** ASCII, UTF8, UTF32, ISCII (Indian script code) ● **Execution of a Program:** basic flow of compilation - program binary execution Interpreters (process one line at a time), difference between a compiler and an interpreter.
Aug	**22**	**Programming and Computational Thinking (PCT - 1)** ● Familiarization with the basics of Python programming : a simple "hello world" program, process of writing a program running it, and print statements; simple data-types: integer, float, string.

Months	No. of Working Days	Topic
		● Introduce the notion of a variable, and methods to manipulate it (concept of L-value and R-value even if not taught explicitly). ● Knowledge of data types and operators: accepting input from the console, assignment statement, expressions, operators and their prcedence.
Sept	**25**	● **Conditional Statements :** if, if-else, if-elif-else; simple programs: e.g. absolute value, sort 3 numbers, and divisibility. ● **Notion of iterative computation and control flow:** for, while flowcharts, decision trees and pseudo code; write a lot of programs: interest calculation, primarily testing and factorials. ● **Idea of debugging:** errors and exceptions; debugging: pdb, break. ● **Lists, tuples and dictionary :** finding the maximum, minimum, mean; linear search on list/tuple of numbers, and counting the frequency of elements in a list using a dictionary. Introduce the notion of accessing elements in a collection using numbers and names.
Oct	**12**	● Introduction to Modules (Math Module, Random Module and statistics module. ● **Strings :** compare, concat, substring; notion of states and transitions using state transition diagrams.

Months	No. of Working Days	Topic
Nov	24	• **Running a program :** Notion of an operating system, how an operating system runs a program, idea of loading, operating systgem as a resource manager. • Concept of cloud computing, cloud (public / private), and brief introduction to parallel computing. **Data Management (DM-1)** • **Dictonary :** Introduction, accessing items in a dictonary using keys, mutability of dictionary, Traversing a dictionary, built-in functions : len(), dict(), keys(), values(), items(), get, update(), del, clear, fromkeys(), copy(), pop(), popitem(), set default(), max(), min(), count(), sorted(), programs related to dictionary.
Dec	20	**Society, Law and Ethics (SLE-1)** • **Cyber safety:** safely browsing the web, identity protection, confidentiallity, social networks, cyber trolls and bullying. • **Appropriate usage of social networks:** spread of rumours, and common social networking sites (Twitter, Linkedln, and Facebook) and specific usage rules. accessing web sites: adware, malware, viruses, Trojans. • **Safety communicating data :** secure connections, eavesdropping, phishing and identity verification. E.Waste Management, IT-Act.
Jan	22	**Project Work**
Feb	23	**Revision**

Months	No. of Working Days	Topic
June	04	**Unit-1 : Introduction to Computer System** **Introduction to computers and computing :** evolution of Computing devices, components of a computer system and their interconnections, Input/ Output devices. **Computer Memory :** Units of memory, types of memory - primary and secondary, data deletion, its recovery and related security concerns. **Software :** Purpose and types - system and application software, generic and specific purpose software.
July	24	**Unit-2 : Introduction to Python** **Programming Logic :** Algorithm & Flowchart, problem solving application with examples. Basic of Python programming, Python interpreter - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operators, precedence of operators, data types, mutable and immutable data types, statements, expressions, evaluation of expressions, comments, input and output statements, data type conversion, debugging. Control statements : if-else, for loop, while loop.
Aug	22	**String :** String operation, Creating, Indexing, Accessing, Slicing **Lists :** list operations - creating, initializing, traversing and manipulating lists, list methods and built-in-functions: len(), list(),

Months	No. of Working Days	Topic
		append(), extend(), insert(), count(), find(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(). **Dictionary :** concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions: len(), dict(), keys(), values(), items(), get(), update(), clear(), del **Module (user defined functin) :** Basic concept of modules.
Sept	**25**	**Data Handling using NumPy :** Data and its purpose, importance of data, structured and unstructured data, data processing cycle, basic statistical methods for understanding data - mean, median, mode, standard deviation and variance. Introduction to NumPy library, NumPy arrays and their advantage, NumPy attributes, creation of NumPy arrays; from lists using np.array(), np.zeros(), np.ones(), np.arange(), indexing, slicing, and iteration; concatenating and splitting array;
Oct	**12**	**Unit-3 : Database concepts and the Structured Query Language :** **Database Concepts :** Introduction to database concepts and its need, Database Management System. **Relational data model :** concept of attribute, domain, tuple, relation, candidate key, primary key, alternate key, foregin key. **Structured Query Language :** Data Definition Language, Data Query Language and Data Manipulation Language.

Months	No. of Working Days	Topic
Nov	**22**	**Introduction to MySQL :** Creating a database, using database, showing tables using MySQL. **Data Definition Commands :** CREATE, DROP ALTER (Add and Remove primary key, attribute). **Data Query Commands :** SELECT, FROM,WHERE, LIKE, BETWEEN, IN, ORDER BY, using arithmetic, logical, relational operators and NULL values in queries, Distinct clause. **Data Manipulation Commands :** INSERT, UPDATE, DELETE, ALTER.
Dec	**20**	**Unit-4 : Introduction to the Emerging Trends :** Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics, Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.
Jan	**22**	**Project Work**
Feb	**23**	**Revision**

Subject - Business Studies

Months	No. of Working Days	Ch.	Topic
June	04	1	**Evolution and Fundamentals of Business** History of trade and commerce in India; Indigenous Banking system, Rise of intermediaries, Transport, Trading communities, Merchant Corporations, Major Trade Centres, Major Imports & Exports, position of Indian sub-continent in the World economy. Business - Meaning and Characteristics. Business, Profession and Employment - Concept, Objectives of Business, Classification of Business activities - Industry and Commerce. Industry - types: Primary, secondary, tertiary- Meaning and sub groups. Commerce - Trade (types - internal, external; wholesale and retail) and auxiliaries to trade; (banking, insurance, transportation, warehousing, communication and advertising) meaning. Business risk - concept.
July	24	2	**Forms of Business Organisation :** Sole Proprietorship-Concept, merits and limitations. Partnership - Concept, types, merits and limitations. Registration of partnership firm, partnership deed, types of partners. Discuss types of partners - Active, Sleeping, Secret, Nominal and partner by Estoppel.

Months	No. of Working Days	Ch.	Topic
			State the need of Registration of a partnership firm. Discuss types of partners- Active, Sleeping, Secret, Nominal and partner by Estoppel. Hindu undivided family business: concept. Cooperative societies - concept, merits and limitations, types. Company - concept, merits and limitations; types: private, public and one person company - concept. Formation of company - stages, important documents to be used in formation of a company. Choice of form of business organisation.
Aug	22	3	**Public, Private and Global Enterprises :** Public sector and Private sector enterprises - Concept. Forms of Public Sector enterprises: Departmental Undertakings, Statutory Corporations and Government Company - Features, merits and limitations. Global Enterprises - Features, Public Private Partnership concept.
		4	**Business Services :** Meaning and types. Banking- Types of bank accounts - Savings, current, recurring, fixed deposit and multiple option deposit account. Banking services with particular reference to Bank Draft, Bank Overdraft, Cash Credit, e-Banking-meaning, types of digital payments. Insurance - Principles, Types - Life, Health, Fire and

Months	No. of Working Days	Ch.	Topic
			Marine insurance - Concept. Postal services - Mail, Registered Post, Parcel, Speed Post, Courier - meaning.
Sept	25		**Revision** **Half - Yearly Examinations :**
		5	**Emerging Modes of Business :** e-Business- concept, Scope, benefits.
Oct	12	6	Social Responsibility of Business and Business Ethics Concept of Social responsibility, Case for social responsibility, Responsibility towards owners, investors, consumers, employees, government and community. Role of business in environment protection. Business Ethics : Concept & Elements.
		7	**Sources of Business Finance :** Business Finance : Concept and importance - Owners' Funds-Equity shares, Preference shares, Retained earnings.
Nov	22	7	**Continuation of Ch - 7** **Borrowed funds :** Debentures and Bonds, Loan from Financial institution and commercial banks, public deposits, Trade credit. Differentation between owners' funds and borrowed funds.
		8	**Small business and Entrepreneurship Development ED :** Concept and Need, process of Entrepreneurship Development : Start up India Scheme, ways to funds Start up, Intellectual Property Rights and Entrepreneurship.

Months	No. of Working Days	Ch.	Topic
Dec	20	8	**Continuation of Ch - 8** Small scale enterprise - Definition as per MSMED Act, 2006. Role of small business in India with special reference to rural areas. Government schemes and agencies for small scale industries: NSIC and DIC with special reference to rural, backwards areas.
		9	**Internal Trade :** Meaning and types of services rendered by a wholesaler and retailer. **Winter Break :** Project work for Practial
Jan	22	9	**Continuation of Ch - 9** Types of retail trade - itenerant and small scale fixed shop retailers. Large scale retailers - Departmental stores, Chain stores - concept.
		10	**International Trade :** Concept and Benefits to the nation and business firms. Export trade -meaning & procedure, Import Trade - meaning & procedure. Documents involved in International Trade, indent, letter of Credit, shipping order, shipping bills, mate's receipt (DA/DP) World Trade Organisation : meaning & objective.
Feb	22		**Revision** **Annual Examinations**

Sub - Accountancy

Months	No. of Days	Term	Topics
June	04	**I**	**PART- A : FINANCIAL ACCOUNTING** **Introduction to Accounting** ● Accounting - concept, objectives, advantages and limitations, types of accounting information; users of accounting information and their needs. Qualitative Characteristics of Accounting Information. Role of Accounting in Business. ● Basic accounting Terms - Business trasaction, capital, drawings. Liabilities (Non Current and Current). Assets (Non Current, Current); Fixed assets (Tangible and Intangible), Expenditure (Capital and Revenue), Expenses, income, profits, gains, loss, Purchases, sales, Goods, stock, Debtor, Creditor, voucher, discount (Trade discount and cash discount).
July	24		**Theory Base of Accounting :** ● Fundamental Accounting assumptions: GAAP-CONCEPT ● Business entity, money measurement, Going Concern, Accounting Period, Cost Concept, Dual Aspect, Revenue Recognition, Matching : Full Discolosure, Consistency, Conservatism, Materiality and Objectivity. ● System Accounting. Basis of Accounting : cash basis and accrual basis.

Months	No. of Days	Term	Topics
			● Accounting Standards: Applicability in IndAS ● Goods and Services Tax (GST) : Characteristics and Objective. **Recording of business Transactions:** ● Voucher and Transactions: Source Documents and Vouchers, preparation of Vouchers, Accounting Equation Approach: Meaning and Analysis, Rules of Debit and Credit. ● Recording of Transactions- Books of Original
Aug	22		Entry. Journal ● Special purpose books : ● Cash book: simple, cash book with bank column and petty cashbook ● Purchases book. ● Sales book ● Purchases return book ● Sales returns book.
Sept	25		**Note : Including trade discount, freight and cartage expenses for simple GST calculation.** ● Ledger: Format, Posting from Journal and Subsidiary books, Balancing of accounts. **Bank Reconciliation Statement :** ● Need and preparation. **Depreciation, Provisions and Reserves :**

Months	No. of Days	Term	Topics
			• Depreciation : Concept, Features, Causes, factors • Other similar terms : Depletion and Amortisation • Methods of Depreciation : i) Straight Line Method (SLM) ii) Written Down Value Method (WDV) **Note : Excluding change of method** • Difference between SLM and WDV; Advantages of SLM and WDV • Accounting treatment of depreciation i) Charging to asset account ii) Creating provision for depreciation/accumulated depreciation account • Provisions and Reserves : Difference • Types of Reserves : i) Revenue Reserve ii) Capital Reserve iii) General Reserve iv) Specific Reserve v) Secret Reserve Difference between capital and revenue reserve
Oct	12	**II**	**Accounting for Bills of Exchange** • Bill of exchange and Promissory Note : Definition, Specimen, Feautres, Parties. • Difference between Bill of Exchange and Promissory Note • Terms in Bill of Exchange : i) Term of Bill

Months	No. of Days	Term	Topics
			ii) Accommodation bill (Concept) iii) Days of Grace iv) Date of maturity v) Discounting of Bill vi) Endorsement of Bill vii) Bill after due date viii) Negotiation ix) Bill sent for collection x) Dishonour of bill • Accounting Treatment Note : excluding accounting treatment for accommodation bill Trial balance and Rectification of Errors • Trial balance : objectives and preparation (Scope : Trial balance with balance method only) • Errors : types-errors of omission, commission, principles, and compensating; their effect on Trial Balance. Detection and rectification of errors; preparation of suspense account.
Nov	22	**II**	**PART- B : FINANCIAL ACCOUNTING** **Unit 3 : Financial Statements of Sole Proprietorship** **Financial Statements** • Meaning, objectives and importance; Revenue and Capital Receipts; Revenuje and Capital Expenditure; Deferred Revenue Expenditure.

Months	No. of Days	Term	Topics
			• Balance Sheet : need, grouping and marshalling of assets and liabilities. Preparation. • Adjustments in preparation of financial statements with respect to closing stock, outstanding expenses, prepaid expenses, accrued income, income received in Advance, depreciation, bad debts, provision for doubtful debts, provision for discount on debtors, Abnormal loss, goods taken for personal use/staff welfare, interest on capital and managers commission. • Preparation of Trading and Profit and Loss account and Balance Sheet of a sole proprietorship with adjustments.
Dec	20		**Project Work**

Sub - Fine Art (Painting) Code No. 049

Months	Theory/ Practical	Topics
June (05Days)	**Theory**	Introduction of Fine Arts. Its different branches, medium and scope. Principles of Composition, Method and Materials. What is painting ? **Element of composition:-** point, line, form, colour, tone, texture and space. **Principal of composition**:- Unity, Harmony, Balance, Rhythm, Emphasis, Proportion.
	Practical	Introduction of Method and material, Pencil shading fixed point view, Drawing, Sketching & Colouring. **Subjects of composition :-** Still life study.
July (24Days)	**Theory**	Difference between Painting, Graphics, Sculputre, Commercial Art, Design and its different types. Concept of Colour Wheel. Pre-Historic Rock-Paintings Introduction period, location and study and appreciation of different Pre-historic Paintings. **Eg.-** Wizard's Dance.
	Practical	Pencil shading, Pen & ink and water colour. What is design ? Basic-Design in variation of geometric and Rhythmic shapes in gemetrical and decorative design and colour to understand design as organised visual arrangements. Monocrome painting, Use of Primary, Secondary Tertiary, Contrast, Cool and warm colour combinations. **Subjects of compostition :-** Vegetable, Foliage, and daily used object, Nature and object study, Geometrical form objects, natural form life plants and flower, Decorative and ornamental design.

Months	Theory/ Practical	Topics
Aug. (23Days)	**Theory**	Art of Indus Valley Civilization. ● Introduction (period and location) ● Harappa & Mohanjodaro (Now Pakistan) 11, Ropar, Lothal, Ramgpur, Alamgipur, Kali Banga Banawali and Dholavira (India) Study of different Sculptures and Terracotta's. **Eg.-** Dancing Girl, Male Torso, Mother Goddess.Study of different Seal Eg.- Bull.
	Practical	What is composition, Black and white and colour composition, Sketching, Shading and Water colour (transparent & opaque). **Subjects of composition:-** Portrait study, Human figure study with colour compositions, Village life, Landscape with human figure.
Sept. (23Days)	**Theory**	Buddhist, Jain and Hindu Art. General Introduction to Art and Sculptures of Mauryan.
	Practical	Concept of perspective, colour perspective, perspective with composition, What is landscape? Use of linear & aerial perspective. **Subjects of composition:-** Landscape with different tree, reflection, water fall, mountain; City-scape, Living room & drawing room with perspective drawing.
Oct (12Days)	**Theory**	Buddhist, Jain and Hindu Art. General Introduction to Art and Sculptures, Shunga, Kushana, Gandhara and Mathura style and Gupta period. **Eg.-** Lion Capital, Chauri Bearer, Seated Buddha from Katra Tila, (Mathurastyle), Jain Tirthankar.
	Practical	Wax resistance technique, Mixed medium technique, Composition with human figure using different textures.

Months	Theory/ Practical	Topics
		Subjects of composition:- Different birds and animals composition, Dream or fantasy imaginative composition, Rainy day.
Nov. (24Days)	**Theory**	Introduction to Ajanta. Location, Period, No. of Caves, Chaitya and Vihara, Painting and Sculptures, Subject matter and technique etc. Study of different Painting and Sculptures of Ajanta. Artistic aspects of Indian Temple sculpture (6th century AD to 13 century AD). and study of different Temple-Sculptures. **Eg.-** Descent of Ganga, Trimurti (Elephanta). (Vimal Shah temple, solenki Dynosty) Mount Kailash, Lakshmi Narayan / Kandariya Mahadev Temple, Cymbal Player (Suntemple), Mother and Child.
	Practical	Flower study with white and white flower, landscape painting with mixed medium technique, wax resistance technique with landscape painting, Colourful background and monochrome foreground painting with landscape. **Subjects of composition:-** Study room, Any festival, Park, Any Social theme.
Dec. (21Days)	**Theory**	Introduction to Indian Bronzes method of casting (solid & Holland) and study of different South Indian Bonzes. **Eg.-** Nataraj. Method material and technique of water colour and acrylic colour and oil colour. Transparent water colour, opaque water colour and tempera water colour. Block painting and illusion. **Subjects of composition:-** Illusionistic painting, opitical illusionistic painting, 3D painting, block painting, block design and outdoor study, Architectural drawings.

Months	Theory/ Practical	Topics
Jan. (22Days)	**Theory**	Artistic aspects of the Indo-Islamic architecture & study and appreciation. **Eg.-** Qutab Minar, Gol Gumbad.
	Practical	Composition making with different elements in any medium. **Subjects of composition:-** Human figure with composition, Winter day, festival, market, city life, village life, Practical Exam.
Feb. (23Days)	**Theory**	**Revision for Final Examination.**
	Practical	Practical Exam :- Portfolio presentation with 15 painting with record of the entire year's performance from sketch to finished Art work, Pencil shading, pen & ink work, Landscape painting, Human figure composition, Still life painting, Human figure drawing & sketch, Portrait painting, Imaginative painting. And other compositions according to your syllabus.
Materials Required for Practical		Pen, pencil eraser, shading pencil set, marker (thin and bold), pastel colour, Artist water colour, Synthetic hair brushes- 1set, big bowl, big colour palette, rough cloth, A/3 size drawing copy, A/3 size chart papers (unrolled), file board, shading pencil, oil pastel, marker, paint brush pen, Acrylic colours. Pen ink brush, News paper, Paper clip, Drawing board- Navneet, Portfolio of your art works.

Months	Theory/ Practical	Topics
Practical Exam		**Paper-I-** Pencil shading- Still life study, Nature study, Foliage study, Object study. **Paper- II -** Colourful composition with human figure, daily life, village life, urban life, drawing room, rainy day, festival, market, city life, fantasy & dream, cultural & social events, bird and animal with human figure. **Paper- III -** Portfolio Assessment.

Sub - Fine Art (Graphics) Code No. 050

Months	Theory/ Practical	Topics
June (05Days)	**Theory**	Introduction of Fine Arts. Its different branches, medium and scope. Principles of Composition, Method and Materials. What is Painting ? **Element of composition :-** point, line, form, colour, tone, texture and space. **Principal of composition :-** Unity, Harmony, Balance, Rhythm, Emphasis Proportion.
	Practical	Introduction of Method and Material, Pencil Shading fixed point view, Drawing, Sketching & Colouring. Introduction Graphics- Linocut, Relif Printing, Etching, Lithography silk screen. **Subjects of composition :-** Still life study. Folk & Traditional Design.
July (24Days)	**Theory**	Difference between Painting, Graphics, Sculputre, Commercial Art, Design and its different types. Concept of Colour Wheel. Pre-Historic Rock-Paintings introduction, period, location and study and appreciation of different Pre-historic Paintings. **Eg.-** Wizard's Dance.
	Practical	Human figure Drawing, Proportion, Object drawing, Perspective, Craft making. Black and white compositions, Different textures.

Months	Theory/ Practical	Topics
		Subjects of composition:- Vegetable, Foliage, and daily used object, Scenery, Landscape, Flowers.
Aug. (23Days)	**Theory**	Art of Indus Valley Civilization. Introduction, period, location (i) Harappa & Mohanjodaro (Now in Pakistan) (ii) Ropar, Lothal, Rangpur, Alamgipur, Kali Bagan, Banawali and Dholaviera (In India). Study and appreciation of different Sculptures and Terracotta's **Eg.-** Dancing Girl, Male Torso, Mother Goddess. Study and appreciation of different Seal **Eg.-** Bull
	Practical	Colour and Colour Composition, Colour Wheel, Black and White Composition, Potato Print, Craft making, Stencil, Colour and Mono colour / Black & White Layouts. **Subjects of composition:-** Fruits, Vegetables, Still life, Portrait, Human figures.
Sept. (23Days)	**Theory**	Buddhist, Jain and Hindu Art. General Introduction to Art and Sculptures of Mauryan.
	Practical	Linocut, Woodcut, Black and White compositions, Print making, Technique of Writing Artist's Proof (A/P), no. of prints (1/6), Medium, Subject, Name Class Sec. in prints. Hanging prints and Technique of wrapping prints and MDF in News-paper to take home for drying.

Months	Theory/ Practical	Topics
Oct (12Days)	**Theory**	Buddhist, Jain and Hindu Art. General Introduction to Art and Sculptures during Mauryan, Shunga, Kushana, (Gandhara and Mathura) style and Gupta period. **Eg.-** Lion Capital, Chauri Bearer, Seated Buddha from Katra Tila, Jain Tirthankar.
	Practical	Woodcut printing in black and white, using different textures. Print Making, Print quality- Pay special attention to print quality and neatness (no extra spot or impression) even border side & backside of the print & surrounding areas. All prints should be neat and clean always. **Subjects of composition:-** Composition with flowers, birds, animals.
Nov. (24Days)	**Theory**	Introduction to Ajanta Location, period, No. of Carves, Chaitya & Vihar. Study of different Painting and Sculptures, subject matter & technique etc. of Ajanta of Ajanta. Artistic aspects of Indian Temple sculpture (6th to 13th Cent. AD) Introduction to Temple Sculptures. **Eg.-** Descent of Ganga, Lakshmi Narayan / Kandariya Mahadev Temple, Cymbal Player, Mother and Child.
	Practical	Coloured printing in Woodcut using Registration methods. **Subjects of composition:-** Composition with human figures, portraits; Village life, City life etc.

Months	Theory/ Practical	Topics
Dec. (21Days)	**Theory**	Introduction to Indian Bronzes method of casting (solid and hallow). Study and appreciation of following and study of following South Indian Bronzes. **Eg.-** Nataraj.
	Practical	Colography, Silk screen printing introduction - Method Material and technique, Monochrome compositions for Silkscreen. **Subjects of composition:-** Festival, Market, Daily life etc.
Jan (22Days)	**Theory**	Artistic aspects of the Indo-Islamic architecture introduction, study and appreciation. **Eg.-**Qutab Minar, Gol Gumbad.
	Practical	**Portfolio making -** Finishing, mounting and file preparation, with record of the entire year's performance from layout to finished Art work. The selected prints (from Linocuts/Woodcuts/Paper- cardboard / Colography Prints) prepared. **Practical Exam.**
Feb. (23Days)	**Theory**	**Revision for Final Examination.**
	Practical	**Practical Exam:-** Portfolio presentation with 10 best Graphics work. Black and white layout, tracing on MDF, cutting & creating different textures, printing, writing Artist's Proof & signature in prints. Submit two identifical prints along with layout for your final exam.

Months	Theory/ Practical	Topics
Materials Required for Practical		**June-Sept.** : Small poster colour set of 6 colours, Artists water colour box (Camel), Good synthetic Brushes-1set, Bowl, Palette, Drawing copy A/3 size or 1/4th Thick chart paper, A/3 size plastic leaf file, Shading Pencil set, Rough Clothes, in a big carry bag. Write your names in all. **October to February** : Poster colour set of 6 colours, 5 MDF Board, 1 Linocut, Linocut Tools, Carbon Paper, Big Paper knife cutter, Few bushes, Pencil, Small steel bowl-1, Tarpine oil-1L (keep at home), Few chart papers (Cut in 1/4th size unrolled), Big spoon, Waste clothes small pieces, Fevicol tube, Old news Papers, Apron, in a big carry bag. Few file board for mounting Portfolio.
Practical Exam		**Half Yearly Exam :** **(Paper-I)** Pencil shading- Still life study, Nature study, Foliage study etc. **(Paper- II)** Colourful composition with human figures, flowers, bird, animal etc. **Annual Exam :** **Paper- I -** Layout making with black and white poster colour on given subject (original composition). Transforming layout on MDF Board. **Paper- II -** Print making process. Prints should be identical. All prints should be of good quality, neat and clean. In Practical Exam submit one identical prints along with layout on given topic. For extra prints use own papers. **Paper- III -** Portfolio with selected 10 Prints. **Viva / Oral** on Method material, Fundamentals of art, History of Art.

Months	No. of Days	Chapter
June	04	Introduction to World Hisotry
July	24	**Section - A** Introduction Writing and City Life **Section - B** Empires Introduction An empire across three continents
Aug	22	An empire across three continents continuation Nomadic empires
Sept	25	Nomadic empires (Continuation) **Revision** **Half Yearly Examination**
Oct	12	**Section - C** Changing Traditions Introduction The three orders
Nov	22	The three orders (Continuation) 8. Changing Cultural Traditions **Section - C** Changing Traditions Introduction 5 7. The Three Orders 20 10 8. Changing Cultural Traditions 20 10 **Section - D** Paths to Modernization

Months	No. of Days	Chapter
Dec	20	9. Introduction 10. Displacing Indigenous people 11. Paths to Modernization
Jan	22	9. Introduction 10. Displacing Indigenous People 11. Paths to Modernization Japan, China, Korea
Feb	23	**Revision and Annual Exammination**

Subject - Political Science

Months	No. of Days	Chapter
June	04	**Book 1 - Chapter 1 - Constitution** ● Constituion : The ● Philosophyand Making of the ● Constitution, Fundamental Rights and Duties ● Directive Principles of State Policy ● Amendments
July	24	**Continuation of Chapter 1** **Book 1 Ch - 2 Election and Representation** ● Election and Democracy ● Election System in India ● Electoral Reforms **Book 2 Ch-1 Political Theory** ● What is Politics ● Politics Vs Political Theory ● Importance of Political Theory
Aug	22	**Book 1 - Chapter 3 - Legislature** ● Why do we need a Parliament ? ● Unicameral / Bicameral Legislature ● Functions and Power of the Parliament ● Parliamentary Committees ● Parliamentary Officials : Speaker, Deputy Speaker ● Parliamentary Secretary

Months	No. of Days	Chapter
		Book 2 - Chapter 2 - Liberty ● Liberty Vs Freedom ● Negative and Positive Liberty
Sept	25	● **Revision for Half Yearly** ● **Half Yearly Exams**
Oct.	12	**Book 1 - Chapter 4 - Executive** ● Parliamentary Executive in India : The President ● The Prime Minister and the Council of Ministers ● Permanent Executive : Bureaucracy
Nov.	22	**Book 1 - Federalism** What is Federalism ? Evolution & Growth of the Indian Federalism: Quasi Federalism, Cooperative Federalism & Competitive Federalism. **Book 1 - Chapter 5 - Judiciary** ● Why do we need an Independent Judiciary ? ● Structure and Jurisdiction of the Judiciary ● Judicial Review ● Judicial Activism ● Judicial Over - reach **Book 1 - Chapter 5 - Local Government** ● 73rd and 74th Constitutional Ammendment

Months	No. of Days	Chapter
		Book 2 - Chapter 3 - Equality ● What is Equality ? ● Significance of Equality ● Various Dimension of Equality ● How can we promote Equality ?
Dec.	20	**Book 2 - Chapter 4 - Justice** ● What is Justice ? ● Hisotry of Rights ● Kind of Rights ● Human Rights **Book 2 - Rights** What are rights? Where do Rights come from ? Legal Rights and the State. Kinds of Rights. Human Rights. **Book 2 - Citizenship** What is citizenship? Citizen and Citizenship, Citizen and Nation, Global Citizenship
Jan.	22	**Book 2 - Nationalism** Nations and Nationalism, Variants of National-ism, Nationalism, Pluralism and Multiculturalism. **Book 2 - Secularism** What is Secularism? What is Secular State ? The Western and the Indian perspectives to Secularism. Salient Features of Indian Secularism.
Feb.	23	**Revision** **Annual Exams**

Project Work 20 Marks

Details of Project Work

1. The Project work will be of 20 Marks.
2. Out of 20 marks, 10 marks are to be allotted to vivavoce and 10 marks for project work.
3. For Class XI, the evaluation for 20 marks project works should bed one by the internal examiner.
4. The project can be individual / pair / group of 4-5 each. The Project can be made on any of the topics given in the syllabus of a particular class.
5. The suggestive list of activities for project work is as follws : - Role play, skit, Presentation, Model, Field Survey, Mock Drills / Mock Event etc.
6. The teacher should give enough time for preparation of the Project Work. The topics for Project work taken up by the student must be discusssed by the teacher in classroom.

Months	No. of Working Days	Chapters
June	04	**Section - I - Chapter - 1 Sociology and Society** • Introducing Society:Individuals and Collectivities • Plural Perspectives and inequalities • Emergence of Society • Nature and Scope • Relationship to other disciplines
July	24	**Continued 1st Chapter - Chapter -2 Terms, Concepts and their use in Sociology** • Social groups and Society • Status and Role • Social Stratification • Society and Social Control **Chapter - 3- Understanding Social Institutions** • Family, Marriage and Kinship • Work and Economic Life • Political Institutions • Religion as a Social Institution • Education as a Social Institution

Months	No. of Working Days	Chapters
Aug	**22**	**Chapter - 4 - Culture and Socialization** • Culture, Values and Norms • Dimensions of Culture • Socialisation : Conformity, conflict and the shaping of personality **Chapter - 5 - Doing Sociology : Research Methods** • Objectivity and Subjectivity • Methods : Participant observation, Survey • Tools and Techniques : observation, Interview, Questionaire • The significance of field work in Anthropology and Sociology
Sept	**25**	**Revision and Half Yearly Examination**
Oct	**12**	**Unit - II - Understanding Sociology** **Chapter- 6 :** • Social Structure • Social Stratification, Class, Caste and Gender • Social Processes : Cooperation, Competition an Conflict
Nov	**22**	**Chapter - 7 - Social Change and Social Order in Rural and Urban Society** • Social Change : Types : Causes and Consequences • Social Order : Domination, Authority and Law, Contestation, Crime and Violence • Village, Town and City : Changes in Rural and Urban Society.

Months	No. of Working Days	Chapters
Dec	**20**	**Chapter - 8 - Environment and Society** • Ecology and Society • Environmental crises and Social Responses • Sustainable Development **Chapter - 9 - Introducing Western Sociologists** • Karl Marx on Class Conflict • Emile Durkheim, Division of Labour • Max Weber : Interpretive Sociology, Ideal type and Bureaucracy
Jan	**22**	**Chapter - 10 - Indian Sociologists** • G.S. Ghurye on Caste and Race • D.P. Mukherjee on Tradition and Change • A.R. Desai on the State • M.N. Srinivas on the Village
Feb	**23**	**Revision and Annual Examination**

Sub - Odissi Dance (Code No. 059)

Months	Practical/ Theory	Topics
June (02Days)	**Theory**	A brief history of Indian dance, The concept of Nat Raj
	Practical	Ablity to demonstrate the elementary steps Chauka No. 1 to No. 6
July (04Days)	**Theory**	Short notes on myths related to Kliya Daman, Dashavatar, Vastra haran Cheer Haran and Neuni Chor (Makhan Chor)
	Practical	Ability to demonstrate the elementary steps Tribhabga No. 1 to No. 4
Aug. (04Days)	**Theory**	Draupadi Cheer Haran and Asanjukta and Samyukta Mudra from Abhinnaya Darpan.
	Practical	Paadabheda and Bhangis used in the item
Sept. (03Days)	**Theory**	Definition of the terms : - (a) Nroitta, Nritya and Natya (b) Matra, Laya, Taal, Avartan and Vibhaga (anga) (c) Tandava and Lasya
	Practical	Learing of Mangalacharan (a) Demonstration of the Item (b) Recitation with hands of the Ukutas of the Item (c) Nameing the Rag and tala the item is composed to
Oct. (02Days)	**Theory**	Natyadharmi and Lokadharmi, Devadasi and Mohani.
	Practical	Learing of Mangalacharan : (a) Identification of the hastas used in the item (b) Identification and demonstration of the various components of the item.

Months	Practical/ Theory	Topics
Nov. (04Days)	**Theory**	Brief explanation of the five segments of basic repertoire of Odissi (a) Mangalacharan (b) Batu or Sthayi (c) Pallavi (d) Abhinaya (e) Moksha or any Tandava dance
	Practical	Mancha Pravesh, Pushpanjali, Bhumi Pranam, Ishta Deva Vandana, Trikhandi pranam or Sabha paranam.
Dec. (04Days)	**Theory**	Ability to written the notation of the Sthyi Ukuta or Dharana of the three following taals 1. Ektaali 2. Rupak Taal 3. Triputa Taal
	Practical	Explanation or Meaning of the sloka in the istha Deva vandana. Learing of Sthayi, Identification of the hasta.
Jan (04Days)	**Theory**	**Revision**
	Practical	Paadabheda and bhangis used inthe item
Feb (02Days)	**Theory**	**Revision for Annual Yearly Exam**
	Practical	**Revision for Annual Yearly Exam**

Sub - Hindustani Music Vocal (Code No. 034)

Months No. of Classes	Practical Topic	Theory Topic
June (02)	• Raag Bhimpalasi (Dhrut Khyal)	• Brief Study of the following :- Nada, Shruti, Swar, Saptak, Thaat, Jati, Laya, Taal. • Simple elaboration of Raag Bhimpalasi
July (04)	• Taan of Raag Bhimpalasi	• Knowledge of the structure of Taanpura • Description of Teen Taal along with Taal notation (Thah, Dugun, Chaugun)
Aug (04)	• Devotional Song	• History of Khyal and tarana • Life sketch and contribution of Tansen
Sept (02)	• **Revision**	• **Revision**
Oct (03)	• Raag Bihag (vilambit khyal)	• Simple elaboration of Raag Bihag • Brief Study of the Following Margi-Desi, Gaan, Raga • History of Dhrupad gayan

Months No. of Classes	Practical Topic	Theory Topic
Nov (03)	• Raag Bihag (Dhrut Khyal) with Taan	• Description of Ektaal (Thah, Dugun, Chaugun)
Dec (04)	• Raag Bhairavi (Dhrut Khyal) with Taan	• Simple elaboration of Raag Bhairavi • Brief study of Musical elements in Natya Shashtra and
Jan (04)	• Dhrupad (Any Raag)	• Description of Chautaal (Thah, Dugun, Chaugun) • Lifesketch and contribution of V.N. Bhatkhande and V.D. Paluskar
Feb (02)	• **Revision**	• **Revision**

Sub - Entrepreneurship

Months	No. of Working Days	Name of the Chapter
June / July	11+23	**Unit 1 :** Entrepreneurship Concept and Functions, Need Myths about Entrepreneurship, Advantages and Limitations, Process. Entrepreneurship - The Scenario **Unit 2 :** An Entrepreneur Types of Entrepreneurs, Competencies and Characteristics.
Aug	22	**Continuation of Unit 2 :** Entrepreneurial Values, Attitudes and Motivation Intrapreneur : Meaning and Importance **Unit 3 :** Entrepreneurship Journey Idea generation, Feasibility Study and opportunity Assessment Business Plan - Meanng, Purpose and elements Execution of Business Plan.
Sept	25	**Revision : Half Yearly Examinations** **Half Yearly Examinations** **Unit 4 :** Entrepreneurship as Innovation and Problem solving Entrepreneurs as problem solvers, Innovations and entrepreneurial Ventures- Global and Indian Role of Technology - e- Commerce and Social Media Social Entrepreneurship - Concept
Oct	12	**Unit 5 :** Understanding the Market Market - Concept, Types Micro and Macro Market Environment Market research - Concept, Importance and process Marketing Mix-Elements

Months	No. of Working Days	Name of the Chapter
Nov	22	**Unit 6 :** Business Finance and Arithmetic Unit of sale, unit price and Unit cost for single product or service Types of costs - Start up, Variable and Fixed, Break Even Analysis - For single product or service.
Dec	20	**Unit 7 :** Resource Mobilisation Types of Resources - Physical, Human, Financial and Intangible. Selection and Utilisation of Human resources and professionals like Accountants, Lawyers, Auditors, Board Members etc.
Jan	22	**Project Work** **Revision - Annual Examinations**
Feb	23	**Annual Examinations**

Subject - Legal Studies

Units		Marks
1	Theory and Nature of Political Institutions	15
2	Nature and Sources of Law	15
3	Historical Evolution of the Indian Legal System	10
4	Judiciary : Constitutional, Civil and Criminal Courts and Processes	20
5	Family Justice System i) Introduction ii) Institutional Frame work	20
	Total	**80**
	Project Work	**20**

Months	No. of Working Days	Unit / Chapter / Topics
June/ July	11+ 23	**Theory and Nature of Political Institutions** i) Organs of Government ii) Separation of Powers iii) Basic features of the Constitution of India
July	24	**Unit 1 : Continue**
Aug	22	**Nature and Sources of Law** i) Classification of Law ii) Sources of Law iii) Law Reform

Months	No. of Working Days	Unit / Chapter / Topics
Sept	23	**Historical Evolution of the Indian Legal System** i) Ancient Indian Law ii) Making of the Indian Constitution
Oct / Nov	12+ 23	**Judiciary : Constitutional, Civil and Criminal Courts and Processes** i) Constitution : Roles and Impartiality ii) Hierarchy of Courts iii) The Civil Court Structure iv) Structure and Functioning of Criminal Courts in India v) Other Courts in India
Dec / Jan	20+ 22	**Family Justice System** i) Introduction ii) Institutional Framework iii) Marriage and Divorce iv) Domestic Violence
Feb		**Revision**