Entrance Exam Objectives
Qualifying to SSS

Mathematics
- Basics of Functions (domain, parity, symmetry, shifting graphs) - Trigonometry - Vectors - Scalar product - Set Theory - Equations and inequalities with absolute values - Polynomials - Problem Solving

Chemistry
The Mole Concept: 1. Calculate the Molar mass of elements, molecules, and polyatomic ions. 2. Calculate the amount of matter (in moles) using mass, particles (atoms, molecules), and volume (for gases using molar volume).
Solutions: 1. Define Solutions - Solute, Solvents, aqueous, non-aqueous. 2. Calculate the concentration of a solution using moles and volume. 3. Percent composition by mass of a solute in a solution.
Chemical Reactions & Stoichiometry: 1. Define Chemical changes - Definitions, types of reactions. 2. Understand and apply the Law of Lavoisier - Balancing Chemical Reactions. 3. Apply the Law of Lavoisier - Conservation of Matter during chemical change according to Stoichiometry.

4. Apply the Limiting Reagent Theorem in Stoichiometry.

5. Determine yield of a reaction – Actual, theoretical, and %yield.

Physics
- Potential difference - Resistors - Generators Receivers - Description of motion - Newton's first law - Newton's second law