REV-01
BMLT/49/54

2025/06

SET A

BACHELOR OF MEDICAL LABORATORY TECHNOLOGY
SIXTH SEMESTER
PATHOLOGY VI
BMLT – 605

[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 daily requirement of iron for adult female is
   a. 5 mg/day
   b. 10 mg/day
   c. 15 mg/day
   d. 20 mg/day

2. Normal size of an erythrocyte is:
   a. 7 – 8 µm
   b. 7 – 8 mm
   c. 8 – 10 µm
   d. 8 – 10 mm

3. In beta-thalassemia major, the following findings may be found, except
   a. Increased red cell distribution width
   b. Presence of target cells
   c. Decreased total iron binding capacity
   d. Diminished HbA synthesis

4. Reed-Sternberg cells are found in
   a. Hodgkin lymphoma
   b. Burkitt lymphoma
   c. Follicular lymphoma
   d. Diffuse lymphoma

5. Risk factors that predispose to leukaemia include all, except:
   a. Myelodysplastic syndrome
   b. Ionizing radiation
   c. Infectious mononucleosis
   d. Down syndrome

6. Pancytopenia is a condition where a person is suffering from
   a. Anaemia
   b. Leukopenia
   c. Thrombocytopenia
   d. All of these

7. Which of the following findings is not a feature of iron deficiency anemia?
   a. Increased total iron binding capacity
   b. Decreased bone marrow iron
   c. Decreased red cell protoporphyrin
   d. Microcytic hypochromic anemia

8. Decrease in the oxygen-carrying capacity of the blood causes
   a. Anaemia
   b. Leukopenia
   c. Thrombocytopenia
   d. All of these

9. Which of the following is the normal range of MCH at birth
   a. 100-120 fL
   b. 31-37 pg
   c. 30-36 g/dL
   d. 13-18%

10. Aplastic anemia is NOT caused by
    a. Benzene
    b. Whole body irradiation
    c. Chloramphenicol
    d. Bacterial endocarditis

11. Crew cut appearance on skull X-ray is found in
    a. Thalassemia major
    b. Pernicious anemia
    c. Multiple myeloma
    d. Burkitt lymphoma

12. Vitamin B12-IF complex is absorbed in
    a. First part of duodenum
    b. Second part of duodenum
    c. Jejunum
    d. Ileum

13. The central pallor is increased in which condition
    a. Microcytic hypochromic anaemia
    b. Normocytic normochromic anaemia
    c. Macrocytic normochromic anaemia
    d. All of these

14. Megaloblastic anemia can be caused by a deficiency of which vitamin?
    a. Vitamin C
    b. Vitamin B1
    c. Vitamin B12
    d. Vitamin A

15. What is the primary mechanism leading to megaloblastic anemia?
    a. Enhanced erythropoietin production
    b. Disrupted DNA synthesis
    c. Increased red blood cell destruction
    d. Impaired iron absorption

16. Majority of lymphoid neoplasms arise from
    a. B cell
    b. T cell
    c. NK cell
    d. Monocyte

17. The following is the most accurate estimate of iron stores in the body
    a. Serum iron
    b. Serum ferritin
    c. Total iron binding capacity
    d. Prussian blue reaction

18. The best and earliest hematological finding in megaloblastic anemia is
    a. Decreased haemoglobin
    b. Decreased haematocrit
    c. Hypersegmented neutrophils
    d. Poikilocytosis

19. Which of the following is increased in iron deficiency anemia
    a. Serum iron
    b. Serum ferritin
    c. Total iron binding capacity
    d. Ceruloplasmin

20. The following is not true with regard to acquired aplastic anaemia:
    a. Preceded by viral hepatitis
    b. Increased reticulocyte count
    c. Absence of splenomegaly
    d. All of these

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Descriptive

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

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

1. Define anemia. Write a short note on red cell indices. Explain the classifications of anemia with examples. **2+3+5 =10**

2. Define lymphomas. Explain the classification of lymphomas. **2+8=10**

3. Discuss briefly about the pathogenesis and clinical features of iron deficiency anemia. Explain the laboratory diagnosis of iron deficiency anemia. **5+5=10**

4. Explain the absorption, transport, storage and function of vitamin B12 in the human body. Discuss about the laboratory diagnosis of megaloblastic anemia. **6+4=10**

5. Define megaloblastic anaemia. Explain the causes of megaloblastic anaemia. Write a short note on metabolism of folic acid. **1+4+5 =10**

6. Define thalassemia syndrome and explain it's classification in detail. Discuss briefly about the pathophysiology of β-thalassemia. **1+4+5 =10**

7. Define aplastic anemia. Explain the etiology, pathogenesis and laboratory diagnosis of aplastic anemia. **1+3+3+ 3=10**

8. Describe the metabolism of iron in the human body including iron distribution, absorption, transport and excretion. **2+4+2+ 2=10**

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