

M.Sc. (Botany) Semester - 1 (CBCS) Examination
Jan/Feb.-2022 [NEW COURSE]
CELL BIOLOGY(CORE)

Time: 1:30 Hours**Marks: 42****Instructions:**

1. Figures to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any three of the following questions.
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- Q.1 Answer the following (any 7) 14**
1. What is difference between cell wall and Plasma membrane?
 2. Which are the functions of Mitochondria other than cellular respiration and ATP synthesis?
 3. State major functions of Rough and Smooth Endoplasmic Reticulum.
 4. What is the importance of NRF-2 in mitochondrial biogenesis?
 5. What is the role of CD4 cells in immune system?
 6. What is exocytosis?
 7. Give the difference between osmosis and diffusion.
 8. State the major function of Vacuoles?
 9. What is chromosomal mutation?
 10. What do you mean by microfilaments?
- Q.2 Answer the following (any two) 14**
1. Explain in detail ultrastructure of pore complex of nuclear envelop
 2. Write a note on cyclins and cycline dependent kinases
 3. Special types of chromosomes - Explain
- Q.3 Answer the following**
1. Describe the mechanism of biogenesis of chloroplast **05**
 2. Explain the interactions between Golgi complex, Endoplasmic Reticulum and Lysosomes **05**
 3. Write a note on biogenesis of mitochondria **04**
- Q.4 Answer the following**
- A. Attempt any two 10**
1. Write a note on intermediate filament
 2. Write a note on ultrastructure and function of IF and associated proteins
 3. Describe the functions of Actin and Myosin
- B. Attempt any one 04**
1. Explain the ultrastructure of Actin and Myosin
 2. What are active transport pumps?
- Q.5 Answer the following (any two) 14**
1. Write a detailed note on ligand gated ion channel and g-protein coupled receptor
 2. What is 'Programmed Cell Death'? Explain Intrinsic Pathway in detail.
 3. State the mechanism by which proto-oncogenes are transformed into oncogenes
 4. What is reterovirus? Explain in detail with the example of 'HIV'
