

PAPER VI: MOLECULAR AND DEVELOPMENTAL BIOLOGY

UNIT I:

Cellular organelles – structure and function. Organization of cytoskeleton and nuclei. Chromatin structure.

UNIT II:

Molecular aspects of cell division and cell cycle. Cell fusion. Nuclear cytoplasmic interactions.

UNIT III:

Structure of DNA & RNA melting and unwinding kinetic DNA replication, kinetics, repair and gene amplification RNA transcription and processing.

UNIT IV:

Protein synthesis and secretion. Transcriptional and translational controls.

UNIT V:

Hormones and gene expression. Viruses and gene expression. Growth factors. Mitogens and oncogenes. Cellular regulation, development and differentiation.

REFERENCE BOOKS:

1. The Molecular Biology of the Cell by Alberts et. Al., (199*)
2. The Molecular Biology of the Gene by J.D. Watson et al. (19**) Benjamin Cummings.
3. Genes V by Lewin (1994) Oxford University Press, Oxford.
4. Molecular Cell Biology by Lodish et al. (1995). Scientific American Press.
5. Development Biology 3rd Edition by Leon W. Browder, Erickson and William R. Jeffery, Saunders College Publishing.