



PART B — (5 × 16 = 80 marks)

11. (a) (i) Discuss in detail the important characteristics of water that makes it a universal solvent. (8)
- (ii) Explain the various types of chemical bonds found in biological molecules. (8)

Or

- (b) (i) Write a short on biomolecules. (6)
- (ii) Explain in detail on biological buffer systems. (10)
12. (a) (i) Give structures and functions of two important derivatives and their biological functions. (8)
- (ii) Write in detail on the glycogen and peptidoglycans. (8)

Or

- (b) (i) Define and distinguish between tertiary and quaternary structures of proteins. (6)
- (ii) Give specific tests for the identification of amino acids and polypeptides. (6)
- (iii) Discuss on classification of amino acids. (4)
13. (a) (i) Write in detail on the lipids are devoid of glycerol. (6)
- (ii) Discuss the features of complex lipids. (6)
- (iii) Difference between a nucleoside and a nucleotide. (4)

Or

- (b) (i) Describe the different types of RNA found in the cell. (6)
- (ii) Explain the structure and properties of DNA. State its biological implications. (10)
14. (a) (i) Give the biological functions of the following Vitamins (8)
- (1) Vitamin A
- (2) Vitamin D
- (3) Vitamin E
- (4) Tocopherols
- (ii) Discuss the role of some important minerals and also give their deficiency symptoms. (8)

Or

- (b) (i) Describe the basic components of protein synthesis. (8)
- (ii) Discuss in detail on the factors affecting enzyme activity. (8)
15. (a) (i) What is respiration? Discuss the respiratory chain using TCA/Krebs Cycle. (8)
- (ii) Discuss in detail on the regulation of citric acid cycle. (8)

Or

- (b) (i) What is the primary purpose of pentose phosphate pathway? Describe the reactions catalyzed by transketolase. (8)
- (ii) What is the importance of glycolysis? Mention the enzymes involved in glycolysis. (8)
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