

PBT3I102 CELL BIOLOGY

Module-I

Structural intricacy & Chemical composition of cells, Organization of Cell (Prokaryotic and Eukaryotic), Cell Wall & Cell Membrane, Cell Organelles, Endoplasmic reticulum, Nucleus, Cytoskeleton

Module-II

Molecular Organization of Chromosome (Nucleosome concept), Cell Cycle, Cell Divisions- Mitosis and Meiosis, Programmed cell death. introduction to cell fate and early embryonic patterning in different organisms (*Drosophila*), Stem Cell (Embryonic and adult types and characteristics)

Module-III

Membrane transport & trafficking, mechanisms of protein sorting and targeting, intercellular communication and associated signaling pathways, cell death pathways, Cancer Cell Biology (Cause, Cell Characteristics)

Text Books

1. Theory & Problems in Molecular & Cell Biology, Stansfield, Tata McGraw Hill
2. The Cell Molecular approach, Geoffrey M. Cooper, ASM press Washington D.C. Sinauer Associates, Inc.
3. Principles of Genetics, Robert Tamarin, Tata McGraw Hill
4. Molecular Biology of Cell – Alberts, Garland Science, Taylor & Francis Group.
5. Molecular Biology of The Cell (Fifth edition), 2007 by Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter. Publisher: Garland Publications
6. Molecular Cell Biology (sixth edition), 2008 by Harvey Lodish, Arnold Berk, Chris A. Kaiser, Monty Krieger, Matthew P. Scott, Anthony Bretscher, Hidde Ploegh, Paul Matsudaira. Publisher: W H Freeman & Company
7. Essential Cell Biology (Third Edition), 2009 by Bruce Alberts, Dennis Bray, Karen Hopkin, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter. Publisher: Garland Science