

2007 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

II B.TECH I SEMESTER REGULAR EXAMINATIONS
CELL BIOLOGY
(BIO-TECHNOLOGY)

NOVEMBER 2007

TIME: 3 HOURS
MAX MARKS: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write the three tenets of cell theory. What are the natural factors that govern the shape and size of cells? [16]
2. Justify the statement "Plasma membrane acts as a semi-permeable membrane in living cells". [16]
3. Cite the one unique function of each of the following: plasma membrane, nucleus, nuclear envelope, mitochondrion, chloroplast, RER, SER, Golgi complex, secretory vesicles, lysosome, peroxisomes, ribosomes, cytoskeleton, microtubules, microfilaments, intermediate filaments, extracellular matrix, cell wall. [16]
4. Briefly explain how glucose is transported across plasma membrane of a cell. [16]
5. What is the cell cycle? What are the stages of the cell cycle? How does the cell cycle vary among different types of cells? [16]
6. With respect to cell differentiation write notes on:
 - (a) Cytoplasmic determinants
 - (b) Nucleoplasmic interactions. [8+8]
7. Explain G-protein coupled receptors. [16]
8. Explain the role of protein Tyrosine kinase in cell growth and differentiation