

M.L. Syal's Helix Institute
S.C.O. 343-344-345, Top Floor, Sector 34-A, Chandigarh. Ph : 2663424, 2623155

SCHOLARSHIP cum ADMISSION Test
(April Test for XI–Non-Medical)

Duration of Test : 1 hr. 50 minutes

Total Marks : 300

Pattern of Test

- i. The question paper will be in pen-paper format using OMR sheet at Helix Chandigarh.
- ii. There will be **75** multiple choice objective type questions with single answer.
- iii. Each question carries **4** marks for correct answer.
- iv. **(–1) mark will be deducted for incorrect answer.**
- v. No mark will be awarded/deducted for unattempted questions.

Physics Syllabus (25 questions) Marks : 100

• **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, magnification. Refraction; Laws of refraction, refractive index.

Refraction of light by spherical lens; Image formed by spherical lenses; Lens formula ; Magnification. Power of a lens.

• **Human Eye and Colourful world**

Functioning of a lens in human eye ; Defects of vision and their corrections ; Applications of spherical mirrors and lenses. Refraction of light through a prism ; Dispersion of light ; Scattering of light ; Applications in daily life.

• **Electricity**

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 ; Electric power, Interrelation between P, V, I and R

• **Magnetic effects of current**

Magnetic field and field lines; Magnetic field due to a current carrying conductor; Force on a current carrying conductor in a magnetic field; Fleming's Left Hand Rule, Electromagnetic Induction, Domestic Electric Circuits

Chemistry Syllabus (25 questions) Marks : 100

• **Chemical reactions and equations**

Chemical equation, Balanced chemical equation, implications of a balanced chemical equation, types of chemical reactions: combination, decomposition, displacement, double displacement, precipitation, neutralization, oxidation and reduction.

• **Acids, Bases and Salts**

Their definitions in terms of furnishing of H^+ and OH^- ions, General properties, examples and uses, concept of pH scale, importance of pH in everyday life; preparation and uses of Sodium Hydroxide, Bleaching powder, Baking soda, Washing soda and Plaster of Paris.

• **Metals and non – metals**

Properties of metals and non-metals; Reactivity series; Formation and properties of ionic compounds.

• **Carbons & its compounds**

The Covalent bond; Saturated and Unsaturated carbon compounds; Chains, Branches and Rings; Functional groups in carbon compounds; Homologous Series.

Mathematics (25 questions) Marks : 100

- Number systems
- Polynomial
- Pair of linear equation in two variables
- Quadratic equation
- Arithmetic progressions
- Triangles
- Trigonometry and its application
- Areas Related to Circles
- Surface Area and Volume
- Statistics and Probability