



Q.1. Give short answers of the following: (15x2=30)

- I. Differentiate prokaryotes from eukaryotes.
- II. Explain the term invert sugar.
- III. Give the number of asymmetric carbon atoms in ribose by giving its structure.
- IV. Enlist two polysaccharides with structure.
- V. Justify the statement that fructose is a reducing sugar.
- VI. How denaturation of DNA occurs.
- VII. Define optical isomerism and identify two compounds which show optical activity.
- VIII. Discuss functions of smooth endoplasmic reticulum.
- IX. Define the following terms: nucleic acid, nucleotide, and nucleoside.
- X. Give any two weak interactions of biomolecules in aqueous system.
- XI. Using Henderson-Hasselbalch equation calculate the pH of acetic acid buffer solution having equal volumes each of 0.1M acetic acid and sodium acetate, whereas the pKa value is 4.8.
- XII. How the value of ionic product of water comes out to be 10^{-14} M at 25°C ?
- XIII. How galactose is structurally different from glucose?
- XIV. What is the conventional way of explaining D and L configuration in carbohydrates?
- XV. Explain the term invert sugar.

Answer the following questions.

(3x10=30)

- Q.2. (a) Give evidences in support of cyclic structure of glucose . (5)
(b) Give in detail the biological significance of carbohydrates . (5)
- Q.3. (a) Write note on structure of DNA . (5)
(b) Describe the role of different types of RNA for the synthesis of protein. (5)
- Q.4 (a) How components of a cell can be isolated. (5)
(b)How carbonic acid buffer system works in human blood. (5)