

Reg. No .....

Name .....

23P328

**M. Sc. DEGREE END SEMESTER EXAMINATION : NOVEMBER 2023**

**SEMESTER 3 : ZOOLOGY**

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

*(For Regular - 2022 Admission and Supplementary - 2021 Admission)*

Duration : Three Hours

Max. Weights: 30

**PART A**

**Answer any 8 questions**

**Weight: 1**

1. Examine the medical significance of fibrillar collagen. (A)
  2. What are Integral proteins? (R)
  3. What is attenuation? (R, CO 2)
  4. Detail the role of P21 in cell cycle? (An, CO 6)
  5. Expand SRF. (U, CO 2)
  6. Comment on the activation of protooncogenes to oncogenes. (U)
  7. Comment on post transcriptional modification of mRNA in eukaryotes. (R)
  8. Brief on autophagy. (R, CO 3)
  9. How are microtubules organized in a cell ? (A)
  10. Comment on G2 phase of cell cycle. (E, CO 5)
- (1 x 8 = 8)**

**PART B**

**Answer any 6 questions**

**Weights: 2**

11. Describe how an operon exerts the control of gene expression. (E, CO 6)
  12. Outline the two pathways for maturation of vesicles in Golgi complex. (U, CO 3)
  13. Briefly explain the various cell membrane lipids. (U, CO 1)
  14. Discuss the structure, properties and functions of integrins. (U)
  15. Comment on molecular organisation of adherens junctions and desmosomes. (U)
  16. Phosphatidyl inositol is important in cell signaling. Explain one signal transduction pathway in which it plays an important role. (E, CO 6)
  17. What are intermediate filaments? Comment on their functions. (R)
  18. Discuss the control and checkpoints in mammalian cell cycle. (An)
- (2 x 6 = 12)**

**PART C**

**Answer any 2 questions**

**Weights: 5**

19. Explain how the chemistry of cell membrane is related to its functions. (E, CO 1)
  20. Elucidate the mechanism of transcriptional level of regulation in Eukaryotes. (An, CO 2)
  21. Write an essay on RTK pathway in cell signalling and comment on its importance. (E, CO 4)
  22. What is translation? Explain the steps involved in prokaryotic translation. Pointout the major differences that you find in eukaryotic translation. (An, CO 7)
- (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	13, 19	7
CO 2	Appreciate the role played by various cell organelles and cytoskeleton	U	3, 5, 20	7
CO 3	Analyze the role played by cell signaling pathways	U	8, 12	3
CO 4	Describe the process involved in cell cycle and molecules involved	U	21	5
CO 5	Distinguish between a cancerous cell from non-cancerous one	U	10	1
CO 6	Examine the concept of gene expression	An	4, 11, 16	5
CO 7	Discuss the role played by various molecules at different levels of gene regulation	An	22	5

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