

ZOOLOGY

PAPER II

CELL BIOLOGY

Duration : 3 hours

M.M. 50

UNIT -I

- 1 The Cell: Discovery of cell, basic properties of cell, diversity of cell size and shape, cell theory.
- 2 Prokaryotic cell: Characteristics and structure.
- 3 Cellular macromolecules: Proteins, carbohydrates, lipids.

UNIT -II

- 4 Centrioles and basal bodies.
- 5 Cilia and flagella.
- 6 Cytoplasmic skeleton : Microfilaments and microtubules.
- 7 Plasma membrane: Fluid mosaic model, functions of plasma membrane viz. Endo- and exocytosis, active and passive transport.

UNIT -III

- 8 Shape, size, distribution, chemical nature and functions of following:

- (a) Endoplasmic reticulum.
- (b) Golgi complex.
- (c) Lysosomes.
- (d) Mitochondria.

UNIT -IV

- 9 Nucleus and nucleolus: Structure, chemical nature and functions.
- 10 Nucleic acids: Watson and Crick model of DNA, chemical nature of DNA, types of DNA, replication of DNA , different types and chemical nature of RNA; Ribosomes.
- 11 Elementary knowledge of protein synthesis.

UNIT -V

- 12 Brief idea of cell cycle. General description of mitosis and meiosis.
 - 13 An elementary idea of cell transformation and cancer.
 - 14 An elementary idea of cellular basis of immunity.
 - 15 Methods in cell Biology.
- (a) Elementary idea of techniques in cell biology: Light, electron and fluorescence microscopy.
 - (b) Elementary idea of cell culture.