November 2025
M.Sc.
Third Semester
CORE – 10
ZOOLOGY
Course Code: MZOC 3.21
(Proteomic & Enzymology)

Total Mark: 70   *Pass Mark: 28*
Time: 3 hours

Answer <u>five</u> *questions, taking* <u>one</u> *from each unit.*

UNIT–I

1. Describe the diversity of alpha-helices in secondary structure of protein. Add a note on motifs super secondary structure.   10+4=14

2. Write a note on each of the following: 7×2=14
    (a) Protomers and their association in context of tertiary structure
    (b) Beta-pleated sheets of secondary structure

UNIT–II

3. Explain in detail the Anfinsen's classical experiments. Mention various enzymes involved in protein folding pathway.   10+4=14

4. Discuss how molecular chaperones assist in protein folding with suitable examples. Write any two types of protein folding models.
                                                             10+4=14

UNIT–III

5. Explain the principle and working of X-ray crystallography with systematic diagram.   6+6+2=14

6. Write a note on each of the following: 7×2=14
    (a) Circular dichroism
    (b) Mass spectrometry

UNIT–IV

7. Give a detailed account on the classification of enzymes with examples. 14

8. Write a note on each of the following: 7×2=14
   (a) Cofactors and coenzymes
   (b) Isozymes

UNIT–V

9. Explain the two models to describe the binding process between substrate and enzyme. 7+7=14

10. Write a note on each of the following: 7×2=14
    (a) Mechanism of enzyme catalysis
    (b) Energetic of enzyme catalysed reaction

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