REV-01
BMLT/15/20

2025/12

SET A

BACHELOR OF MEDICAL LABORATORY TECHNOLOGY
FIRST SEMESTER
PATHOLOGY I
BMLT – 105 [REPEAT]

[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. For routine blood collection in adults, the preferred needle gauge is:
   a. 18 G b. 21 G
   c. 25 G d. None of these
2. Which method is used for measuring hemoglobin?
   a. Sahli's method b. Cyanmethemoglobin method
   c. Both of these d. None of these
3. Which granule content is characteristic of basophils?
   a. Histamine and heparin b. Hemoglobin and myoglobin
   c. Antibodies d. Platelet factors
4. Arterial blood is usually collected from:
   a. Capillaries b. Veins
   c. Radial or brachial artery d. Bone marrow
5. Hayem's solution is used for:
   a. WBC b. RBC
   c. Platelets d. plasma
6. Which of the following is not a biological hazard?
   a. Airborne organisms b. Infectious agents
   c. Blood-borne organisms d. Toxic chemicals
7. The ABO blood group system was discovered by:
   a. Karl Landsteiner b. Walsh
   c. Philips Levine d. None of these
8. Which of the following is a flammable chemical?
   a. Acetone b. Alcohol
   c. Both A and B d. None of these
9. The four main ABO blood groups are:
   a. A, AB, B, D b. A, B, AB, O
   c. A, B, O, C d. All of these

10. The heme portion of hemoglobin contains:
    a. Zinc ion
    b. Calcium ion
    c. Magnesium ion
    d. Iron ion

11. Which of the following is NOT a component of blood?
    a. Erythrocytes
    b. Neuron
    c. Plasma
    d. platelets

12. Rh-positive individuals have which antigen on RBCs
    a. AB antigen
    b. B antigen
    c. D antigen
    d. None of these

13. Platelets are formed from:
    a. Megakaryocytes
    b. Monocytes
    c. Lymphocytes
    d. Erythroblast

14. Which of the following is a commonly used anticoagulant in haematology?
    a. Sodium citrate 3.2%
    b. Sodium chloride
    c. Plain vial
    d. EDTA

15. The main function of plasma is:
    a. Blood clotting only
    b. Transport of nutrients and hormones
    c. Producing antibodies
    d. Oxygen transport

16. Hemoglobin is primarily found in:
    a. Plasma
    b. RBC
    c. WBC
    d. Plasma

17. A symbol with black pictures in yellow or orange background indicates:
    a. Prohibitory symbol
    b. Hazard warning symbols
    c. Safety symbol
    d. None of these

18. Which of the following is the main site of urine formation?
    a. Ureter
    b. Bladder
    c. Nephron
    d. Renal capsule

19. The pH of normal urine typically ranges between:
    a. 3.5 - 4.5
    b. 8.0 - 10.0
    c. 7.5 - 9.0
    d. 4.5 - 8.0

20. The main physiological processes in urine formation are:
    a. Filtration, reabsorption, secretion
    b. Filtration, absorption, excretion
    c. Diffusion, osmosis, filtration
    d. All of these

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Descriptive

Time : 2 hrs. 30 mins. Marks : 50

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

1. Name any three anticoagulants used in haematology. Explain in detail the venipuncture method used for specimen collection. 3+7=10

2. Explain in detail about Laboratory Hazards. 10

3. Define white blood cells (WBCs). Describe the size and nuclear features of each type. 1+4+5 =10

4. What is ESR? Describe the stages of ESR and mention the factors affecting ESR. 1+4+5 =10

5. Explain the different stages of erythropoiesis, describing the morphology and characteristics of each precursor cell. 10

6. Demonstrate the ABO blood grouping system. Mention any four other blood group systems. 6+4=10

7. Write a short note on first aid practices in the laboratory and describe the code of conduct for laboratory personnel. 5+5=10

8. Describe the methods of urine specimen collection and their transportation. 5+5=10

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