

**Class: 12**  
**Subject: chemistry**  
**Topic: Biomolecules and polymers**  
**No. of Questions: 25**

1. Which of the following substances do(es) not fall in the category of carbohydrates?

- a. Sugars
- b. Starch
- c. Glycerol
- d. Cellulose

2. Which of the following does not represent a disaccharide?

- a. Sucrose
- b. Maltose
- c. Lactose
- d. Dextrose

3. Maltose is formed by the union of

- a. one molecule of glucose and one molecule of fructose
- b. one molecule of glucose and one molecule of galactose
- c. two molecules of glucose
- d. two molecules of galactose

4. Which of the following sugars has the largest relative sweetness with respect to sucrose?

- a. Glucose
- b. Fructose
- c. Galactose
- d. Maltose

5. Carbohydrates are the compounds of

- a. C, H, N and O
- b. C, H and O
- c. C, N and H
- d. N, H and O

6. The relative sweetness of sugars is measured with respect to the sugar

- a. glucose
- b. fructose
- c. galactose
- d. sucrose

7. Kwashiorkor is caused by the deficiency of

- a. vitamins
- b. hormones
- c. amino acids
- d. essential amino acids

8. The protein molecule present in haemoglobin is

- a. thrombin
- b. fibrinogen
- c. globulin
- d. casein

9. Structure of a DNA molecule is

- a. linear
- b. branched
- c. single helix
- d. double helix

10. Which of the following is not a lipid?

- a. Oil
- b. Wax
- c. Cholesterol
- d. Glycerol

11. Buna-S is a

- a. monomer
- b. polymer
- c. copolymer
- d. dimer

12. Glucose is a monomer of

- a. proteins
- b. rubber
- c. plastic
- d. starch and cellulose

13. Oligomer is a

- a. monomer
- b. short-chain polymer
- c. long-chain polymer
- d. linear polymer

14. Which of the following is a natural polymer?

- a. Bakelite
- b. Nylon
- c. Protein
- d. PVC

15. Which of the following is a synthetic polymer?

- a. Starch
- b. Cellulose
- c. RNA
- d. Terelyne

16. Which of the following is an example of additional polymerisation?

- a. Proteins
- b. Teflon
- c. Nylon-66
- d. Glyptal

17. Which of the following is an example of condensation polymerisation?

- a. PVC
- b. Buna rubber
- c. Dacron
- d. Lutrex

18. Which of the following is an example of elastomers?

- a. Rubbe
- b. Nylon-66
- c. PVC
- d. Bakelite

19. Which of the following is an example of fibre polymer?

- a. Rubber
- b. Nylon-66
- c. PVC
- d. Bakelite

20. The monomer of neoprene is

- a. chloroprene
- b. styrene
- c. vinyl chloride
- d. adipic acid

21. In E. coli DNA, the AT/GC ratio is 0.93. If the number of moles of adenine in the DNA sample is 558,000, calculate the number of moles of guanine present

22. How will you synthesize alanine from acetylene?

23. Write the structure of alanine at pH =2 and pH = 10.

24. Glycine exists as  $(\text{H}_3\text{N}^+\text{CH}_2\text{COO}^-)$  while anthranilic acid  $(\text{P}-\text{NH}_2\text{C}_6\text{H}_4-\text{COOH})$  does not exist as dipolar ions.

25.  $n\text{CF}_2 = \text{CF}_2 \xrightarrow[\text{heat, high pressure}]{\text{A}} (-\text{CF}_2 - \text{CF}_2 -)_n$  Teflon