

D 4502

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Annual Pattern — First Year

Biotechnology

BT 1 X 01 — BIOCHEMISTRY — I

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write a note on bicarbonate buffer system.
2. Write any one hydrolysis reaction occur in biological system.
3. Write the structure of heme group.
4. Write about the properties of starch.
5. What are storage lipids? Give examples.
6. Write the structure of Nucleotides.
7. Write a note on digestion of carbohydrate.
8. Write in brief about the biological importance of minerals.
9. Write a note on high energy compounds in biological system.
10. Write a note on metabolic regulation.

PART B — (5 × 16 = 80 marks)

11. (a) Write in detail about :
 - (i) The essential elements used in animal life and health. (4)
 - (ii) Some of the common functional groups used in biomolecules. (4)
 - (iii) Water as reactant in biological reaction. Explain with example. (8)
- Or
- (b) (i) Discuss the force in water that help in binding of biomolecules. (6)
 - (ii) Explain the types of biomolecules. (8)
 - (iii) Define P_{Ka} and P_i of an amino acid. (2)

12. (a) (i) Discuss the level of structure in proteins. (6)
(ii) Explain the properties and its derivatives of cellulose. (6)
(iii) Write the test for proteins and carbohydrates. (4)

Or

- (b) (i) How do classify the amino acids and proteins. (6)
(ii) Write in detail about homo polysaccharides with their structure and its biological importance. (10)
13. (a) (i) DNA is a double helix. Explain. (8)
(ii) Explain the base paired helical structure of RNA. (8)

Or

- (b) (i) How do you classify the lipids? Give their physiological importance. (10)
(ii) What are the functions of nucleotides? (6)
14. (a) (i) What are the biomedical importance of Vitamins A, D, E and K? Explain the disease caused by vitamins deficiency. (10)
(ii) Explain detail about biosynthesis of lipids. (6)

Or

- (b) (i) Explain the catalytic power and specificity of enzyme. (8)
(ii) Explain in detail about biosynthesis of proteins. (8)
15. (a) (i) Explain about the krebs Cycle. (8)
(ii) Describe the calculation of ATP production during glycolysis. (8)

Or

- (b) (i) Explain about the Urea Cycle. (8)
(ii) Describe the pentose phosphate shunt. (8)