

Topic :- Biomolecules

- 1 (a)
Creatine phosphate is a reservoir of high energy phosphate in muscle cells, as the energy released by its hydrolysis is greater than ATP. **Fat** contains more energy as compared to carbohydrate and protein. It is not directly used in respiration instead first broken down to intermediates common to glucose oxidation, *ie.*, acetyl Co-A, glyceraldehydes phosphate.
- 2 (a)
Amino acids are organic acids (with carboxylic group (-COOH) and having amino group (–NH₂) generally attached to α – carbon or next to the carboxylic group. Carboxylic group provides an acidic property to the amino acid, while amino group gives it a basic reaction. Amino acids are **building blocks** of proteins and enzymes.
- 3 (d)
Seven amino acids are the essential amino acids for man. They include leucine, isoleucine, lysine, methionine, phenylalanine, tryptophan and valine
- 4 (c)
The aggregation of the various kinds of biomolecules in a cell is referred to as the cellular pool
- 5 (d)
Secondary metabolites can be observed in plant, fungal and microbial cells
Some Secondary Metabolites
Pigments – Carotenoids, Anthocyanins, etc.
Alkaloids – Morphine, Codeine, etc.
Terpenoides – Monoterpenes, Diterpenes etc.
Essential oils – Lemon grass oil, etc.
Toxins – Abrin, Ricin
Lectins – Concanavaline –A
Drugs – Vinblastin, curcumin, etc.
Polymeric substances – Rubber, gums, cellulose

- 6 **(a)**
Thousands of compounds including flavonoids, rubber, essential oils, antibiotics, coloured pigments, scents, gums, spices. There are called secondary metabolites
- 7 **(d)**
Photosynthesis is the starting point, in the production of food. It produces glucose, from which all other food materials are produced
- 9 **(a)**
The heterocyclic compounds in nucleic acids are the nitrogenous bases named adenine, guanine, uracil, cytosine and thymine
- 10 **(d)**
Tyrosinase is a copper containing oxides, which is widely distributed in plants and animals including human. It oxidizes tyrosine to melanin in mammal and causes the cut surfaces of many fruits and vegetables to darken.
- 12 **(c)**
The regulation of the chemical composition of blood and body fluids and other aspects of its internal environment by an organism, to maintain its physiological processes is called homeostasis
- 13 **(c)**
In a polysaccharide chain (say glycogen), the right end is called the reducing end and the left end is called the non-reducing end
- 14 **(a)**
Hydrogen.
A and G of one strand compulsorily base pairs with T and C, respectively, on the other strand. There are two hydrogen bonds between A and T and three H-bonds between G and C
- 15 **(b)**
When the inhibitor closely resembles the substrate in its molecular structure and inhibits the activity of the enzyme, it is known as competitive inhibitor
- 16 **(b)**
Adenine and guanine are substituted purines, while the rest (uracil, cytosine and thymine) are substituted pyrimidines
- 17 **(c)**
Almost all enzymes are basically made up of proteins. However, a small group of RNA molecules (*e.g.*, ribozyme) have also been found to be enzymatic exceptionally.

- 18 **(b)**
Amino acids are organic amino acids containing an amino group and an acidic group as substituents on the same carbon, *i.e.*, the α -carbon. Hence, they are called α -amino acids
- 19 **(d)**
Isomerases are the enzymes which bring about rearrangement of molecular structure and catalyse the interconversion of optical, geometrical or positional isomers.
- 20 **(a)**
All the carbon compounds obtained from living tissues are named as biomolecules

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

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