J 1207

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Third Semester

Industrial Biotechnology

IB 231 — BIOCHEMISTRY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write any three possible catabolic products of the pyruvate.

2. Define Mutarotation.

3. Draw the structure of Maltose and Lactose.

4. Draw the structure of cholesterol.

5. Give the complete balanced chemical equation for glycolysis.

6. What is T_m? How is it related to base composition?

7. Write a short note on protein sequencing.

8. Define a relation between changes in free energy, enthalpy and entropy.

9. Draw the structure of Hyaluronic acid and its biological significance.

10. Draw the structure of ATP and its important biological functions.

PART B — (5 × 16 = 80 marks)

11. What are energy rich compounds? Give the structure of any one energy rich compound. Explain in detail about electron transport chain.

12. (a) Describe the UREA cycle in detail.

Or

(b) Give the reactions of Pentose Phosphate Pathway. What is its metabolic significance?

13. (a) Write a detailed note on the organization of protein structure.

Or

(b) Discuss in detail about TCA cycle. Discuss about their anabolic and anapleroitc nature of reactions.

14. (a) Discuss the *denovo* synthesis of purine and its regulation.

Or

(b) Explain the biosynthesis and degradation of Cholesterol.

15. (a) Describe Watson–Crick double helical structure of DNA and structural organization of a tRNA.

Or

(b) What are Lipids and classify them. Describe in detail about compound lipids.
