

# QB365 Question Bank Software

12th Chemistry CBSE Case Study Questions Biomolecules For - 2024

12th Standard

Chemistry

## SECTION - A

2 x 4 = 8

1) Read the passage given below and answer the following questions:

When a protein in its native form, is subjected to physical changes like change in temperature or chemical changes like change in pH, the hydrogen bonds are disturbed. Due to this, globules unfold and helix get uncoiled and protein loses its biological activity. This is called denaturation of protein.

The denaturation causes change in secondary and tertiary structures but primary structures remains intact.

Examples of denaturation of protein are coagulation of egg white on boiling, curdling of milk, formation of cheese when an acid is added to milk.

The following questions are multiple choice questions. Choose the most appropriate answer:

(i) Mark the wrong statement about denaturation of proteins

(a) The primary structure of the protein does not change

(b) Globular proteins are converted into fibrous proteins.

(c) Fibrous proteins are converted into globular proteins.

(d) The biological activity of the protein is destroyed.

(ii) Which structure(s) of proteins remains(s) intact during denaturation process?

(a) Both secondary and tertiary structures

(b) Primary structure only

(c) Secondary structure only

(d) Tertiary structure only

(iii) Cheese is a

(a) globular protein

(b) conjugated protein

(c) denatured protein

(d) derived protein

(iv) Secondary structure of protein refers to

(a) mainly denatured proteins and structure of prosthetic groups

(b) three-dimensional structure, especially the bond between amino acid residues that are distant from each other in the polypeptide chain

(c) linear sequence of amino acid residues in the polypeptide chain

(d) regular folding patterns of continuous portions of the polypeptide chain

Answer : (i) (c)

(ii) (b)

(c) : Cheese is a denatured protein

(iv) (d)

2) Living system are made up of complex molecules called Biomolecules. Carbohydrate, proteins, enzymes, nucleic acids, lipids, hormones ATP, DNA and RNA play an important role in our daily life. Carbohydrates provide us energy. Protein help in growth and maintenance of body. Nucleic acids, RNA helps in protein synthesis, DNA helps in transfer of genetic characteristics. Fat are source of energy and protect our vital organs.

(a) Why are carbohydrates optically active?

(b) Name two acidic amino acids.

(c) Name a protein which has quaternary structure.

- (d) What are products of hydrolysis of fats?
- (e) What is role of glycerol in shaving creams?

**Answer :** (a) It is because they contain 'Chiral' carbon atoms.

(b) Aspartic acid and Glutamic acid.

(c) Haemoglobin

(d) Glycerol and fatty acids

(e) Glycerol is hygroscopic in nature, therefore, keep the skin moist.