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L 1356

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2008.

Third Semester

Industrial Biotechnology

IB 232 — BIO-ORGANIC CHEMISTRY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is Bioisoster?
2. Write the peptide bond that is derived from glycine and alanine.
3. What is molecular defect? Give an example.
4. Write the reaction of photosynthesis.
5. Define the Guest and Host.
6. Draw the cyclodextrin structure.
7. Give a reaction that is catalysed by an enzyme.
8. What are supra molecules?
9. What are proximity effects?
10. Give any two uses of cyclodextrins.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the proximity effects with any four examples.

Or

(b) Discuss the molecular adaptation any four examples.

12. (a) Outline any three methods of synthesis of amino acids.

Or

(b) Write a detailed account of molecular recognition with suitable examples.

13. (a) (i) What are immobilized enzymes? Give any two methods of preparation of these enzymes and discuss any two applications of them.

(ii) Discuss the role played by enzymes in synthetic organic chemistry with two examples.

Or

(b) Write short notes on the following :

(i) Multifunctional catalysis

(ii) Design of molecular clefts.

14. (a) Explain the role of vitamin B₁₂ in the oxidations and reductions in detail.

Or

(b) Write short notes on :

(i) Bio models for photo synthesis

(ii) Any two metal ions role in biological systems with appropriate examples.

15. (a) Discuss any four chemical properties of cyclodextrins in detail.

Or

(b) Write short notes on :

(i) Biomimetic polyene cyclisations

(ii) Any three reactions catalysed by micelles.