

- NOTE:** 1. All questions are compulsory.  
2. Figures to right indicate marks.  
3. Draw labelled diagrams wherever necessary.

**Q I Answer the following (Any Two)**

(20)

- 1) Give an account of dyes & staining techniques used in Electrophoresis.
- 2) Explain : Working of Light Microscope
- 3) Describe in detail the process of Paper Chromatography.
- 4) Explain the process of Sample preparation for Electron Microscopy.

**Q II Answer the following (Any Two)**

(20)

- 1) What is Nucleic acid? Add a note on its types, structure & function.
- 2) Describe in detail any two cell organelles studied by you.
- 3) Give an account on ultrastructure and functions of Glyoxisomes.
- 4) Describe the cell cycle by Howard & Pele.

**Q III Answer the following (Any Two)**

(20)

- 1) Explain cytoplasmic inheritance with respect to *Mirabilis*.
- 2) What are autopolyploids ? Give its different types and their importance in crop improvement and evolution.
- 3) Write in detail about deletion and its genetic effects.
- 4) What are different causes of chromosomal aberrations? Write down in detail about inversion.

**Q IV Write short notes on (Any Three)**

(15)

- 1) Mitochondrial membranes
- 2) Stains for Electrophoresis
- 3) Aneuploidy
- 4) Importance of Derivatising agents for TLC
- 5) Down syndrome
- 6) Prophase I

— The End —