

**BACHELOR OF MEDICAL LABORATORY TECHNOLOGY  
FOURTH SEMESTER  
BIOCHEMISTRY IV**

**BMLT – 403 [SPECIAL REPEAT]  
[USE OMR SHEET FOR OBJECTIVE PART]**

Duration: 3 hrs.

Full Marks: 70

Time: 30 min.

( Objective )

Marks: 20

*Choose the correct answer from the following:*

**1×20=20**

- Cystine crystals are deposited in many tissues and organs of \_\_\_\_\_ throughout the body.
  - reticuloendothelial system.
  - respiratory system
  - endocrine system.
  - nervous system
- Phenylalanine and tyrosine are
  - Glucogenic
  - Ketogenic
  - Glucogenic and Ketogenic
  - None of the above
- Tyrosine is the precursor for melanin and only one enzyme, namely \_\_\_\_\_ is involved in its formation.
  - Hydroxylase
  - Oxidase
  - Tyrosinase
  - Decarboxylase
- What is the scientific name for Vitamin E?
  - Tocopherol
  - Retinol
  - Calciferol
  - Thiamine
- Which fat-soluble vitamin is crucial for bone health and calcium absorption?
  - Vitamin A
  - Vitamin D
  - Vitamin E
  - Vitamin K
- Ammonotelic is the
  - Aquatic animals dispose of NH<sub>3</sub> into the surrounding water.
  - Ammonia is converted mostly to uric acid
  - Mammals including man convert NH<sub>3</sub> to urea
  - Waste product of nitrogen metabolism.
- The end product of protein metabolism
  - Uric acid
  - Urea
  - Pyruvate
  - Pyruvic acid
- The liberation of free ammonia from the amino group of amino acids coupled with oxidation
  - Transamination
  - Deamination
  - Oxidative deamination
  - Non-Oxidative deamination

9. Which of the following vitamins are not stored in large quantities in the body?
  - a. Vit A
  - b. Vit B<sub>3</sub>
  - c. Vit E
  - d. Vit D
10. Which vitamin is involved in coagulation?
  - a. Vit B
  - b. Vit C
  - c. Vit E
  - d. Vit K
11. Which fat soluble vitamin is synthesized in the skin upon exposure to sunlight?
  - a. Vit B
  - b. Vit C
  - c. Vit D
  - d. Vit K
12. What is the scientific name for vitamin A?
  - a. RETINOL
  - b. THIAMINE
  - c. RIBOFLAVIN
  - d. NIACIN
13. Vitamin E is known for its role as
  - a. Antioxidant
  - b. Bone growth regulator
  - c. Blood-clotting factor
  - d. Pigment synthesizer
14. Which of the following minerals controls growth and body weight?
  - a. Iodine
  - b. Phosphorus
  - c. Calcium
  - d. All of the above.
15. What is the scientific name of vitamin B<sub>7</sub>?
  - a. BIOTIN
  - b. THIAMINE
  - c. RIBOFLAVIN
  - d. NIACIN
16. Cobalt is an integral part of
  - a. Vitamin B1
  - b. Vitamin B12
  - c. Vitamin B4
  - d. Vitamin B2
17. Deficiency of cobalt cause
  - a. Pernicious anemia
  - b. Macrocytic anemia
  - c. Both a and b
  - d. None
18. Which of the following causes candida overgrowth?
  - a. Zinc
  - b. Iron
  - c. Cobalt
  - d. Phosphorus
19. How much is the distribution of zinc in the plasma?
  - a. 5%
  - b. 0.1%
  - c. 2%
  - d. 0.2%
20. Which of the following is not a disease state of phosphorus?
  - a. Night blindness
  - b. Diabetes mellitus
  - c. Rickets
  - d. Thyroidism

**( Descriptive )**

Time : 2 hrs. 30 min.

Marks : 50

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

1. Describe the Absorption, transport and storage of vitamin D and its regulation. Write a short note on the deficiency of Vit D and also explain the toxic effects in case of overdose of Vit D. 6+2+2  
=10
2. Describe the metabolism of methionine. Write about Tyrosinemia. 5+5=10
3. Briefly discuss about the Wald's visual cycle. Write a short note on retinoids and xerophthalmia. 5+5=10
4. Describe urea cycle and its associated metabolic disorders. 1+4+5  
=10
5. Discuss transamination and its salient features. Explain the metabolism of ammonia. 10
6. Explain about the degradation of HB in details. Write something about Phenylketonuria. 8+2=10
7. Define vitamins. Write the classification of vitamins. Explain the deficiency of vitamin B1/Thiamine. 5+5=10
8. Describe the biochemical functions of Vitamin C. Explain the biochemical functions of Riboflavin with some selected examples of FAD and FMN dependent enzyme along with their respective reactions. 5+5=10

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