REV-01
BMLT/73/36/41

2025/05

SET B

BACHELOR OF MEDICAL LABORATORY TECHNOLOGY
FOURTH SEMESTER
BIOCHEMISTRY-IV
BMLT – 403

[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. Deficiency of iron results in:
   a. Rickets b. Anemia
   c. Goiter d. Osteomalacia

2. Fluoride helps in preventing:
   a. Hair loss b. Tooth decay
   c. Night blindness d. Obesity

3. Iodine deficiency leads to:
   a. Anemia b. Scurvy
   c. Goiter d. Rickets

4. Calcium is essential for:
   a. Protein synthesis b. Vision
   c. Blood clotting and bone strength d. DNA replication

5. Which vitamin is important for vision?
   a. Vitamin D b. Vitamin C
   c. Vitamin A d. Vitamin K

6. Vitamin C deficiency leads to:
   a. Scurvy b. Rickets
   c. Beriberi d. Anemia

7. Vitamins are classified as:
   a. Fatty acids and amino acids b. Water soluble and fat soluble
   c. Organic and inorganic d. Sugars and starches

8. Serotonin helps in regulating:
   a. Digestion b. Sleep and mood
   c. Vision d. Blood clotting

9. GABA functions as a:
   a. Hormone b. Vitamin
   c. Neurotransmitter d. Enzyme

10. Dopamine and epinephrine are examples of:
    a. Peptides
    b. Catecholamines
    c. Amino acids
    d. Steroids

11. Methionine is an essential amino acid that contains:
    a. Sulphur
    b. Phosphorus
    c. Iron
    d. Zinc

12. The pigment formed from hemoglobin breakdown is:
    a. Melanin
    b. Bilirubin
    c. Myoglobin
    d. Hemin

13. The main toxic product formed from amino acid metabolism is:
    a. CO2
    b. Urea
    c. Ammonia
    d. Lactic acid

14. Oxidative deamination mainly occurs in the:
    a. Kidney
    b. Brain
    c. Liver
    d. Muscle

15. Transamination involves the transfer of:
    a. Amino acid
    b. Carboxyl group
    c. Hydrogen atom
    d. Methyl group

16. _____ is the pigment of skin, hair, and eye?
    a. Melanin
    b. Tryptophan
    c. Tyrosine
    d. All of the above

17. The active form of biopterin is:
    a. Trihydrobiopterin
    b. Tetrahydrobiopterin
    c. All the above
    d. None of the above

18. Phenylalanine and Tyrosine are:
    a. Glucogenic amino acid
    b. Ketogenic amino acid
    c. Both glucogenic and ketogenic amino acid
    d. All of the above

19. Thyroid hormones are synthesized by:
    a. Tyrosine
    b. Cysteine
    c. Cystine
    d. None of the above

20. How much protein is breakdown in our body everyday?
    a. 350-450g/day
    b. 250-400g/day
    c. 100-200g/day
    d. 50-100g/day

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Descriptive

Time : 2 hrs. 30 min. **Marks : 50**

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

1. Briefly describe on catabolism of phenylalanine and tyrosine. **10**

2. What are amino acid and protein? Sketch the basic structure of an amino acid in aqueous medium with proper labelling. State the different types of amino acid with one example of each along with the single letter code. **10**

3. Define protein? Sketch the basic structure of an amino acid. State some important functions of proteins. **10**

4. Define vitamins, mention their function and characteristics, explain water-soluble vitamins briefly, and name their deficiency states **10**

5. **a.** State the different levels of structure of proteins. **10**
   b. Write short notes
      i. Catecholamines
      ii. Histamine

6. Write short notes on the following: **10**
   a. Parkinson's Disease
   b. Phenylalanine
   c. Albinism
   d. Alkaptonuria

7. Explain briefly on the metabolism of Sulphur containing amino acids. **10**

8. What are minerals? Give its classification and briefly describe on Phosphorus and Chlorine along with its deficiency state. **10**

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