

Biomolecules & Polymers

Qualitative & Quantitative Analysis of Organic Compounds

Date Planned : __ / __ / __	CBSE Pattern	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-0	Exact Duration : _____

Very Short Answer Type

(1 Mark)

- What are monosaccharides?
- Classify the following into monosaccharides and disaccharides.
Ribose, 2-deoxyribose, maltose, galactose, fructose and lactose.
- What is glycogen? How is it different from starch?
- What is the basic structural difference between starch and cellulose?
- What happens when D-glucose is treated with the following reagents?
(i) HI (ii) Bromine water (iii) HNO_3
- What are essential and non-essential amino acids? Give two examples of each type

Short Answer Type-I

(2 Marks)

- Define the following as related to proteins
(i) Peptide linkage (ii) Primary structure (iii) Denaturation
- What are the common types of secondary structure of proteins?
- What type of bonding helps in stabilizing the α -helix structure of proteins?
- Differentiate between globular and fibrous proteins.
- What is the effect of denaturation on the structure of proteins?
- How are vitamins classified? Name the vitamin responsible for the coagulation of blood.
- Why are vitamin A and vitamin C essential to us? Give their important sources.

Short Answer Type-II

(3 Marks)

- What is the difference between a nucleoside and a nucleotide?
- Write the important structural and functional difference between DNA and RNA.
- Distinguish between the terms homopolymer and copolymer and give an example of each
- How do you explain the functionality of a monomer?
- How can you differentiate between addition and condensation polymerization?
- Write the free radical mechanism for the polymerisation of ethene.
- Write the monomers used for getting the following polymers.
(i) Polyvinyl chloride (ii) Teflon (iii) Bakelite

Long Answer Type

(5 Mark)

- Write the name and structure of one of the common initiators used in free radical addition polymerisation.
- How does the presence of double bonds in rubber molecules influence their structure and reactivity?
- Discuss the main purpose of vulcanization of rubber.
- What are the monomeric repeating units of Nylon-6 and Nylon-6,6?
- Write the names and structures of monomers of the following polymers:
(i) Buna-S (ii) Buna-N (iii) Dacron (iv) Neoprene