

Reg. No .....

Name .....

24P2046

**M. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2024**

**SEMESTER 2 - ZOOLOGY**

**COURSE : 21P2ZOOT08 - BIOCHEMISTRY**

*(For Regular 2023 Admission and Improvement/Supplementary 2022/2021 Admissions)*

Duration : Three Hours

Max. Weights: 30

**PART A**

**Answer any 8 questions**

**Weight: 1**

1. Illustrate the metabolism of 3 carbon amino acids in cells. (An, CO 2)
  2. Explain the chemical nature of catecholamines. (U, CO 1)
  3. Explain how peptide bonds are formed? (U, CO 1)
  4. Explain Lesh-Nyhan Syndrome. (U, CO 2, CO 3)
  5. Evaluate how enzyme activity is regulated by proteolytic cleavage. (E, CO 4)
  6. What is Chitin? What is its biological importance? (U, CO 1)
  7. Recall the role of Cephalins (An)
  8. What are the functions of cholesterol in the human body? (Cr, CO 6)
  9. Indicate how pentose phosphate pathway is regulated within cells. (R, CO 2)
  10. State Chargaff's rule. (R, CO 3)
- (1 x 8 = 8)**

**PART B**

**Answer any 6 questions**

**Weights: 2**

11. How conformation change in proteins produces change in the net orientation of a molecule ? (A, CO 4)
  12. Write notes on different Homopolysaccharides. (U, CO 1)
  13. Explain the role of SREBP in cholesterol biosynthesis. (A)
  14. Point out the factors affecting enzyme activity. Add a note on enzyme inhibitors. (E, CO 2)
  15. Write a note on biologically important steroids (Cr, CO 1)
  16. Distinguish between Glycogen metabolism in liver and muscle? (An, CO 1)
  17. Evaluate the role of Phosphoprotein Phosphatase-1 in the regulation of Glycogenolysis? (E, CO 2)
  18. Write down the principle and procedure of any four biochemical reactions of amino acids. (R, CO 1)
- (2 x 6 = 12)**

**PART C**

**Answer any 2 questions**

**Weights: 5**

19. What do you mean by the primary and secondary structures of a protein? Discuss the role of amino acid side groups in determining the secondary structure of a protein. (E, CO 1)
20. Discuss the structure and biological significance of Hyaluronic acid, Heparin, Chondroitin sulphate, Keratan sulphate and Dermatan sulphate (E, CO 1)

21. Describe the structure and functions of Prostaglandins. Add a note on its classification. (E, CO 4)
22. Double reciprocal Plot is a linear form of Michaelis menton plot. Substantiate the statement in terms of Km and Vmax values. (An, CO 3)
- (5 x 2 = 10)**

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Examine the structure and classification of different biomolecules – protein, lipid, carbohydrate and nucleic acid.	U	2, 3, 6, 12, 15, 16, 18, 19, 20	21
CO 2	Discuss the metabolic pathways of different biomolecules	U	1, 4, 9, 14, 17	7
CO 3	Evaluate the disorders of the biomolecules	U	4, 10, 22	7
CO 4	Outline the different enzymes and its kinetics	U	5, 11, 21	8
CO 6	Elaborate the synthesis and derivatives of biomolecules	U	8	1

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