

Reg. No. :

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C 3105

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2008.

Third Semester

Biotechnology

BT 1203 — BIOORGANIC CHEMISTRY

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are enantiomers? Give one example.
2. What is meant by covalent catalysis? Give one example.
3. What are oxido-reductase enzymes? Write any one enzymatic reaction involving this enzyme.
4. Write any four biochemical role of chiral methyl compound.
5. Write the metal ions present in any four dehydrogenase enzymes.
6. Write the enzymatic reaction of pepsin and its application.
7. Write the equation for on and off pathway of protein folding pathway.
8. Describe briefly the important features of protein folding.
9. Define the parameter Φ_F value.
10. What is Tanford β value?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain in detail about e and z isomerism with suitable example. (8)
(ii) Describe the conformation of C_2H_6 in detail. (8)

Or

- (b) (i) Describe the significant of Hammond's postulates. (8)
(ii) Explain the mechanism of E1 and E2 reaction and compare with nucleophilic substitution reaction. (8)
12. (a) (i) Discuss the stereo chemistry of fumarase catalyzed reaction. (8)
(ii) Explain the mechanism involved in the following reaction
$$\text{RO}'\text{PO}_3^{-2} + \text{ROH} \longrightarrow \text{ROPO}_3^{-2} + \text{R}'\text{OH}. \quad (8)$$

Or

- (b) Explain the stereochemistry of product formation in nucleophilic reaction. (16)
13. (a) (i) Describe the mechanism of ribonuclease enzyme reaction in detail. (10)
(ii) Write short notes on lysozyme. (6)

Or

- (b) Explain the molecular mechanism of α - chymotrypsin enzyme reaction in detail. (16)
14. (a) Describe the multi-state kinetic for protein folding in detail. (16)

Or

- (b) Explain the 1h/2h exchange method for protein folding analysis. (16)
15. (a) Write essay on the mechanism of Ci2 protein. (16)

Or

- (b) (i) What is meant by molecular chaperones? (6)
(ii) Explain the folding of barnase enzyme in detail. (10)