

Topic :- Biomolecules

- 1 **(d)**
A fatty acid has a carboxyl group attached to *R* group. The *R* group could be a methyl (– C H₃), or ethyl (– C₂H₅) or higher number of –CH₂ groups (1 carbon to 19 carbons)
- 2 **(b)**
Enzymes are water soluble colloidal macromolecules which are wholly or partially proteinaceous in nature. The proteinaceous part of enzyme is called **apoenzyme** while the non-protein part is called **prosthetic group**, which may be organic (*ie.*, coenzyme) or inorganic (*ie.*, cofactor). This complex enzyme is called holoenzyme.
- 3 **(c)**
Such sugars, which give positive tests with Benedict's solution and Tollen's reagent are called reducing sugars. Most monosaccharides and some disaccharides are reducing sugars.
- 4 **(c)**
When a metabolic disequilibrium is in effect, then only cells continue to functions. The cellular metabolism utilises only those reactions that are irreversible
- 5 **(d)**
S³⁵ radioisotope is not suitable for DNA labelling based studies as DNA does not contain sulphur. S³⁵ radioisotope is suitable for protein labeling based studies because protein contains sulphur.
- 6 **(a)**
Allosteric modulation or feedback inhibition of enzymes is influenced by **end product**.
It was shown by **Jacob and Monod** (1961) through Lac operon in *E.coli*.
- 7 **(b)**

After burning the dry tissues, all the organic compounds are oxidised to gaseous form (CO_2 and water vapour) and are removed. The material left is termed 'ash' which contains inorganic elements (*e.g.*, calcium, magnesium etc.)

8 **(b)**
The inorganic compounds like sulphate, phosphate *etc.*, are categorised in acid soluble pool

9 **(d)**
Metabolic pathway from glucose to lactic acid occurs in 10 metabolic steps. This pathway is known as glycolysis

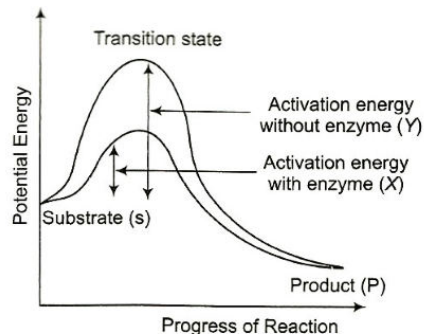
10 **(c)**
A nucleotide has three components. One is a heterocyclic compounds, second is a monosaccharide and third is a phosphate or phosphoric acid

11 **(a)**
I. Hydrolysis of glycogen to glucose is termed as glycogenolysis
II. Amylases takes part in the hydrolysis of glycogen
III. Amylum is another name of starch
IV. Polysaccharide formed as the end product of photosynthesis is starch

12 **(a)**
Peptone is any group of soluble and diffusible derived proteins formed by the action of enzymes on proteins, as in the process of digestion or by acid hydrolysis.

13 **(d)**
RUBISCO is the most abundant protein in whole of the biosphere

14 **(b)**
The amount of activation energy in the presence of an enzyme is very less as compared to the amount, which is needed in the absence of enzymes



15 **(a)**

$\text{CH}_3(\text{CH}_2)_{14}\text{COOH}$ is the chemical formula of **palmitic acid**. It is a saturated fatty acid.

- 16 **(d)**
Cellulase enzyme is used in detergent industry for colour brightening and softening.
- 17 **(c)**
In human DNA at Single-Nucleotide Polymorphism (SNP), single base differences occur.
- 18 **(a)**
Coenzyme is non-proteinaceous organic molecule required bound to the enzyme for functioning. Apoenzyme is the proteinaceous part of enzyme.
Coenzyme+Apoenzyme=Holoenzyme
- 19 **(c)**
Majority of the metabolic reactions do not occur in isolation, they are always linked to some other reactions. There are many examples of catalysed metabolic reactions examples of catalysed metabolic reactions
- 20 **(d)**
Maltose or malt sugar, is abundantly occurred in germinating starchy seeds. Maltose is a homodisaccharide, *ie.*, made up of two similar D-glucose residues, which are linked by α 1, 4 glycosidic bond.

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

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