Reg. No. : | | | | | | | | | | | |

J 3096

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2009.

Sixth Semester

Biotechnology

BT 1354 — PROTEIN ENGINEERING

(Regulation 2004)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write the salient features of 3D structure of peptide bond.

2. Write the stereoisomers of theronine.

3. Give the reasons for breaking of disulfide bond to be done before protein sequencing.

4. Explain how the dansyl chloride is involved in amino acid sequencing.

5. Write about Edman degradation method briefly.

6. How can be C terminal amino acid identified using enzyme?

7. What is eyelet?

8. Write the amino acids in the active site of alpha chymotrypsin.

9. What are zing finger proteins? Give two examples.

10. What is meant by engineered proteins?

PART B — (5 × 16 = 80 marks)

11. (a) Describe the classification of 20 amino acids by polarity, structure, type of functional group, and acid–base properties.

Or

(b) Explain why hydrogen bond and other weak forces are essential for protein conformation.

12. (a) Explain the post transitional modification of protein by glycosylation, phosphorylation, disulfide bond formation.

Or

(b) Discuss how proteins are separated based on charge, polairty, size, specificity.

13. (a) Illustrate the architecture of super secondary structure with topology diagram.

Or

(b) Describe the various stages of prediction of protein 3D structure.

14. (a) Write the structural features of DNA binding domine in Cro and Represor Protein.

Or

(b) Discuss the structural similarities and difference between Fab and Fc region of an antibody.

15. (a) Write the protein engineering procedure involved in thermal stability of T–4 lysozyme.

Or

(b) How is shelf life of recombinant insulin increased by protein engineering method? Explain in detail.

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