

Reg. No .....

Name .....

22P346

**M. Sc. DEGREE END SEMESTER EXAMINATION : OCTOBER 2022**

**SEMESTER 3 : ZOOLOGY**

**COURSE : 21P3ZOOT10 : CELL AND MOLECULAR BIOLOGY**

*(For Regular - 2021 Admission)*

Duration : Three Hours

Max. Weights: 30

**PART A**

**Answer any 8 questions**

**Weight: 1**

1. What is the significance of Pribnow box? (U, CO 7)
  2. Comment on the oncogenic mechanism affecting apoptosis. (U)
  3. Reflect on the interaction between 5' cap and poly (A) tail. (A, CO 4, CO 5)
  4. Cell cycle is the life cycle of the cell. Justify the statement. (A, CO 6)
  5. Write briefly on barrel proteins. (U)
  6. What is meant by non muscle motility? Mention any two of it. (R)
  7. What are integrins? (R)
  8. Detail the mechanism of spindle assembly check point. (A, CO 4)
  9. Sketch out the structure of mitochondria and mark its parts. (A)
  10. What is DAG? Explain its role in cell signaling. (An, CO 4)
- (1 x 8 = 8)**

**PART B**

**Answer any 6 questions**

**Weights: 2**

11. What are microtubules? Comment on its structure. (R)
  12. Comment on the structure and functions of selectins. (U)
  13. Enlist few metabolic processes in which Calcium ions are important. How their availability in cells is regulated? (R)
  14. Discuss the molecular organization and functions of gap junctions. (U)
  15. Explain how secretory products are transported in the cell. (U, CO 3)
  16. Explain the role of cholesterol in maintaining fluidity of cell membrane. (An, CO 1)
  17. Explain apoptosis pathway. (An)
  18. Describe how an operon exerts the control of gene expression. (E, CO 6)
- (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, CO 1)
20. Explain the role of various components of cell membrane in maintaining fluidity of cell membrane. (An, CO 1)

21. Write an essay on the process of transcription in eukaryotes. Add note on post transcriptional modifications. (U)
22. Elaborate a repressible operon. Discuss on the mode of regulation of Trp operon. (An, CO 6)
- (5 x 2 = 10)**

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Understand the structure of a living cell and its associations at molecular level	U	16, 19, 20	12
CO 3	Analyze the role played by cell signaling pathways	U	15	2
CO 4	Describe the process involved in cell cycle and molecules involved	U	3, 8, 10	3
CO 5	Distinguish between a cancerous cell from non-cancerous one	U	3	1
CO 6	Examine the concept of gene expression	An	4, 18, 22	8
CO 7	Discuss the role played by various molecules at different levels of gene regulation	An	1	1

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;