2025/12

SET A

BACHELOR OF MEDICAL LABORATORY TECHNOLOGY
FIRST SEMESTER
BIOCHEMISTRY-I
BMLT – 103

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

Objective

Time: 30 min. **Marks: 20**

Choose the correct answer from the following: ***1×20=20***

1. The term Biochemistry means:
   a. Study of chemical of Earth
   b. Study of chemical processes in living organisms
   c. Study of laboratory techniques only
   d. Study of physical properties of metals
2. Carbohydrates are defined as:
   a. Compounds of C, H, and O usually in ratio (CH2O)n
   b. Fatty acids and glycerol molecules
   c. Organic compounds with nitrogen base
   d. Amino acid polymers
3. Who discovered the first Enzyme:
   a. Anselme Payen, 1833
   b. Edward Buchner, 1900
   c. Felix Hoppe-Seyler, 1800
   d. Carl Neuberg, 1903
4. Who coined the term biochemistry, "Father of Modern Biochemistry"
   a. Carl Neuberg, 1903
   b. Felix Hoppe-Seyler, 1800
   c. Edward Buchner, 1900
   d. Anselme Payen, 1833
5. Lipids are insoluble in:
   a. Water
   b. Chloroform
   c. Ether
   d. Benzene
6. Common specimens in clinical biochemistry:
   a. Urine
   b. CSF
   c. Blood
   d. All of the above
7. Which of the following is primary biological function of carbohydrates
   a. Long-term genetic information
   b. Providing the main source of energy for the body
   c. Catalyzing chemical reactions as enzymes
   d. Providing waterproof coating on the surface of plants
8. Based on their structure, which of the following is a classification of carbohydrates?
   a. Monosaccharide
   b. Saturated fats
   c. Peptides
   d. Amino acids

9. Fructose is a type of sugar. What is its classification?
   a. Oligosaccharide
   b. Disaccharide
   c. Polysaccharide
   d. Monosaccharide

10. The bond that joins two amino acids together is called:
   a. Hydrogen bond
   b. Disulfide bond
   c. Peptide bond
   d. Ionic bond

11. Which of the following amino acids is essential for humans?
   a. Glycine
   b. Lysine
   c. Alanine
   d. Serine

12. The protein that helps in oxygen transport in the blood is:
   a. Collagen
   b. Hemoglobin
   c. Myoglobulin
   d. Albumin

13. Which of the following is a function of lipids?
   a. Store energy
   b. Form genetic material
   c. Form enzymes
   d. Form bones

14. Amino acids are the building blocks of:
   a. Lipids
   b. Carbohydrates
   c. Proteins
   d. Nucleic acis

15. The primary structure of a protein refers to:
   a. Linear sequence of amino acid
   b. 3D folding of chain
   c. Alpha helix or beta sheet
   d. Association of sub-units

16. Collagen and Keratin are examples of:
   a. Globular proteins
   b. Conjugated proteins
   c. Fibrous proteins
   d. Derived proteins

17. The main storage form of carbohydrates in animals is:
   a. Starch
   b. Cellulose
   c. Glycogen
   d. Maltose

18. The simplest form of carbohydrate is:
   a. Monosaccharide
   b. Polysaccharide
   c. Disaccharide
   d. Oligosaccharide

19. Which of the following is a disaccharide?
   a. Glucose
   b. Glycogen
   c. Maltose
   d. Starch

20. Enzymes are:
   a. Inorganic catalysts
   b. Lipids that store energy
   c. Protein that speed up chemical reaction
   d. Nucleic acids involved in protein synthesis

-- --- --

Descriptive

Time : 2 hrs. 30 mins. Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. a. What are carbohydrates? State its functions. 3+5+2 =10
   b. Classify carbohydrates with suitable examples each.
   c. Define Aldoses and Ketoses.

2. Define Biochemistry. Explain its roots and importance in clinical practices in detail. 2+8=10

3. a. What are amino acids? Give its general structure. 2+8=10
   b. Classify amino acids in detail based on their:
   -Polarity -Metabolic fate
   -Nutrition

4. a. What is denaturation and explain the structure of proteins in detail. 6+4=10
   b. List down the properties of protein.

5. a. List down some agents of denaturation. 3+7=10
   b. Classify protein in detail with suitable examples.

6. Define lipids and describe its classification in detail 2+8=10

7. Describe the reaction of monosaccharide in detail 10

8. Briefly describe the physical and chemical properties of amino acid. 5+5=10

= = *** = =