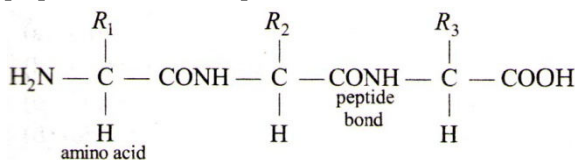


Topic :- Biological classification

- 1 (c)
Rennin, helicase and hyaluronidase, all are enzymes.
- 2 (d)
The non-competitive inhibitor binds to the enzyme at some site other than the substrate binding site and no product is formed. *e.g.*, cyanide inhibits the mitochondrial enzyme cytochrome oxidase, which is essential for cellular respiration
- 3 (b)
Biomolecules only
- 4 (a)
A physical change simply refers to a change in shape without breaking of bonds. This is a physical process. Another physical process is a change in state of matter when ice melts into water, or when water becomes a vapour. These are also physical processes. However, when bonds are broken and new bonds are formed during transformation, this will be called a chemical reaction
- 5 (c)
Living organisms have a number of carbon compound in which heterocyclic rings can be found. Some of these are nitrogen bases-adenine, guanine, cytosine, uracil and thymine
- 6 (b)
Lipid is a fat, which on hydrolysis forms **fatty acids** and **glycerol**.
- 7 (d)
Protein is the polymer of amino acids joined together by peptide bonds so, if all peptide bonds of protein are broken, then the remaining part will be **amino acid**.



- 8 **(a)**
Polysaccharides are large sized carbohydrates $(C_6H_{10}O_5)_n$ which are formed by condensation of a number of monosaccharides. These are also called glycan because of their formation from sugars. Linkage between adjacent monosaccharides is through glycosidic bonds (– COC –). A molecules of water is released at each point of condensation.
- 9 **(a)**
The free energy of a system decreases in a spontaneous reaction
- 10 **(c)**
Allosteric inhibition is the inhibition of enzyme activity by binding of an effector molecule to site (allosteric site) other than active site.
- 11 **(a)**
Pentoses (*e.g.*, ribose, deoxyribose) and hexoses (*e.g.*, glucose, fructose, galactose) are common monosaccharides.
- 12 **(a)**
Polysaccharides are polymers of monosaccharides. Glycogen and starch are both polymer of α – glucose. Glycogen is found in liver and muscles and store energy in mammals.
- 13 **(c)**
Enzymes are biological catalysts, which catalyse a vast number of chemical reactions at the temperature suitable for living organisms.
- 14 **(a)**
A product of metabolism is called a metabolite
- 15 **(c)**
Starch has straight chain or amylose part of 200-2000, $1 \rightarrow 4 \alpha$ – D pyranose glucose units and side chain or amylopectin part of 2000-200,000 glucose units that are attached to straight chains by $1 \rightarrow 6 \alpha$ – D glycosidic linkages. Cellulose is the most abundant organic substance on earth. It has a molecular linear chain of 6000-10,000, 1-4 linked- β pyranone glucose chain with molecular weight of 0.5-2.5 million. Adjacent glucose molecules lies at 180° to each other.

- 16 **(c)**
A-double helix, B-antiparallel, C-phosphate, D-sugar, E-perpendicular.
Adenine and guanine are substituted purines, while the rest (uracil, cytosine and thymine) are substituted pyrimidines
- 17 **(d)**
After grinding a living living tissue in trichloroacetic acid and then staining it, two fractions, acid-soluble and acid-insoluble can be found
Flavonoids and alkaloids all secondary metabolites, which are not present in acid insoluble fraction
- 18 **(a)**
X-axis represents temperature while Y-axis represent enzyme activity. All enzymes act at an optimum temperature, above and below this temperature, the enzyme activity declines.
- 19 **(b)**
Each enzyme [E] has a substrate [S] binding site in its molecule so that a highly reactive enzyme substrate complex [ES] is produced. This complex is short lived and dissociates into its product and the unchanged enzyme with an intermediate formation of the enzyme product complex [EP]
The formation of the ES complex is essential for catalysis
 $E + S \rightleftharpoons ES \rightarrow E - P \rightarrow E + P$
- 20 **(a)**
All statements are incorrect. Metabolism is features of living beings. During the process of metabolism, the organic molecules are being broken down and build up through the series of chemical reactions. The new product produced during the metabolism are termed as metabolism are termed as metabolite

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	c	d	b	a	c	b	d	a	a	c
Q.	11	12	13	14	15	16	17	18	19	20
A.	a	a	c	a	c	c	d	a	b	a

PE