

II B.Tech. I Semester Supplementary Examinations, May -2005
CELL BIOLOGY
(Bio-Technology)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Describe in detail the basic properties of cells.
2. List and describe the passive and active processes used by the plasma membrane to maintain homeostasis of the cell.
3. How can you distinguish rough ER from smooth ER in an electron micrograph? What is this distinction based on? Explain.
4. Compare and contrast Mitochondria and Chloroplast.
5. What is Mitosis? Describe the different stages of mitosis.
6. Write the general characteristics of cell differentiation.
7. (a) What are chemoreceptor.
(b) Do bacteria detect spatial gradients or temporal gradients? Explain.
8. Write the role of tyrosine kinase in control of cell growth and differentiation.

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1. Explain the complexity of cell in an organism in view of its structure and function.
2. Describe the chemistry of cell.
3. What is meant by Exocytosis and Endocytosis. Explain these processes that take place in the cell.
4. Write short notes on:
 - (a) Thylakoid membrane.
 - (b) Processes that takes place in chloroplast.
 - (c) Grana.
 - (d) Photo synthetic phosphorylation.
5. Describe:
 - (a) Karyokinens.
 - (b) role of cytoskeletal elements in cell division.
6. Explain the cytoplasmic determinants and describe the localization of cytoplasmic determinants in eggs.
7. What are the different kinds of chemo receptors that are involved in transmission of signals across bacterial membranes.
8. Describe the mechanism of action of steroid hormone.

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1. Write notes on:
 - (a) properties of cells.
 - (b) cell theory.
2. Explain with diagrams the structure and functions of plasma membrane.
3. What is meant by Exocytosis and Endocytosis. Explain these processes that take place in the cell.
4. What is a thylakoid? What are the functions?
5. Outline and discuss the events, including regulatory checkpoints, of the cell cycle.
6. Write the general characteristics of cell differentiation.
7. What are the different kinds of chemo receptors that are involved in transmission of signals across bacterial membranes.
8. Where are the receptor molecules present over the plasma membrane? Write their function.

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1. Write a note on different type of cells in higher animals.
2. What concepts of general chemistry are important for cell structure and function?
3. Describe the structure and functions of smooth and rough endoplasmic reticulum.
4. Describe the origin and function of Lysosome.
5. What changes occur in the nucleus during prophase, metaphase, anaphase and telophase?
6. Explain the cytoplasmic determinants and describe the localization of cytoplasmic determinants in eggs.
7. Write short notes on:
 - (a) Chemo taxis.
 - (b) Tumbling motion.
 - (c) Smooth swimming motion.
 - (d) Receptor triggered phosphorylation.
8. Write a note on G Protein receptors.
