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MAYOR WORLD SCHOOL
inspiring excellence

# GRADE XI SYLLABUS
## Session 2026-27

## ENGLISH

**Books: Hornbill, Snapshots**

### APRIL

**Reading**
Comprehension
**Writing & Grammar**
Classified advertisements
**Literature**
**HORNBILL:**
**Chapter 1** The portrait of a Lady
**Poems:**
**Poem 1** A photograph

### MAY

**Reading**
**Note Making**

**Writing & Grammar**
Classified advertisements
Gap Filling (Tenses)
**Literature**
**HORNBILL:**
**Poem 2** The Laburnum Top
**SNAPSHOTS:**
**Chapter 1** The Summer of Beautiful White Horse

### JULY

**Reading**
Comprehension
**Writing**
Speech
**Literature**
**HORNBILL**
**Chapter 2** We're not afraid to die……if we can all be together.
**Poems**
**Poem 3** The Voice of Rain

**SNAPSHOTS**
**Chapter 2** The Address

### AUGUST

**Writing and Grammar**

Poster
Re-ordering/Transformation of Sentences

**Literature**
**HORNBILL**

**Chapter 3** Discovering Tut: the saga continues

**SNAPSHOTS**
**Chapter 5** Mother's Day

**SEPTEMBER**

**Revison**

**OCTOBER**

**Reading**
Comprehension
**Grammar**

Gap Filling (Clauses)

**Literature**
**HORNBILL**
**Poems**
**Poem 4** Childhood
**SNAPSHOTS**
**Chapter 7** Birth

**NOVEMBER**

**Reading**
Note-Making and Comprehension
**Writing & Grammar**
Debate
Re-ordering /Transformation of Sentences
**Literature**
**HORNBILL**
**Chapter 7** The Adventure
**Poems**
**Poem 5** Father to son

**DECEMBER**

**Literature**
**HORNBILL**
**Chapter 8** Silk Road
**SNAPSHOTS**
**Chapter 8** The Tale of Melon City

**JANUARY**

**Revision**

**PHYSICS**

**APRIL**

**Unit I: Physical World and Measurement**
**Chapter–1: Units and Measurements**
Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Significant figures. Determining the uncertainty in result. Dimensions of physical quantities, dimensional analysis and its applications.

**Unit II: Kinematics**

**Chapter–2: Motion in a Straight Line**

Frame of reference, Motion in a straight line, Elementary concepts of differentiation and integration for describing motion, uniform and non- uniform motion, and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical and calculus treatment).

## MAY

**Unit II: Kinematics ( Cont.)**

**Chapter–3: Motion in a Plane**

Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors. Motion in a plane, cases of uniform velocity and uniform acceleration projectile motion, uniform circular motion.

**Unit III: Laws of Motion**

**Chapter–4: 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. Law of conservation of linear momentum and its applications.3 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).

## JULY

**Unit IV: Work, Energy and Power**

**Chapter–5: Work, Energy and Power**

Work done by a constant force and a variable force; kinetic energy, work energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: non- conservative forces, motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.

## AUGUST

**Unit V: Motion of System of Particles and Rigid Body**

**Chapter–6: 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 its 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).

**Unit VI: Gravitation**

**Chapter–7: Gravitation**

Kepler's laws of planetary motion, universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Gravitational potential energy and gravitational potential, escape velocity, orbital velocity of a satellite.

## SEPTEMBER

**Revision**

## OCTOBER

**Unit VII: Properties of Bulk Matter**

**Chapter–8: Mechanical Properties of Solids**

Elasticity, Stress-strain relationship, Hooke's law, Young’s modulus, bulk modulus, shear modulus of rigidity (qualitative idea only), Poisson's ratio; elastic energy. Application of elastic behavior of material(qualitative idea).

**Chapter–9: 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, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its simple applications. 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.

## NOVEMBER

**Chapter–10: Thermal Properties of Matter**

Heat, temperature, 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, thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law .

**Unit VIII: Thermodynamics**

**Chapter–11: Thermodynamics**

Thermal equilibrium and definition of temperature zeroth law of thermodynamics, heat, work and internal energy. First law of thermodynamics, Second law of thermodynamics: gaseous state of matter, change of condition of gaseous state -isothermal, adiabatic, reversible, irreversible, and cyclic processes.

## DECEMBER

**Unit IX: Behaviour of Perfect Gases and Kinetic Theory of Gases**

**Chapter–12: Kinetic Theory**

Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.

**Unit X: Oscillations and Waves**

**Chapter-13**

Periodic motion - time period, frequency, displacement as a function of time, periodic functions and their application. Simple harmonic motion (S.H.M) and its equations of motion; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of expression for its time period.

## JANUARY

**Chapter–14**

Waves 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, fundamental mode and harmonics, Beats.

# CHEMISTRY

## APRIL

**Unit I: Some Basic Concepts of Chemistry**

General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.

**Unit II: Structure of Atom**

Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, 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.

## MAY

**Unit III: Classification of Elements and Periodicity in Properties**

Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.

## JULY

**Unit IV: Chemical Bonding and Molecular Structure**

Valence electrons, ionic bond, covalent bond, bond parameters, Lewis's structure, polar 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.

**Unit VIII: Redox Reactions**

Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.

## AUGUST

**Unit XII: Organic Chemistry -Some Basic Principles and Techniques**

General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.

## SEPTEMBER

**Revision**

## OCTOBER

**Unit XIII: Hydrocarbons**

Classification of Hydrocarbons Aliphatic Hydrocarbons: Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. Alkenes - Nomenclature, the structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition. Alkynes - Nomenclature, the structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water. 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 the functional group in monosubstituted benzene. Carcinogenicity and toxicity.

## NOVEMBER

**Unit VI: 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, heat capacity and specific heat, measurement of $\Delta U$ and $\Delta H$, 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 non- spontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction).

## DECEMBER

**Unit VII: Equilibrium**
Equilibrium in physical and 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, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion effect (with illustrative examples).

## JANUARY

**Revision**

# BIOLOGY

## APRIL

**Unit-I Diversity of Living Organisms**
**Chapter-1: The Living World**
Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature
**Chapter-2: Biological Classification**
Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids.

## MAY

**Chapter-3: Plant Kingdom**
Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae (Topics excluded – Angiosperms, Plant Life Cycle and Alternation of Generations)
**Chapter-4: Animal Kingdom**
Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level (salient features and at a few examples of each category). (No live animals or specimen should be displayed.)

**Unit-II Structural Organization in Animals and Plant**
**Chapter-5: Morphology of Flowering Plants**
Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of family Solanaceae

## JULY

**Chapter-6: Anatomy of Flowering Plants**
Anatomy and functions of tissue systems in dicots and monocots.

**Chapter-7: Structural Organisation in Animals**
Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog.

## AUGUST

**Unit-III Cell: Structure and Function**
**Chapter-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, golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.
**Chapter-9: Biomolecules**
Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; Enzyme - types, properties, enzyme action. (Topics excluded: Nature of Bond Linking Monomers in a Polymer, Dynamic State of Body Constituents – Concept of Metabolism, Metabolic Basis of Living, The Living State)

**Chapter-10: Cell Cycle and Cell Division**
Cell cycle, mitosis, meiosis and their significance

## SEPTEMBER

**Revision**
**Unit-IV Plant Physiology**
**Chapter-13: Photosynthesis in Higher Plants**
Photosynthesis as a means of autotrophic nutrition; 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.

## OCTOBER

**Chapter-14: Respiration in Plants**
Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

**Chapter-15: Plant - Growth and Development**
Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA;

**Unit-V Human Physiology**
**Chapter-17: Breathing and Exchange of Gases**
Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders

## NOVEMBER

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**Chapter-18: Body Fluids and Circulation**

Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; 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.

**Chapter-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 and diabetes insipidus; role of other organs in excretion; disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant.

## DECEMBER

**Chapter-20: Locomotion and Movement**

Types of movement - ciliary, flagellar, muscular; skeletal muscle, contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

**Chapter-21: Neural Control and Coordination**

Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse

## JANUARY

**Chapter-22: Chemical Coordination and Integration**

Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goitre, diabetes, Addison's disease.
Note: Diseases related to all the human physiological systems to be taught in brief.

# MATHEMATICS

## APRIL

**Unit-I: Sets and Functions**

1. **Sets**

   Sets and their representations. Empty set. Finite and Infinite sets. Equal sets. Subsets. Subsets of a set of real numbers especially intervals (with notations). Power set. Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement.

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| 1.7 Power Set, Exercise 1.3 Ques. 5 1.12 Practical Problems on Union and Intersection of Two Sets Exercise 1.6 Examples 31–34 and Ques. 6–7 (Miscellaneous Exercise) Ques. 13–16 (Miscellaneous Exercise), Last Point in the Summary on the Page Last Point in the Summary |

## MAY

**2. Relations & Functions**

Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto R x R x R).Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, 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 functions, with their graphs. Sum, difference, product and quotients of functions.

**3. 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 $\sin^2 x + \cos^2 x = 1$, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing sin (x±y) and cos (x±y) in terms of sinx, siny, cosx&cosy and their simple applications.

Deducing identities like the following:

$\tan(x \pm y) = (\tan x \pm \tan y) / (1 \mp \tan x \tan y)$ , $\cot(x \pm y) = (\cot x \cot y \mp 1) / (\cot y \pm \cot x)$ $\sin\alpha \pm \sin\beta = 2\sin 1/2\ (\alpha \pm \beta) \cos 1/2\ (\alpha \mp \beta)$

$\cos\alpha + \cos\beta = 2\cos 1/2\ (\alpha + \beta) \cos 1/2\ (\alpha - \beta)$

$cos\alpha - cos\beta = -2sin\ 1/2\ (\alpha + \beta)\ 1/2\ (\alpha - \beta)$

Identities related to sin2x, cos2x, tan2 x, sin3x, cos3x and tan3x.

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| 3.5 Trigonometric Equations (up to Exercise 3.4) Last five points in the Summary 3.6 Proofs and Simple Applications of Sine and Cosine Formulae |

## JULY

**Unit-II: Algebra**

**4. Complex Numbers and Quadratic Equations**

Need for complex numbers, especially $\sqrt{-1}$, to be motivated by inability to solve some of the quardratic equations. Algebraic properties of complex numbers. Argand plane.

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| 5.5.1 Polar Representation of a Complex Number 5.6 Quadratic Equation Example 11 and Exercise 5.3 Examples 13, 15, 16 Ques. 5–8, 9 and 13 (Miscellaneous Exercise) Last three points in the Summary 5.7 Square-root of a Complex Number |

## AUGUST

**5. Linear Inequalities**

Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.

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| 6.4 Graphical Solution of Linear Inequalities in Two Variables 6.5 Solution of System of Linear Inequalities in Two Variables Last three points in the Summary |

**6. Sequence and Series**

Sequence and Series. Arithmetic Progression (A. P.). Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.

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| 9.4 Arithmetic Progression (A.P.) (up to Exercise 9.2) 9.7 Sum to n terms of Special Series Examples 21, 22 and 24 Ques. 1–6, 12, 15, 16, 20, 23–26 (Miscellaneous Exercise) Point 3 and 4 in the Summary |

## SEPTEMBER

**Revision**

## OCTOBER

**7. Binomial Theorem**

History, statement and proof of the binomial theorem for positive integral indices.Pascal's triangle, General and middle term in binomial expansion, simple applications.

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| 8.3 General Middle Terms Example 17 and Ques. 1–3, and 8 (Miscellaneous Exercise) Last two points in the Summary |

**8. Permutation and Combination**

Fundamental principle of counting.Factorialn. (n!) Permutations and combinations, derivation of Formulae for P(n,r) and C(n,r) and their connections, simple applications.

## NOVEMBER

**Unit-III: Coordinate Geometry**

**9. Straight Lines**

Brief recall of two dimensional geometry from earlier classes. Shifting of origin. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form and normal form. General equation of a line. Equation of family of lines passing through the point of intersection of two lines. Distance of a point from a line.

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| 10.2.4 Collinearity of Three Points (Examples 4–5 and Ques. 8, 13–14 in Exercise 10.1) 10.3.6 Normal Forms Ques. 8 in Exercise 10.2 10.4 General Equation of a Line Ques. 3 in Exercise 10.3 Ques. 2 (Miscellaneous Exercise) Fourth Last Point in the Summary 10.6 Equation of Family of Lines Passing Through the Points of Intersection of Two Lines 10.7 Shifting of Origin, |

**10. Conic Sections**

Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.

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| 11.5.2 Special Cases of an Ellipse |

## DECEMBER

**11. Introduction to Three-dimensional Geometry**

Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points.

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| 12.5 Section Formula Exercise 12.3 Ques. 4 and 5 (Miscellaneous Exercise), Last Three Points in the Summary |

**Unit-IV: Calculus**

**12. 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. Derivatives of polynomial and trigonometric functions.

## JANUARY

**Unit-VI: Statistics and Probability**

**13. Statistics**

Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.

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| 15.6 Analysis of Frequency Distribution Ques. 6 (Miscellaneous Exercise) and last point in the Summary |

**14. Probability**

Random experiments; outcomes, sample spaces (set representation). Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events.

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| 16.1 Introduction 16.2 Random Experiment First Two Points in the Summary |

**Revision**

**Note : Deleted topics are mentioned in box.**

# ACCOUNTANCY

## APRIL

**Chapter-1:** Meaning, Objective, Scope and Nature of Accounting
**Chapter-2:** Basic Accounting Terms
**Chapter-3:** Accounting Principles
**Chapter-4:** Process and Bases of Accounting
**Chapter-5:** Accounting Standards

## MAY

**Chapter-6:** Accounting Equation
**Chapter-7:** Double entry system
**Chapter-9:** Journal
**Chapter-10:** Accounting for Goods & Service Tax (GST)
**Chapter-13:** Ledger

## JULY

**Chapter-11:** Cash Book
**Chapter-12:** Other Subsidiary Books
**Chapter-14:** Trial Balance

## AUGUST

**Chapter-16:** Bank Reconciliation Statement
**Chapter-17:** Depreciation

## SEPTEMBER

**Revision**

## OCTOBER

**Chapter-18:** Provisions and Reserves
**Chapter-19:** Capital & Revenue
**Chapter-15:** Rectification of Errors

## NOVEMBER

**Chapter-20:** Financial Statements – Without Adjustments
**Chapter-21:** Financial Statements - With Adjustments
**Chapter-22:** Accounts from incomplete records

## DECEMBER

**Revision**

## JANUARY

**Revision**

# BUSINESS STUDIES

## APRIL

**Unit 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 and 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 subgroups
Commerce-trade: (types-internal, external; wholesale and retail) and auxiliaries to trade; (banking, insurance, transportation, warehousing, communication, and advertising) – meaning
Business risk-Concept

## MAY

**Unit 1: Evolution and Fundamentals of Business (Continued)**

**Unit 2: Forms of Business organizations**

Sole Proprietorship-Concept, merits and limitations.
Partnership - Concept, types, merits and limitation of partnership, registration of a partnership firm, partnership deed. Types of partners
Partnership vs. Limited Liability Partnership (LLP)
Formation of company - stages, important documents to be used in formation of a company
Choice of form of business organization

## JULY

**Unit 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.
Global Enterprises – Feature. Joint ventures, Public private partnership – concept .

**Unit 4: Business Services**

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 marine insurance – concept,Postal Service - Mail, Registered Post, Parcel, Speed Post, Courier - meaning

## AUGUST

**Unit 5: Emerging Modes of Business**

E - business: concept, scope and benefits

Business Process Outsourcing (BPO): Concept, need and scope

**Unit 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 and Elements

## SEPTEMBER

**Revision**

## OCTOBER

**Part B: Finance and Trade**

**Unit 7: Sources of Business Finance**

Concept of business finance

Owners' funds - equity shares, preferences share, retained earnings, Global Depository receipt (GDR), American Depository Receipt (ADR) and International Depository Receipt (IDR) – concept

Borrowed funds: debentures and bonds, loan from financial institution and commercial banks, public deposits, trade credit, Inter Corporate Deposits (ICD).

**Unit 8: Small Business and Enterprises**

Entrepreneurship Development (ED): Concept, Characteristics and Need. Process of Entrepreneurship Development: Start-up India Scheme, ways to fund start-up. Intellectual Property Rights and Entrepreneurship

Small scale enterprise as defined by MSMED Act 2006 (Micro, Small and Medium Enterprise Development Act)

Role of small business in India with special reference to rural areas

Government schemes and agencies for small scale industries: National Small Industries Corporation (NSIC) and District Industrial Centre (DIC) with special reference to rural, backward areas

## NOVEMBER

**Unit 9: Internal Trade**

Internal trade - meaning and types services rendered by a wholesaler and a retailer

Types of retail-trade-Itinerant and small scale fixed shops retailers

Large scale retailers-Departmental stores, chain stores - concept

GST (Goods and Services Tax): Concept and key-features

## DECEMBER

**Unit 10: International Trade**

International trade: concept and benefits

Export trade – Meaning and procedure

Import Trade - Meaning and procedure

Documents involved in International Trade; indent, letter of credit, shipping order, shipping bills, mate's receipt (DA/DP)

World Trade Organization (WTO) meaning and objectives

## JANUARY

**Unit 10: International Trade (Continued)**

**Revision**

# ECONOMICS

## APRIL

**PART-B Introductory Microeconomics**

**Introduction**

Meaning of microeconomics and macroeconomics; positive and normative economics
What is an economy? Central problems of an economy: what, how and for whom to produce; opportunity cost, PPC, Marginal opportunity cost.

**Consumer's Equilibrium**

Consumer's equilibrium - meaning of utility, marginal utility, law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis.
Indifference curve analysis of consumer's equilibrium-the consumer's budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) and conditions of consumer's equilibrium.

## MAY

**PART-A Statistics for Economics**

**Diagrammatic Presentation of Data:**

(i) Geometric forms (bar diagrams and pie diagrams)
(ii) Frequency diagrams (histogram, polygon and Ogive)
(iii) Arithmetic line graphs (time series graph).

**Introduction**

What is Economics?
Meaning, scope, functions and importance of statistics in Economics

## JULY

**PART-A Statistics for Economics**

**Collection of data**

sources of data - primary and secondary; how basic data is collected with concepts of Sampling; methods of collecting data; some important sources of secondary data: Census of India and National Sample Survey Organisation.

**Organisation of Data**

Meaning and types of variables; Frequency Distribution.

**Presentation of Data:**

Tabular Presentation

**PART-B Introductory Microeconomics**

**Demand, Elasticity of Demand**

Demand, market demand, determinants of demand, demand schedule, demand curve and its slope, movement along and shifts in the demand curve; price elasticity of demand - factors affecting price elasticity of demand; measurement of price elasticity of demand – percentage-change method and Total Expenditure method.

## AUGUST

**PART-B Introductory Microeconomics**

**Demand, Elasticity of Demand (Cont.)**

**PART-A Statistics for Economics**

**Measures of Central Tendency**

Arithmetic mean- Direct, Short cut and Step deviation method, Combined, Corrected and Weighted mean.

## SEPTEMBER

**PART-A Statistics for Economics**
**Measures of Central Tendency (Cont.)**

**Revision**

## OCTOBER

**PART-A Statistics for Economics**
**Measures of Central Tendency**
Median and Mode (Analysis and Grouping Table)
**PART-B Introductory Microeconomics**
**Production Function**
Meaning of Production Function – Short-Run and Long-Run
Total Product, Average Product and Marginal Product.
Returns to a Factor, Law of Variable Proportion
**Concept of Cost**
Short run costs - total cost, total fixed cost, total variable cost; Average cost; Average fixed cost, average variable cost and marginal cost-meaning and their relationships.

## NOVEMBER

**PART-B Introductory Microeconomics**
**Concept of Cost (Cont.)**
**Concept of Revenue**
Total, average and marginal revenue - meaning and their relationship.
**Producer's Equilibrium**
Meaning and its conditions in terms of MC/MR approach.

**PART-A Statistics for Economics**
**Correlation**
Meaning and properties, scatter diagram; Measures of correlation - Karl Pearson's method (two variables ungrouped data)
Rank Correlation
**Index Numbers**
Meaning, types - wholesale price index, consumer price index, uses of index numbers; Inflation and index numbers.

## DECEMBER

**Index Numbers (Cont.)**
**PART-B Introductory Microeconomics**
**Supply and Elasticity of Supply**
Supply, market supply, determinants of supply, supply schedule, supply curve and its slope, movements along and shifts in supply curve, price elasticity of supply; measurement of price elasticity of supply - percentage-change method.

**Forms of Market**
Perfect Competition
**Price Determination**
Determination of market equilibrium and effects of
Shifts in demand and supply

## JANUARY

**Price Determination (Cont.)**

Price ceiling and Price Floor

# COMPUTER SCIENCE

## APRIL

**Chapter : Python Programming Fundamentals**

Knowledge of data types: Number (integer, floating point, complex), boolean, sequence(string, list, tuple), None, Mapping(dictionary), mutable and immutable data types. Operators: arithmetic operators, relational operators, logical operators, assignment operators, augmented assignment operators, identity operators (is, is not), membership operators (in not in) Expressions, statement, type conversion, and input/output: precedence of operators, expression, evaluation of an expression, type-conversion (explicit and implicit conversion), accepting data as input from the console and displaying output. Errors- syntax errors, logical errors, and run-time errors

## MAY

**Chapter: Conditional and Looping Constructs**

Introduction, use of indentation, sequential flow, conditional and iterative flow .Conditional statements: if, if-else, if-elif-else, flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number. Iterative Statement: for loop, range(), while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number, etc.

**Chapter: Strings in Python**

Introduction, string operations (concatenation, repetition, membership and slicing), traversing a string using loops, built-in functions/methods–len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(),lstrip(), rstrip(), strip(), replace(), join(), partition(), split()

## JULY

**Chapter: Lists in Python**

Introduction, indexing, list operations (concatenation, repetition, membership and slicing), traversing a list using loops, built-in functions/methods–len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists, suggested programs: finding the maximum, minimum, mean of numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list.

## AUGUST

**Chapter: Tuples and Dictionaries**

Introduction, indexing, tuple operations (concatenation, repetition, membership and slicing); built-in functions/methods – len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple; suggested programs: finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple.

Dictionary: introduction, accessing items in a dictionary using keys, mutability of a dictionary (adding a new term, modifying an existing item), traversing a dictionary, built-in functions/methods – len(), dict(), keys(), values(), items(), get(), update(), del(), del, clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), sorted()

## SEPTEMBER

**Revision**

**Chapter: SQL Basics**

Relational Data Model; Common MySql Data types, Accessing database in MySQL, Creating Tables, Inserting data into tables, Making Simple Queries through Select Command, Eliminating Redundant Data( with Keyword *DISTINCT*) , Condition Based on Range, Condition Based on List, Modifying Data in Tables, Altering Tables, Dropping Tables, Text/ String Function, Numeric Functions, Date/ Time

Functions.

**OCTOBER**

**Chapter: SQL Basics (Cont.)**

**NOVEMBER**

**Chapter: Society, Laws and Ethics**

Digital Footprints, Digital Society and Netizen: net etiquettes, communication etiquettes, social media etiquettes Data Protection: Intellectual property rights (copyright, patent , trademark), violation of IPR(plagiarism, copyright infringement, trademark infringement), open source software and licensing (Creative Commons, GPL and Apache) ,Cyber Crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, cyber trolls, cyber bullying, Cyber safety: safely browsing the web, identity protection, confidentiality , Malware: viruses, trojans, adware , E-waste management: proper disposal of used electronic gadgets. , Information Technology Act (IT Act), Technology and society: Gender and disability issues while teaching and using computers

**DECEMBER**

**Chapter: Boolean Logic**

AND, OR, NOT Gates, Logic Circuits, De Morgan's Law

**JANUARY**

**Chapter: Introduction to Python Modules**

Modules in Python, Module Aliasing, Member Aliasing, Locating Modules, Standard Built-in Python Modules, Built-in Functions

## PHYSICAL EDUCATION

**APRIL**

**Unit I Changing Trends & Career in Physical Education**

- Concept, Aims & Objectives of Physical Education
- Changing Trends in Sports- playing surface, wearable gears and sports equipment, Technological advancements
- Career Options in Physical Education
- Development of Physical Education in India – Post Independence
- Khelo-India and Fit-India Program

**MAY**

**Unit II Olympics Value Education**

- Ancient and Modern Olympics
- Olympics Values (Excellence, Friendship & Respect)
- Olympics - Symbols, Motto, Flag, Oath, and Anthem
- Olympic Movement Structure - IOC, NOC, IFS, Other members

**Unit III Yoga**

- Meaning & Importance of Yoga
- Introduction to Ashtanga Yoga
- Introduction to Yogic Kriyas (Shat Karma)
- Pranayama and its types.
- Active Lifestyle and stress management through Yoga

**JULY**

**Unit IV Physical Education & Sports for CWSN (Children with Special Needs - Divyang)**

- Concept of Disability and Disorder
- Types of Disability, its causes & nature (Intellectual disability, Physical disability) Disability Etiquette.
- Aim & Objective of Adaptive Physical Education

- Role of various professionals for children with special needs
  (Counsellor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist & Special Educator)

**AUGUST**

**Unit V Physical Fitness, Health and Wellness**
- Meaning and Importance of Wellness, Health and Physical Fitness
- Components/Dimensions of Wellness, Health and Physical Fitness
- Traditional Sports & Regional Games for promoting wellness
- Leadership through physical activity and sports.
- Introduction of First Aid- PRICE

**SEPTEMBER**

**Revision**

**OCTOBER**

**Unit VI Test, Measurement & Evaluation**
- Define Test, Measurements and Evaluation.
- Importance of Test, Measurements and Evaluation in Sports.
- Calculation of BMI, Waist – Hip Ratio, Skin fold measurement (3-site)
- Somato Types (Endomorphy, Mesomorphy & Ectomorphy)
- Measurements of health-related fitness

**Unit VII Fundamentals of Anatomy, Physiology in Sports**
- Definition and Importance of Anatomy and Physiology in exercise and sports
- Functions of Skeletal system, classification of bone and types of joints. Properties and Functions of Muscles
- Function and Structure of Circulatory system and heart.
- Function and Structure of Respiratory system.

**NOVEMBER**

**Unit VIII Fundamentals of Kinesiology and Biomechanics in Sports**
- Definition and Importance of Kinesiology and Biomechanics in sports
- Principles of Biomechanics
  Kinetic and Kinematics in Sports
- Types of Body Movements - Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation
- Axis and Planes – Concept and its application in body movements

**DECEMBER**

**Unit IX Psychology & Sports**
- Definition & Importance of Psychology in Physical Education & Sports
- Developmental Characteristics at Different Stages of Development;
- Adolescent Problems & Their Management
- Team Cohesion and Sports
- Introduction to Psychological Attributes: Attention, Resilience, Mental Toughness

**JANUARY**

**Unit X Training and Doping in Sports**
- Concept and Principles of Sports Training
- Training Load: Over Load, Adaptation, and Recovery
- Warming-up & Limbering Down –Types, Method &Importance
- Concept of Skill, Technique, Tactics &Strategies
- Concept of Doping and its disadvantages

# POLITICAL SCIENCE

## APRIL

1. **Constitution**
   Constitution: Why and How, The making of the Constitution
   Fundamental Rights and Duties, Directive Principles of State Policy, Constitutional Amendments.
2. **Election and Representation**
   Elections and Democracy, Election System in India,Electoral Reforms.

## MAY

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.

## JULY

4. **Executive**
   What is an Executive? Different Types of Executive. Parliamentary Executive in India, Prime Minister and Council of Ministers. Permanent Executive: Bureaucracy.

## AUGUST

5. **Judiciary**
   Why do we need an Independent Judiciary? Structure of the Judiciary, Judicial Activism, Judiciary Review. Judicial Over-reach.
6. **Federalism**
   What is Federalism? Evolution and Growth of the Indian Federalism: Quasi Federalism, Cooperative Federalism and Compititive Federalism.
7. **Local Governments**
   Why do we need Local Governments? Growth of Local Government in India, 73rd and 74th Amendments, implementation of 73rd and 74th Amendments. Working and Challenges of Local Government.

## SEPTEMBER

**Revision**

## OCTOBER

**Part B**

8. **Political Theory: An Introduction**
   What is Politics? Politics v/s Political Theory. Importance of Political Theory.

## NOVEMBER

9. **Liberty**
   Liberty v/s Freedom. Negative and Positive Liberty.
10. **Equality**
    Significance of Equality. What is Equality? Various dimensions of Equality. How can we promote Equality?
11. **Justice**
    What is Justice? Different dimensions of Justice. Distributive Justice.

## DECEMBER

12. **Rights**
    What are Rights? Where do Rights come from? Legal Rights and the State. Kinds of Rights. Human Rights.

13. **Citizenship**
    What is citizenship? Citizen and Nation, Citizen and Citizenship, Global Citizenship.

**JANUARY**

14. **Nationalism**
    Nations and Nationalism, Varients of Nationalism, Nationalism, Multiculuturalism and Pluralism
15. **Secularism**
    What is Secularism? What is Secular State? The Western and the Indian approaches to Secularism. Features of Indian Secularism.

# PSYCHOLOGY

**APRIL**

**CHAPTER 1: What is Psychology?**

What is Psychology?- Introduction, Psychology as a Discipline: Psychology as a Natural Science, and Psychology as a Social Science. Understanding Mind and Behaviour. Popular Notions about the Discipline of Psychology. Evolution of Psychology. Development of Psychology in India. Branches of Psychology. Psychology and Other Disciplines. Psychology in Everyday Life

**MAY**

**CHAPTER 2: Methods of Enquiry in Psychology**

Introduction. Goals of Psychological Enquiry. Steps in Conducting Scientific Research. Alternative Paradigms of Research. Nature of Psychological Data. Some Important Methods in Psychology: Observational Method, Experimental Method, Correlational Research, Survey Research, Psychological Testing, and Case Study Analysis of Data: Quantitative Method, and Qualitative Method. Limitations of Psychological Enquiry. Ethical Issues. PROJECT FILE

**JULY**

**CHAPTER 4: Human Development**

Introduction. Meaning of Development: Life-Span Perspective on Development. Factors Influencing Development. Context of Development. Overview of Developmental Stages: Prenatal Stage, Infancy, Childhood, Challenges of Adolescence, Adulthood, and Old Age.

**AUGUST**

**CHAPTER 5: Sensory, Attentional and Perceptual Processes**

Introduction. Knowing the world. Nature and varieties of Stimulus. Sense Modalities: Functional limitation of sense organs. Attentional Processes: Selective Attention, and Sustained Attention. Perceptual Processes: Processing Approaches in Perception. The Perceiver, Principles of Perceptual Organisation. Perception of Space, Depth and Distance: Monocular Cues and Binocular Cues. Perceptual Constancies. Illusions. Socio-Cultural Influences on Perception.

PRACTICAL ON DEPTH PERCEPTION

**SEPTEMBER**

**Half Yearly Examination**

**OCTOBER**

**CHAPTER 6: Learning**

Introduction. Nature of Learning. Paradigms of Learning. Classical Conditioning: Determinants of Classical Conditioning. Operant/Instrumental Conditioning: Determinants of Operant Conditioning- Key Learning Processes. Observational Learning. Cognitive Learning. Verbal Learning. Skill Learning. Factors Facilitating Learning. Learning Disabilities
PRACTICAL ON LEARNING

**NOVEMBER**

**CHAPTER 7: Human Memory**

Introduction. Nature of memory. Information Processing Approach: The Stage Model. Memory Systems: Sensory, Short-term and Long term Memories. Levels of Processing. Types of Long-term Memory: Declarative and Procedural; Episodic and Semantic. Nature and Causes of Forgetting: Forgetting due to Trace Decay, Interference and Retrieval Failure. Enhancing Memory: Mnemonics using Images and Organisation.

**CHAPTER 8: Thinking**

Introduction. Nature of Thinking: Building Blocks of Thought. The Processes of Thinking. Problem Solving. Reasoning. Decision-making. Nature and Process of Creative Thinking: Nature of Creative Thinking- Process of Creative Thinking. Thought and Language. Development of Language and Language Use.

**DECEMBER**

**CHAPTER 9: Motivation and Emotion**

Introduction. Nature of Motivation: Types of Motives: Biological Motives, Psychosocial Motives. Maslow's Hierarchy of Needs. Nature of Emotions. Expression of Emotions- Culture and Emotional Expression, and Culture and Emotional Labelling. Managing Negative Emotions. Enhancing Positive Emotions.

**JANUARY**

**REVISION**

## ARTIFICIAL INTELLIGENCE

**APRIL**

**Part-B(Subject-Specific Skills)**

**Chapter 1:Introduction :AI for everyone**
What is AI and Machine learning (ML),impact of AI on society, concept of deep learning(DL),supervised learning, non-supervised learning, artificial neural network(ANN), advantages of AI and DL, difference between AI,ML and DL.

**Part-A (Employability Skills)**

**Unit-1 Communication Skills-III**
Methods of Communication Verbal Non-verbal Visual ,Communication styles- assertive, aggressive, passive aggressive, submissive, etc.Writing skills to the following: Sentence Phrase Kinds of Sentences Parts of Sentence Parts of Speech Articles Construction of a Paragraph

**MAY**

**Part-B(Subject-Specific Skills)**

**Chapter 2: Unlocking Your Future In AI**

The Global Demand, Some Common Job Roles In AI, Essential Skills and Tools for Prospective AI Careers, Opportunities in AI across Various Industries

**JULY**

**Part-B(Subject-Specific Skills)**

**Chapter 3: Python Programming**

Level 1: Basics of python programming, character sets, tokens, modes, operators, datatypes, Control Statements Level 2: CSV Files, Libraries – NumPy, Pandas, Scikit-learn

**Part-A (Employability Skills)**

**Unit-2 Self-management Skills –III**
Describe the importance of dressing appropriately, looking decent and positive body language 2. Describe the term Grooming 3. Prepare a personal grooming checklist 4. Describe the techniques of self Exploration, Meaning and importance of time management – setting and prioritizing goals, creating a schedule, making lists of tasks, balancing work and leisure, using different optimization tools to break large tasks into Smaller tasks.

**AUGUST**

**Part-B(Subject-Specific Skills)**

**Chapter 4: - Introduction To Capstone Project**
Design Thinking , Empathy Map , Sustainable Development Goals , Capstone Project

**Chapter 5: - Data Literacy – Data Collection To Data Analysis**
What is Data Literacy?, Data Collection, Exploring Data, Statistical Analysis of data, Representation of data, Python Programs for Statistical Analysis and Data Visualization, Introduction to Matrices, Data Pre-processing, Data in Modelling and Evaluation

**SEPTEMBER**

**Revision**

**OCTOBER**

**Part-B (Subject-Specific Skills)**

**Chapter 6: Machine Learning Algorithms**

Machine Learning in a nutshell, Types of Machine Learning , Supervised Learning , Understanding Correlation, Regression, Finding the line, Linear Regression algorithm , Classification – How it works, Types, k – Nearest Neighbour algorithm . Unsupervised Learning , Clustering – How it works, Types, k

-means Clustering algorithm

**Part-A (Employability Skills)**

**Unit 3: Information & Communication Technology – III**
Introduction to word Processing. 2. Software packages for word processing. 3. Opening and exiting the word processor. 4. Creating a document, Editing Text 2. Wrapping and aligning the text 3. Font size, type and Face 4. Header and Footer 5. Auto correct 6. Numbering and bullet 7. Creating table 8. Find and replace 9. Page numbering. 10. Printing document 11. Saving a document in various formats.

**NOVEMBER**

**Part-B(Subject-Specific Skills)**

**Chapter 7: Leveraging Linguistics And Computer Science**

Understanding Human Language Complexity , Introduction to Natural Language Processing (NLP) - Emotion Detection and Sentiment Analysis, Classification Problems, Chatbot , Phases of NLP , Applications of NLP

**Part-A (Employability Skills)**

**Unit 4: Entrepreneurial Skills – III**
Values in general and entrepreneurial values 2. Entrepreneurial value orientation with respect to innovativeness, independence, Outstanding performance and respect for work Attitudes in general and entrepreneurial Attitudes 2. Using imagination/ 3. Intuition Tendency to take moderate risk 4. Enjoying freedom of expression and action 5. Looking for economic Opportunities 6. Believing that we can change the Environment 7. Analyzing situation and planning action 8. Involving in activity.

**DECEMBER**

**Part-B(Subject-Specific Skills)**

**Chapter 8: AI Ethics And Values**
Ethics in Artificial Intelligence , The five pillars of AI Ethics, Bias, Bias Awareness, Sources of Bias, Mitigating Bias in AI Systems, Developing AI Policies , Moral Machine Game , Survival of the Best Fit Game

**Part-A (Employability skills)**

**Unit 5: Green Skills – III**
Main sectors of green economy- E waste management, green transportation, renewal energy, green construction, water Management 2. Policy initiatives for greening economy in India,Stakeholders in green Economy 2. Role of government and private agencies in greening cities, buildings, tourism, industry, transport, renewable energy, waste management, agriculture, water, forests and fisheries.

**JANUARY**

**Revision of the syllabus**

**MUSIC**

**APRIL**

1. Definition Naad, Shruti, Swar
2. Life sketch and contribution towards music by Mian tansen
3. Write the introduction and notation of Teental with ek gun dugun tigun and chaugun layakaries.
4. One Razakhani gat in raag Bihag with introduction, elaborations, toras and jhala.

## MAY

1. Definitions: saptak, thaat , jaati.
2. One Razakhani gat in raag Bheempalasi with introduction, elaborations, toras and jhala.
3. Write the introduction and notation of ektaal with ekgun, dugun, tigun and chaugun.
4. Brief history of Masitkhani gat and Razakhani gat
5. Brief history of drupad.

## JULY

1. Definitions :laya and taal.
2. Write the introduction and notation of chautaal with ekgun, dugun, tigun and chaugun.
3. Life sketch and contribution towards music by Pt. V.N. Bhatkhande.
4. One Masitkhani gat in any prescribed raga .

## AUGUST

1. Definitions : Raag and Gat.
2. Knowledge and structure of instrument opted for.
3. One Razakhani gat in raag Bhairavi with introduction, elaborations, toras and jhala.
4. Brief history of musical elements in Natya Shastra.

## SEPTEMBER

**Revision**

## OCTOBER

1. Definitions: Desi -Margi.
2. Life sketch and contribution towards music by Pt. V.D. Paluskar.

## NOVEMBER

1. Brief study of Dhrupad.
2. Critical study of prescribed ragas along with recognising ragas from phases of swaras and elaborating them.

## DECEMBER

1. Recitation of Thekas of all the Taals prescribed in the syllabus.

## JANUARY

**Revisions**

# DANCE

## APRIL

Definition: Nritta,Nritya,Natya,Lasya,Anga,Upanga,Pratyaga,Taali,khali,Sam,Tihaayii.
Taal: Teen Taal, JhapTaal,Dadra Taal
Gharana: Lukhnow.

## MAY

Gharana:- Jaipur
A brief history of Indian Classical dances Bharatnatyam, Manipuri
Practical Work:-Tatkaar in Teen Taal, That, Tora, Tihaayii
Ablity to notate the that ,amad in teen taal

## JULY

Distinctive aspects of kathak (using Ghungrua, Chakkars, Upaj, Costume etc.)
Explain ”Abhinay “and its types.

## AUGUST

Definition: Sam,Taali,Khaali,Tihayii,,Amad, Tora, Vandana, Paran, Tukra.
Taal:- Rupak,Dhamaar Taal.
Practical work:- Paran, Amad, Salami.

**SEPTEMBER**

**Revision**

**OCTOBER**

Rasa definition and explanation of Nine Rasas.
Gat bhav ,gat nikas,bharamri bhed
Practical work:-revision of Teen Taal

**NOVEMBER**

A Brief history of Kathak dance.
Practical work:-Padant of all Taal and foot work of Jhap Taal

**DECEMBER**

Definition:-Angahara, Lokdharmi.
Revision of practical work and padant.

**JANUARY**

Definition :-Sangeet,
Costume and makeup in kathak Dance

## PAINTING

**APRIL**

**THEORY**: (i) SIX LIMBS OF INDIAN PAINTING
(ii) ELEMENTS AND PRINCIPLES OF VISUAL ART
**PRACTICAL**: (i) ABSTRACT ART
(ii) STILL LIFE

**MAY**

**THEORY**: (i) THE RAJASTHANI SCHOOL OF MINIATURE PAINTINGS
(ii) DRAWING AND PAINTING MATERIAL
(iii) PERSPECTIVE
**PRACTICAL**: (i) LANDSCAPE
(ii) STILL LIFE

**JULY**

**THEORY**: (i) THE PAHARI SCHOOL OF MINIATURE PAINTINGS
(ii) TECHNIQUES IN PAINTING
**PRACTICAL**: (i) LANDSCAPE
(ii) STILL LIFE

**AUGUST**

**THEORY**: (i) REVISION OF COVERED SYLLABUS
**PRACTICAL**: (i) LANDSCAPE
(ii) STILL LIFE

**SEPTEMBER**

**THEORY**: (i) REVISION OF COVERED SYLLABUS
**PRACTICAL**: (i) FOLK ART PAINTING

**OCTOBER**

**THEORY**: (i) THE MUGHAL SCHOOL OF MINIATURE PAINTINGS
**PRACTICAL**: (i) LANDSCAPE
(ii) COLLAGE PAINTING

**NOVEMBER**

**THEORY**: (i) THE DECCAN SCHOOL OF MINIATURE PAINTINGS
**PRACTICAL**: (i) LANDSCAPE
(ii) STILL LIFE

**DECEMBER**

**PRACTICAL**: SKETCHING

**JANUARY**

**THEORY**: REVISION OF COVERED SYLLABUS

**PROJECTS:** **2 COMPOSITIONS WILL BE PREPARED DURING THE MONTH OF JUNE**

## LEGAL STUDIES

**APRIL**

**Unit 1: Introduction to Political Institutions**
Chapter 1: Concept of State
Chapter 2: Forms and Organs of Government
Chapter 3: Separation of Powers

**MAY**

**Unit 2: Basic Features of the Constitution of India**
Chapter 1: Salient Features of the Constitution of India
Chapter 2: Administrative Law

**JULY**

**Unit 3: Jurisprudence, Nature and Sources of Law**
Chapter 1: Jurisprudence, Nature and Meaning of Law
Chapter 2: Classification of Laws

**AUGUST**

Chapter 3: Sources of Laws
Chapter 4: Law Reforms
Chapter 5: Cyber Laws, Safety and Security in India

**SEPTEMBER**

Revision

**OCTOBER**

**Unit 4: Judiciary: Constitutional, Civil and Criminal Courts and Processes**
Chapter 1: Judiciary: Constitutional, Civil and Criminal Courts and Processes

**NOVEMBER**

**Unit 5: Family Justice System**
Chapter 1: Institutional Framework – Marriage and Divorce
Chapter 2: Child Rights

**DECEMBER**

Chapter 3: Adoption
Chapter 4: Property, Succession and Inheritance
Chapter 5: Prevention of Violence against Women

**JANUARY**

**Revision**

## ELECTRONICS TECHNOLOGY

**APRIL**

**Employability Skills**
**Unit 1: Communication Skills-III**

**Subject Specific:**

**Ch-1 Overview of Atom, Sub-Atomic Particles and CRO**

1) Brief History of Electronics.
2) Atom and its elements, Bohr Atomic model, Atomic energy level.
3) Electron, Force, Field intensity, Potential, Energy, current, current density, Ionization potential.
4) Electric field, Magnetic field, Motion of charged particles in electric and magnetic field.
5) Overview of CRO, Electronic and Magnetic deflection in CRO, Applications.

## MAY

**Employability Skills**

**Unit 2: Self-management Skills-III**

**Subject Specific:**

**Ch-2 Voltage and Current**

1) Resistance, Ohm's law, V-I Characteristics, Resistors, Capacitors, Inductors.
2) Voltage& Current sources, Symbols & Graphical representation, Conversion of current and voltage sources.
3) Overview of AC, DC, Cells and Batteries, Energy and Power.

## JULY

**Employability Skills**

**Unit 3: Information and Communication Technology Skills-III**

**Unit 4: Entrepreneurial Skills-III**

**Subject Specific:**

**Ch-2 Voltage and Current(Conti.)**

**Ch-3 Basics of Semiconductor**

1) Semiconductor materials, Energy band structure of Insulators, Metals and Semiconductors, Energy gap, Field and Photo-electric emission.
2) Intrinsic & Extrinsic semiconductor, N-type and P-type semiconductor, Drift current, Diffusion current and Total current, Mobility of charges, Effects of temperature on Conductivity of semiconductor.

## AUGUST

**Subject Specific:**

**Ch-3 Basics of Semiconductor (Conti.)**

3) PN junction diode, depletion layer, potential barrier, Forward & Reverse bias, V-I Characteristic, Effects of temperature, Resistance levels, Breakdown in Junction diode, Zener diode, Photo diode, LED, Types and applications of diode.
4) Diode as a rectifier, Half wave and full wave rectification, Voltage multipliers, Zener diode Regulator.
5) Special information – (Introduction to Filters, Clippers, Clampers).

## SEPTEMBER

**Revision**

## OCTOBER

**Employability Skills**

**Unit 5: Green Skills-III**

**Subject Specific:**
**Ch-4 Bipolar Junction Transistor**

1) Construction and operation of NPN and PNP transistors, Biasing of BJT.
2) CB, CE and CC configuration, Characteristics and transistor parameters for CB, CE, CC configuration.
3) Introduction to FET, JFET, MOSFET, CMOS and VMOS, Characteristics of various transistors, Comparison of various transistors.

## NOVEMBER

**Subject Specific:**
**Ch-4 Bipolar Junction Transistor (Conti.)**
**Ch-5 Transistor Amplifier and Applications**

1) Introduction, Single and Multi stage amplifiers, General amplifier characteristics, Feedbacks in amplifier.
2) Introduction to Oscillators, Multi-Vibrators and Signal generator.
3) Special Information - (Introduction to Thyristors, PNPN diode, SCR, LASCR, DIAC, TRIAC).

## DECEMBER

**Subject Specific:**
**Ch-5 Transistor Amplifier and Applications (Conti.)**

## JANUARY

**Revision**

# PUNJABI

## ਅਪ੍ਰੈਲ

**ਵਿਸ਼ਾ–** ਅੰਗਰੇਜੀ ਤੋਂ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ
**ਉਪ–ਵਿਸ਼ਾ–** ਦਫ਼ਤਰੀ ਸ਼ਬਦਾਵਲੀ
**ਵਿਸ਼ਾ –** ਅੰਗਰੇਜੀ ਤੋਂ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ
**ਉਪ–ਵਿਸ਼ਾ–** ਵੱਖ–ਵੱਖ ਵਿਸ਼ਿਆਂ ਨਾਲ ਸੰਬੰਧਿਤ ਸ਼ਬਦਾਲੀ
**ਵਿਸ਼ਾ–** ਅੰਗਰੇਜੀ ਤੋਂ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ
**ਉਪ–ਵਿਸ਼ਾ–** ਬੈਕ,ਰੇਲਵੇ ਤੇ ਡਾਕ,ਬੀਮਾ ਸੇਵਾਵਾਂ ਤੇ ਕੰਪਿਊਟਰ ਨਾਲ ਸੰਬੰਧਿਤ ਵਾਕ
**ਵਿਆਕਰਣ**
**ਵਿਸ਼ਾ–** ਮੁਹਾਵਰੇ

## ਮਈ

**ਵਿਸ਼ਾ–** ਲੋਕ–ਗੀਤ
**ਉਪ–ਵਿਸ਼ਾ–** ਸੁਹਾਗ,ਘੋੜੀਆਂ
**ਵਿਸ਼ਾ–** ਲੋਕ–ਗੀਤ
**ਉਪ–ਵਿਸ਼ਾ–** ਸਿੱਠਣੀਆਂ,

## ਜੂਨ

**ਵਿਸ਼ਾ–** ਲੋਕ–ਗੀਤ
**ਉਪ–ਵਿਸ਼ਾ–** ਟੱਪਾ
**ਵਿਆਕਰਣ**
**ਵਿਸ਼ਾ–** ਇਸ਼ਤਿਹਾਰ,ਸੱਦਾ–ਪੱਤਰ

## ਜੁਲਾਈ

**ਵਿਸ਼ਾ–** ਲੋਕ–ਗੀਤ
**ਉਪ–ਵਿਸ਼ਾ–** ਬੋਲੀਆਂ,ਢੋਲਾ
**ਵਿਸ਼ਾ–** ਲੋਕ–ਗੀਤ
**ਉਪ–ਵਿਸ਼ਾ–** ਮਾਹੀਆ.ਬੁਝਾਰਤਾਂ

## ਅਗਸਤ

**ਵਿਸ਼ਾ–** ਮੁਹਾਵਰੇ
ਉਪ ਵਿਸ਼ਾ– ਅਰਥ ਸਪੱਸ਼ਟ ਕਰਦੇ ਹੋਏ ਵਾਕ ਬਣਾਉਣਾ(ਟ ਤੋਂ ੜ ਤੱਕ) ਛੋਟੇ ਪ੍ਰਸ਼ਨ,ਬਹੁਵਿਕਲਪੀ
**ਵਿਸ਼ਾ–** ਪ੍ਰੀਤ–ਕਥਾਵਾਂ
**ਉਪ–ਵਿਸ਼ਾ–** ਸਾਰ,ਵਿਸ਼ਾ ਵਸਤੂ,ਪ੍ਰਸ਼ਨ ਉੱਤਰ

## ਸਤੰਬਰ

**ਛਿਮਾਹੀ–ਪ੍ਰੀਖਿਆ**

## ਅਕਤੂਬਰ

**ਵਿਸ਼ਾ–** ਦੰਤ–ਕਥਾਵਾਂ
**ਉਪ–ਵਿਸ਼ਾ–** (ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ,ਪ੍ਰਸ਼ਨ–ਉੱਤਰ)
**ਵਿਸ਼ਾ–** ਪ੍ਰੀਤ–ਕਥਾਵਾਂ
**ਉਪ–ਵਿਸ਼ਾ–** ਸਾਰ,ਵਿਸ਼ਾ ਵਸਤੂ,ਪ੍ਰਸ਼ਨ ਉੱਤਰ
**ਵਿਆਕਰਣ**
**ਵਿਸ਼ਾ–** ਮੁਹਾਵਰੇ
ਉਪ ਵਿਸ਼ਾ– ਅਰਥ ਸਪੱਸ਼ਟ ਕਰਦੇ ਹੋਏ ਵਾਕ ਬਣਾਉਣਾ(ਟ ਤੋਂ ੜ ਤੱਕ) ਛੋਟੇ ਪ੍ਰਸ਼ਨ,ਬਹੁਵਿਕਲਪੀ

## ਨਵੰਬਰ

**ਵਿਸ਼ਾ–** ਅਖਬਾਰ ਦੇ ਸੰਪਾਦਕ ਨੂੰ ਪੱਤਰ
**ਵਿਸ਼ਾ–** ਲੇਖ
**ਉਪ–ਵਿਸ਼ਾ–** ਸਮਾਜਕ, ਸੱਭਿਆਚਾਰਕ ਤੇ ਮਨੋਰੰਜਕ ਵਿਸ਼ੇ ਸੰਬੰਧੀ

**ਦਸੰਬਰ**

**ਵਿਆਕਰਣ ਅਤੇ ਸਾਹਿਤ ਦੇ ਪਾਠਕ੍ਰਮ ਦੀ ਦੁਹਰਾਈ**

**ਜਨਵਰੀ**

**ਕਰਵਾਏ ਗਏ ਪਾਠਕ੍ਰਮ ਦੀ ਦੁਹਰਾਈ**

**ਫਰਵਰੀ**

ਲੇਖ,ਪੱਤਰ
ਲੇਖ ਤੇ ਪੱਤਰ ਦੀ ਰੂਪਰੇਖਾ

## Financial Markets Management

**April**

**C**hapter-1 Markets and Financial Instruments
Employability Skills
Unit-1 Communication Skills

**May**

Chapter-2 Primary and Secondary Market
Employability Skills
Unit-2 Self-Management Skills

**July**

Chapter-3 Mutual Funds Products and Features
Employability Skills
Unit-3 ICT Skills

**August**

Chapter-4 ETF's , Debt and Liquid Funds
Employability Skills
Unit-4 Entrepreneurship Skills

**September**

Revision + Half Yearly Exams

**October**

Chapter-5 Taxation and Regulations
Employability Skills
Unit-5 Green Skills

**November**

Chapter-6 Quantitative Evaluation of Mutual Fund Schemes

**December**

Revision

# Entrepreneurship

## April

**UNIT 1. Entrepreneurship: Concepts and Functions**

Concepts,Functions of Entrepreneurs
Need and Importance of Entrepreneurshi, Myths about Entrepreneur,
Pros and Cons of Entrepreneurship (Advantages and Disadvantages of Entrepreneurship)
Startup and Its Stages
Entrepreneurship: The Indian scenario

## May

**UNIT-II An Entrepreneur**

Why Entrepreneurship for You,
Types of Entrepreneurs, Types of Business, Competencies and Characteristics of Ethical Entrepreneurship,Characteristics of an Entrepreneur,Values,Entrepreneurs' Attitudes Positive and Negative Attitudes,
Essential Attitudes for an Entrepreneur, Entrepreneurial Motivation,
Difference of Mindset of an Employee and an Entrepreneur, Importance of Intrapreneur in an Organisation

## July

**UNIT-III. Entrepreneurial Journey**

Self-assessment of Qualities, Skills, Resources and Dreams,Generation of Idea,
Business Idea vs Business Opportunity,
Feasibility Study,Opportunity Assessment,
Business Plan Role of Society and Family in Growth of an Entrepreneur
Challenges Faced by Women in Entrepreneurship, Role of Net working in Entrepreneurship

## August

**UNIT-IV. Entrepreneurship as Innovation and Problem Solving**

Entrepreneur: A Problem Solver
Innovations Leading to Entrepreneurial Ventures
New industries of New Age Economy
Social Entrepreneurship - Concept and Importance (As Problem Solving),The Role of Technology and Social Media in Creating New Forms of Firms,
Organisations, Network and Cooperative Clusters,Business Risk
Barriers to Entrepreneurship
,Help and Support to Entrepreneurs, Training Institutions of Entrepreneurship in India,Business Incubator and Innovation Centre

## October

**UNIT-V. Concept of Market**

Market,Opportunities or Benefits of E-business or Role of E-business and E-commerce,Analysing the Market Environment,Researching the Market,Research Instruments,Types of Market Research,Market Sensing and Market Testing,Business Model Proof of Concept, Expanding Markets,Market Expansion

Grid, Ways of Entering into International Business, Know the Business  Business Idea and Concept, Types of Business-manufacturing, Trading and Services (Components of Business), The Marketing Mix

## November

**UNIT-VI. Business Arithmetic**

Simplified Cash Register and Record Keeping, Unit of Sale, Unit Cost and Unit Price Unit of Sale,Cost, Income Statement,
Cash Flow Projections, Preparing a Cash Flow Projection, Taxes

## December

**UNIT-VII. Resource Mobilisation**

Meaning and Types of Resources-Human, Capital and Other Types of Resources,Resource Mobilisation-Planning, Selection of Personnel, Factors Kept in Mind before Selecting a Suitable Source of Business Finance,Estimating Financial Requirement,Estimating Capital Requirement,Capitalisation, Sources of Finance, Mentoring, Size and Capital based Classification of Business Enterprises, Sources of Information

# DATA SCIENCE

## April

**SUBJECT SPECIFIC**
**CHAPTER 1: Ethics in Data Science**

- Introduction
- How Data Ecosystem is evolving
- Why do Data Scientists need to understand ethics?
- What is data governance framework?

**EMPLOYABILITY SKILLS**
**Unit 1 Communication Skills– III**

## May

**SUBJECT SPECIFIC**
**Chapter 2 ASSESSING DATA**

- Introduction
- Story vs. facts
- Trial assessment
- Activity

**Chapter 5 Introduction to R Studio**

## July

**EMPLOYABILITY SKILLS**
**Unit 2 Self-Management Skills – III**
**SUBJECT SPECIFIC**
**Chapter 3 FORECASTING ON DATA**

- Introduction
- Forecasting
- Observational study

**Chapter 5 Introduction to R Studio (Continued..)**

## August

**EMPLOYABILITY SKILLS**
**Chapter 3 Information and Communication Technology Skills-III**
**SUBJECT SPECIFIC**
**Chapter 3 FORECASTING ON DATA (Continued)**

- Introduction
- Forecasting
- Observational study

**Chapter 5 Introduction to R Studio (Continued..)**

## October

**EMPLOYABILITY SKILLS**
**Chapter 4 Randomization**

- Introduction
- Let us do a survey
- Sampling Bias
- How sure are you?

**Unit 4 Entrepreneurial Skills- III**

## November

**Unit 5 Green Skills-III**
**SUBJECT SPECIFIC**
**Chapter 5 Introduction to R Studio (Continued..)**

## December

**SUBJECT SPECIFIC**
**Chapter 5 Introduction to R Studio (Continued..)**

**Note:**
**Half Yearly Exam: The Entire Syllabus Covered From April to August**
**Final Examination: The Entire Syllabus Covered From April to January.**