

Mathematics

- Real Numbers: Euclid's division lemma, Fundamental Theorem of Arithmetic, revisiting rational and irrational numbers, decimal expansions.
- Polynomials: Geometrical meaning of zeros, relationship between zeros and coefficients, division algorithm for polynomials.
- Pair of Linear Equations in Two Variables: Introduction, graphical method, algebraic methods (substitution, elimination, cross-multiplication).
- Quadratic Equations: Introduction, solution by factorisation and completing the square, nature of roots.
- Arithmetic Progressions: Introduction, the n th term, sum of the first n terms.
- Triangles: Similar triangles, criteria for similarity, areas of similar triangles, Pythagoras' theorem.
- Coordinate Geometry: Introduction, distance formula, section formula.
- Trigonometry: Introduction, trigonometric ratios, ratios of specific angles, trigonometric identities, heights and distances.
- Circles: Tangent to a circle, number of tangents from a point.
- Constructions: Division of a line segment, construction of tangents to a circle.
- Area Related to Circles: Perimeter and area of a circle, areas of sector and segment, areas of combinations of plane figures.
- Surface Areas and Volumes: Surface areas and volumes of combinations of solids, conversion of solids from one shape to another, frustum of a cone.
- Statistics
- Probability

Physics

- Light - Reflection and Refraction: Laws of reflection, reflection from spherical mirrors, image formation, uses of mirrors, sign conventions, mirror formula, laws of refraction, refractive index, refraction through a glass slab and prism, refraction by spherical lenses, image formation by lenses, lens formula, magnification, power of a lens, the human eye, defects of vision and their correction, atmospheric refraction, scattering of light.
- Electricity: Electric current, potential difference and electric potential, Ohm's law, resistance, resistivity, factors affecting resistance, series and parallel combinations of resistors, heating effect of electric current, electric power.
- Magnetic Effects of Electric Current: Magnetic field lines, magnetic field due to a current-carrying conductor, force on a current-carrying conductor in a magnetic field, electric motor, electromagnetic induction, electric generator, domestic electric circuits.
- Sources of Energy and Environment: Different forms of energy, conventional and non-conventional sources of energy, solar energy, energy from the sea, geothermal energy, nuclear energy, environmental concerns, conservation of natural resources, ozone layer, greenhouse effect, ecosystem.

Chemistry

- Structure of Atom: Charged particles in matter, Thomson's model, Rutherford's model, Bohr's model, neutrons, distribution of electrons in orbits, valency, atomic number, mass number, isotopes and isobars.
- Chemical Reactions and Equations: Chemical equations, balanced chemical equations, types of chemical reactions (combination, decomposition, displacement, double displacement, oxidation, reduction), effects of oxidation reactions in everyday life (corrosion, rancidity).
- Acids, Bases and Salts: Understanding the chemical properties of acids and bases, reactions of acids and bases with metals and non-metal oxides, pH scale, importance of pH in everyday life, salts, family of salts, pH of salts.
- Metals and Non-metals: Physical and chemical properties of metals and non-metals, reactivity series, ionic compounds, extraction of metals, corrosion and its prevention.
- Carbon and Its Compounds: Covalent bonding, versatile nature of carbon, homologous series, nomenclature of carbon compounds, chemical properties of carbon compounds (combustion, oxidation, addition, substitution reactions), ethanol and ethanoic acid (properties and uses), soaps and detergents.
- Periodic Classification of Elements: Early attempts at classification (Dobereiner's triads, Newlands' law of octaves), Mendeleev's periodic table, modern periodic table, trends in the modern periodic table (valency, atomic size, metallic and non-metallic properties).

English

- Grammar: Tenses, active and passive voice, modals expressing attitudes, prepositions, articles, nouns (countable and uncountable), determiners, subject-verb agreement, reported speech, relatives, conditionals, connectors, nominalisation, comparisons, non-finites.
- Vocabulary and Usage: Detecting and correcting errors, dialogue completion, filling in the blanks with suitable words, rearranging jumbled words or phrases, one-word substitutions, idioms and phrases, synonyms and antonyms, word formation.
- Reading Comprehension: Understanding unseen passages and answering related questions.
- Composition: Short essay writing, letter writing (formal and informal).