

CLASS XI
BIOMOLECULES
WORKSHEET- 1

- 1 Amino acids, as the name suggests, have both 1
an amino group and a carboxyl group in their
structure. In addition, all naturally occurring
amino acids (those which are found in
proteins) are called L-amino acids. From this,
can you guess from which compound can the
simplest amino acid be made?

- 2 Many organic substances are negatively 1
charged e.g., acetic acid, while others are
positively charged e.g., ammonium ion. An
amino acid under certain conditions would
have both positive and negative charges
simultaneously in the same molecule. Name
such a form of amino acid.

- 3 Select an appropriate chemical bond among 1
ester bond, glycosidic bond, peptide bond and
hydrogen bond and write against each of the
following.

a. Polysaccharide

b. Protein

c. Between nitrogen base and sugar in a nucleotide _____

d. between two nitrogen bases in a DNA _____

4 What is activation energy? 1

5 Starch, Cellulose, Glycogen, Chitin are polysaccharides found among the following. Choose the one appropriate and write against each. 2

Cotton fibre _____

Exoskeleton of cockroach

Liver _____

Peeled potato _____

6 Schematically represent primary, secondary and tertiary structures of a hypothetical polymer say for example a protein. 2

7 How are prosthetic groups different from co-factors? 2

8 Formation of enzyme-substrate complex (ES) is the first step in catalysed reactions. Describe 3

the other steps till the formation of product.

- 9 What are different classes of enzymes? Explain with the type of reaction they catalyse. 3
- 10 What is the difference between a nucleotide and nucleoside? Give examples of each. 3
- 11 Explain Watson and Crick model of DNA structure. 3
- 12 Explain competitive inhibition with the help of an example. 3
- 13 Give reasons: 3
- a) Starch gives blue black colour with iodine solution.
 - b) Amino acid is called as substituted methane.
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