

MATHEMATICS	(20 × 4 = 80M)
Chapter 1: Real Numbers • Introduction, Fundamental Theorem of Arithmetic, Revisiting Irrational numbers, Revisiting Rational Numbers and Their Decimal Expansion. Chapter 2: Polynomials • Introduction, Geometrical Meaning of the Zeroes of a Polynomial, Relationship between Zeroes and Coefficients of a Polynomial. Chapter 3: Pair of Linear Equations in Two Variables • Introduction, Pair of Linear Equation in Two variables, Graphical Method of solution of a Pair of Linear Equation, Algebraic Methods of solving a Pair of Linear Equation, Substitution Method, elimination Method. Chapter 4: Quadratic Equations • Introduction, Quadratic Equations, Solutions of a Quadratic Equation by Factorisation and by using quadratic formula, Nature of Roots. Chapter 5: Arithmetic Progression • Introduction, Arithmetic Progression, n^{th} Term of an AP, Sum of First n Terms of an AP. Chapter 6: Triangles • Introduction, Similar Figures, Similarity of Triangles, Criteria for Similarity of Triangles. Chapter 7: Coordinate Geometry • Introduction, Distance Formula, Section Formula. Chapter 8: Introduction to Trigonometry • Introduction, Trigonometric Ratios, Trigonometric Ratios of some Specific angles ($0^\circ, 30^\circ, 45^\circ, 60^\circ, 90^\circ$). Trigonometric Identities. Chapter 9: Some Applications of Trigonometry • Introduction, problems on Heights and Distances. Chapter 10: Circles • Introduction, Tangent and Secant of a circle, Number of Tangents from a Point on a Circle. Chapter 11: Areas Related to Circles • Introduction, Perimeter and Area of a Circle – A Review, Areas of Sector and Segment of a Circle, Areas of combination of Plane Figures. Chapter 12: Surface Areas and Volumes • Introduction, surface Area of a Combination of Solids, Volume of a Combination of solids. Chapter 13: Statistics • Introduction, Mean of Grouped Data, Mode of Grouped Data, Median of Grouped data. Chapter 14: Probability • Introduction, classical definition of probability, problems on finding the probability of an event.	
BIOLOGY	(10 × 4 = 40M)
Chapter 1: How do Organisms Reproduce • Types of reproduction, Modes of asexual reproduction, Sexual reproduction in plants, Sexual reproduction in animals, Reproduction in humans, Male and female reproductive system, Gestation period, Reproductive health.	

Chapter 2: Control and coordination

- Control and coordination, Plant hormones, Response to stimulus in plants, Nervous system: Human nervous system, Hormones in animals, The endocrine system, Feedback mechanism, Different control centres in the nervous system, Mechanism of reflex action.

Chapter 3: Heredity and evolution

- Heredity, Mendel's Experiment, Sex determination, Evolution, Evidences for evolution, Lamarckism, Darwin's theory, Speciation, Human evolution, Chromosomal disorders

Chapter 4: Respiration – a life process

- Discovery of gases involved in respiration, Respiration in Plants, Respiration through roots, Fermentation, Transportation of gases in plants, Stages of respiration in humans, Exchange of gases, Cellular respiration.

Chapter 5: Photosynthesis & Transportation in Plants

- Photosynthesis in Plants, Raw material required for Photosynthesis, Mechanism of Photosynthesis. Transportation in Plants – mechanism of water transportation, Transportation of minerals and food materials in plants.

Chapter 6: Circulation in animals

- Human circulatory system, Internal structure of heart, Blood vessels and blood transport, Cardiac cycle, Types of circulation, Lymphatic system, Evolution of transport system, Blood pressure, Blood clotting.

Chapter 7: Excretion

- Excretion in human beings, Excretory system, Formation of urine, Urine composition, Dialysis, Kidney transplantation, Accessory excretory organs in humans, Excretion in plants (Alkaloids, tannins, resins, gums, latex)

CHEMISTRY

(15 × 4 = 60M)

Chapter 1: Chemical Equations & Reactions

- Modern Symbols of Elements, Chemical Formula, Chemical Equation, Molecular Mass and Mole Concept, Chemical Reactions- Chemical Combination, Decomposition, Displacement, Oxidation & Reduction Reactions.

Chapter 2: Acids, Bases and Salts

- Chemical Properties of Acids and Bases, What is Common in All Acids?, Do All Acids Have the Same Strength? Do all bases have the same strength? Acidic & Basic Salts, pH scale.

Chapter 3: Structure of Atoms

- Charged Particles in Matter, Atomic Theories (Daltons, Rutherford, Bohr). Distribution of Electrons in Shells, Electronic Configuration.

Chapter 4: Classification of elements

- Early Attempts at the Classification of Elements, Modern Periodic Table, Trends on the Basis of Modern Periodic Table

Chapter 5: Metallurgy

- Physical Properties of Metals and Non-Metals, Chemical Properties of Metals & Non-Metals, Occurrence of Metals, Extraction of Metals (Metallurgy)

Chapter 6: Carbon and its compounds

- Lewis Dot structure of elements (electron dot), Formation of Ionic & Covalent bond. Allotropes of Carbon, Catenation - Unique Property of Carbon, Saturated & Unsaturated carbon compounds. Isomerism-Chain, Branched & Ring. Petroleum (Mineral Oil), Some Compounds of Carbon Other Than Hydrocarbons, Nomenclature of Carbon Compounds, Chemical Properties of Carbon Compounds, Properties of Ethanoic Acid and Ethanol, Saponification (Basic Concepts).

Chapter 7: Atoms and molecules

- Symbols of Elements, Valencies, Atomicity, Molecular Mass, Molecular formulae (Criss-cross method), How big are the atoms and molecules?, Chemical Formulae.

PHYSICS**(15 × 4 = 60M)****Chapter 1: Motion**

- Distance and displacement, velocity, uniform and non-uniform motion along a straight line; acceleration, distance-time and velocity-time graphs for uniform motion and uniformly accelerated motion, elementary idea of uniform circular motion.

Chapter 2: Force and Laws of Motion

- Force and Motion, Newton's Laws of Motion, Action and Reaction forces, Inertia of a body, Inertia and mass, Momentum, Force and Acceleration.

Chapter 3: Gravitation

- Gravitation; Universal Law of Gravitation, Force of Gravitation of the Earth (gravity), Acceleration due to Gravity; Mass and Weight; Free fall.

Chapter 4: Work and Energy

- Work done by a Force, Energy, Power; Kinetic and Potential energy; Law of conservation of energy (excluding commercial unit of Energy), Transformation of Energy.

Chapter 5: Sound

- Nature of sound and its propagation in various media, speed of sound, range of hearing in humans, ultrasound, reflection of sound, echo.

Chapter 6: Light (Reflection and Refraction)

- Reflection of light by curved surfaces; Images formed by spherical mirrors, centre of curvature, principal axis, principal focus, focal length, mirror formula (Derivation not required), magnification. Refraction; Laws of refraction, refractive index. Refraction of light by spherical lens; Image formed by spherical lenses; Lens formula (Derivation not required); Magnification. Power of a lens. Applications of spherical mirrors and lenses.

Chapter 7: Human Eye and the Colourful World

- Structure & Functioning of a lens in human eye, defects of vision and their corrections, Refraction of light through a prism, dispersion of light, scattering of light, applications in daily life (excluding colour of the sun at sunrise and sunset).

Chapter 8: Electric Current

- Electric current, potential difference and electric current, Ohm's law; Resistance, Resistivity, Factors on which the resistance of a conductor depends. Series combination of resistors, parallel combination of resistors and its applications in daily life. Heating effect of electric current and its applications in daily life.

Chapter 9: Magnetic Effects of Current

- Magnetic field, field lines, field due to a current carrying conductor, field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's Left Hand Rule, Direct current. Alternating current: frequency of AC, Advantage of AC over DC, Domestic electric circuits, Applications of Magnetic Effects of Current.

ENGLISH**(5 × 4 = 20M)**

- Unseen Comprehension Passage

MENTAL ABILITY**(15 × 4 = 60M)****Chapter 1: Mathematical Operations****Chapter 2: Blood relation****Chapter 3: Number series****Chapter 4: Direction sense****Chapter 5: Seating arrangement****Chapter 6: Puzzles****Chapter 7: Mirror and water images****Chapter 8: Cubes and Dice****Chapter 9: Ranking order****Chapter 10: Coding and Decoding**

DEENIYAT**(10 × 4 = 40M)****Chapter 1:** Five Pillars of Islam & Months of Islam**Chapter 2:** Books of Allah SWT (Prophets & their book names) The Quran (Parahs & Surahs)**Chapter 3:** Prophets of Allah SWT (Names & their miracles)**Chapter 4:** Family & Important Holy Companions (Names) of Prophet Muhammad PBUH**Chapter 5:** Angels of Allah SWT (Names & their duties)**Chapter 6:** Important milestones in Islamic History**SOCIAL SCIENCE****(10 × 4 = 40M)****CIVICS****Chapter 1: Indian constitution**

- Making of The Indian Constitution, Fundamental Rights

Chapter 2: Democracy

- What is Democracy? Features of Democracy, Why Democracy?

Chapter 3: Election Process in India

- Election Commission of India, Chief Election Commissioner
- The need for Electoral reforms, Political parties -National & State parties.

ECONOMICS**Chapter 4: Sectors of Indian Economy**

- Sectors of Economic activities, Comparing the three sectors, Primary, Secondary and Tertiary sectors in India.
- Division of sectors: organized and unorganized, Sectors in terms of ownership: Public and Private sectors.

Chapter 5: Money and Credit

- Barter System, Reserve Bank of India & Self Help Groups, Modern forms of money, Loan activities of Banks.

Chapter 6: Globalization and the Indian Economy

- What is Globalization? Factors that have enabled Globalization, World Trade Organization, and Impact of Globalization in India, International Monetary Fund & MNCs.