

2021

**BASICS OF FOOD CHEMISTRY**

*Full Marks: 60*

Time: Two hours

*The figures in the margin indicate full marks for the questions.*

A. Multiple Choice Questions

1 x 20=20

1. If  $n=5$ , then the formula of carbohydrate is
  - a.  $C_5H_{10}O_5$
  - b.  $C_4H_8O_4$
  - c.  $C_3H_6O_3$
  - d.  $C_5H_8O_5$
2. \_\_\_\_\_ is also known as animal starch.
  - a. Cellulose
  - b. Glycogen
  - c. Amylose
  - d. None of these
3. The common chemical name for vitamin C is
  - a. Riboflavin
  - b. Beta-carotene
  - c. Ascorbic acid
  - d. Folic acid
4. Starch is a polymer made from the \_\_\_\_\_ monomer.
  - a. Fructose
  - b. Galactose
  - c. Sucrose
  - d. Glucose

5. Which of these is not a lipid?
  - a. Fats
  - b. Oils
  - c. Proteins
  - d. Waxes
  
6. Which one of the following are the functions of food additives?
  - a. Give the food a smooth and consistent texture
  - b. Improve or preserve the nutrient value
  - c. Maintain the wholesomeness of foods
  - d. All of the above
  
7. Proteins are polymers of
  - a. Amino acids
  - b. Glucose
  - c. Nucleic acids
  - d. Mannose
  
8. Unsaturated fats are made saturated by
  - a. Polymerisation
  - b. Hydrogenation
  - c. Saponification
  - d. None of these
  
9. Which one of the following is essential fatty acids?
  - a. Lauric acid
  - b. Palmitic acid
  - c. Linoleic acid
  - d. Stearic acid
  
10. In which solvent, lipids are insoluble?
  - a. Ether
  - b. Chloroform
  - c. Water
  - d. None of these

11. Sucrose is disaccharide made up of
  - a. Glucose + glucose
  - b. Glucose + galactose
  - c. Galactose + fructose
  - d. Glucose + fructose
12. Which one of the following is homopolysaccharide?
  - a. Starch
  - b. Pectins
  - c. Agar
  - d. None of these
13. Which among the following is a non-essential amino acid?
  - a. Serine
  - b. Threonine
  - c. Lysine
  - d. Histidine
14. A substance intentionally added that preserves flavor and improves taste is called\_\_\_\_\_.
  - a. Food additive
  - b. Food adulterant
  - c. Food material
  - d. Food contaminant
15. Which of the following is reducing sugar?
  - a. Lactose
  - b. Sucrose
  - c. Both (A) and (B)
  - d. None of these
16. Deficiency of which vitamin causes rickets
  - a. Vitamin A
  - b. Vitamin C
  - c. Vitamin K
  - d. Vitamin D

17. The type of bond that is formed between the two sugars is called \_\_\_\_\_.
- Peptide bond
  - Hydrogen bond
  - Glycosidic bond
  - Ester bond
18. Monosaccharides and disaccharides are also called
- Simple sugar
  - Proteins
  - Lipids
  - None of these
19. \_\_\_\_\_ is the sweetest of the monosaccharides.
- Sucrose
  - Fructose
  - Glucose
  - All of the above
20. Which one of the following is an example of simple lipids?
- Waxes
  - Triglycerides
  - Both (A) and (B)
  - None of these

**B. Very Short Question**

2\*6=12

- Define water activity. Write the importance of water activity in food.
- Show the formation of a dipeptide bond.
- Explain the consequences of caramelization.
- Write the important characteristics of fatty acids.
- What is reducing sugar? Give examples.
- Differentiate between homopolysaccharide and heteropolysaccharide

**C Short Question (Any seven)**

4\*7=28

- What are food additives? Write the important functions of food additives.
- Explain the tertiary level of protein structure.

3. Classify oligosaccharides giving suitable examples.
4. What is rancid? Explain the causes of rancidity in oily food stuff.
5. Explain essential fatty acids giving suitable examples.
6. What are D and L-isomers? Draw the structure of D and L-glucose.
7. What is protein denaturation? Write the causes of denaturation of protein.
8. Distinguish between saturated and unsaturated fatty acid.
9. Explain the role of chemist in food industries.

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