

UNIT V : CELL: STRUCTURE AND FUNCTIONS

10. BIOMOLECULES

1 VSAQ [2M]

ROOT POINTS

1. **Biomolecules** are the molecules or chemicals present in the living organisms.
2. **Types of biomolecules:** (i) Inorganic biomolecules (ii) Organic biomolecules.
3. **Inorganic biomolecules:** Minerals, Gases and Water.
4. **Organic biomolecules:** Carbohydrates, Lipids, Amino acids, Proteins, Enzymes, Nucleotides, Nucleic acids, Vitamins etc.,
5. **Primary metabolites:** Fats, Oils, Nucleotides, Amino acids, Sugars etc.,
6. **Secondary metabolites:** Alkaloids, Flavonoides, Rubber, Essential oils, Antibiotics, Coloured pigments, Scents, Gums, Spices etc.,
7. The most **abundant** biomolecule in living organisms is **water**.
8. **Organic compounds in living organisms:** Amino acids, monosaccharides, nitrogen bases.
9. There are 21 types of amino acids and 5 types of nucleotides.
10. Fats and oils are glycerides in which fatty acids are esterified to glycerol.
11. **Macro molecules in living system:** Proteins, Nucleic acids and Polysaccharides.
12. **Biomacro molecules** are polymers made of building blocks.
13. **Proteins** are heteropolymers made of **amino acids**.
14. **Nucleic acids** (DNA and RNA) are composed of nucleotides, serve as **genetic material**.
15. **Polysaccharides** are components of cell wall in plants, fungi.
16. Polysaccharides are also storage forms of energy. **Ex:** Starch, Glycogen.
17. Proteins serve a variety of cellular functions.
18. Many proteins are enzymes, some are antibodies, some are receptors, some are hormones.
19. **Collagen** is the most abundant protein in **animal world**.
20. RUBISCO is the most abundant protein in the whole of the biosphere.
21. **Amino acids** **Ex:** Glycine **Sugars** **Ex:** Glucose **[IPE]**
 Nucleotide **Ex:** Adenylic acid **Fatty acids** **Ex:** Lecithin, Glycerol

22. Cotton fibre - Cellulose Exo skeleton of cockroach - Chitin [IPE]
Liver - Glycogen Peeled potato - Starch.
23. Lipids are non-polymeric. [NEET-2017]
24. A non-proteinaceous enzyme is ribozyme. [NEET-2016]
25. A typical fat molecule is made up of 1 glycerol and 3 fatty acid molecules. [NEET-2016]
26. The frequency of recombination between gene pairs on the same [NEET-2019]
chromosome as a measure of the distance between genes was explained by Alfred Sturtevant.
27. Purine found in both DNA and RNA are Adenine and Guanine. [NEET-2019]
28. The most abundant protein in the animals is Collagen. [NEET-2020]
29. Formula for Maltose is $C_{12}H_{22}O_{11}$. [NEET-2022]
30. Lactose present in the growth medium of bacteria is transported to the cell by [NEET-2024]
the action of permease.
31. Catalase enzyme contains 'Haem' as the prosthetic group. [NEET-2025]
32. $S-G+S^1 \rightarrow S+S^1-G$. This reaction can be catalysed by transferase class of enzyme. [NEET-2025]