

M. Sc. DEGREE END SEMESTER EXAMINATION - OCTOBER 2025**SEMESTER 3 : ZOOLOGY****COURSE : 24P3ZOOT10 : CELL AND MOLECULAR BIOLOGY***(For Regular 2024 Admission)*

Time : Three Hours

Max. Weights: 30

PART A**Answer any 8 questions****Weight: 1**

1. Cell cycle is the life cycle of the cell. Justify the statement. (A)
 2. Describe the Davson - Danielli model of cell membrane. (U)
 3. What are cristae? (R)
 4. Comment on the role of immunoglobulins in cell-cell interaction. (U)
 5. Evaluate the relevance of MPF in frog oocytes (E)
 6. What is a Microtubule Organizing Centre? Give two examples. (R)
 7. Elaborate the structural details of GPCR. (An)
 8. What are microfilaments? Comment on their functions. (R)
 9. Comment on the role of integrins in blood clotting. (U)
 10. What is charged tRNA? (R)
- (1 x 8 = 8)**

PART B**Answer any 6 questions****Weights: 2**

11. Describe translational level regulation of eukaryotic genome. (An)
 12. Discuss the molecular organization and functions of tight junctions. (U)
 13. Outline the two pathways for maturation of vesicles in Golgi complex. (U)
 14. Justify chromatin remodelling as a mechanism of gene regulation. (E)
 15. Describe one signaling pathway that regulates calcium release. (Cr)
 16. Examine the role of immunotherapy in cancer prevention and treatment. (A)
 17. Discuss the significance of carbohydrates in cell membrane function. (An)
 18. How do ligand-gated calcium channels regulates the release of calcium from intracellular calcium stores? Comment on the importance of such regulatory mechanism. (A)
- (2 x 6 = 12)**

PART C**Answer any 2 questions****Weights: 5**

19. Evaluate the mechanism of receptor and mitochondria mediated apoptosis. Add notes on the significance of apoptosis in a human body. (E)
20. Discuss the new and emerging strategies for combating cancer. (U)
21. Write an essay on the translation process in eukaryotes. Add a note on the post-translational modifications. (U)
22. Elaborate a repressable operon. Discuss on the mode of regulation of Trp operon. (An)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
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Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;