

**BACHELOR OF MEDICAL LABORATORY
TECHNOLOGY
THIRD SEMESTER
APPLIED HAEMATOLOGY
BMLT – 301
(USE OMR SHEET FOR OBJECTIVE PART)**

**SET
A**

Duration: 3 hrs.

Full Marks: 70

Time: 30 min.

(Objective)

Marks: 20

Choose the correct answer from the following:

1×20=20

1. 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%
2. Which of the following hemoglobin variant is found in the least proportion in an adult adultman?
 - a. HbA
 - b. HbA2
 - c. HbF
 - d. None of these
3. Iron is found in which ion form in a hemoglobin
 - a. Ferrous ion
 - b. Ferric ion
 - c. Both of these
 - d. None of these
4. Which of the following hemoglobin variant is found the most in a new born?
 - a. HbA
 - b. HbA2
 - c. HbF
 - d. None of these
5. Which of the following is a structural abnormality of hemoglobin
 - a. HbS
 - b. HbC
 - c. HbD
 - d. All of these
6. Which WBC gets activated during parasitic infection
 - a. Lymphocytes
 - b. Eosinophils
 - c. Neutrophils
 - d. Monocyte
7. At what stage red blood cells are formed
 - a. Hepatic period
 - b. Myeloid period
 - c. Mesoblastic development
 - d. Lymphoid period
8. Which is the best site for bone marrow sampling in an adult?
 - a. Iliac crest
 - b. Tibia
 - c. Sternum
 - d. Vertebra
9. Leukocytosis refers to a condition when there is an
 - a. Increase in WBC count
 - b. Decrease in WBC count
 - c. Increase in platelet count
 - d. Decrease in platelet count

10. Which stain is used to determine the presence of iron in Bone Marrow?
 - a. Leishman stain
 - b. Giemsa Stain
 - c. Prussian Blue stain
 - d. Hematoxylin stain
11. Salah's needle is used for which purpose?
 - a. Bone Marrow Aspiration
 - b. CSF Examination
 - c. Blood Collection
 - d. Blood Donation
12. Which of these tests is not done in Iron Deficiency Anemia?
 - a. Serum Ferritin
 - b. Serum Iron
 - c. Total iron binding capacity
 - d. Osmotic fragility
13. What is the normal range of platelet count?
 - a. 10,000-50,000/cumm
 - b. 1 -1.5 lac/cumm
 - c. 1.5-4.5 lac/cumm
 - d. 5-7 lac/cumm
14. Prothrombin time is an indicator of what?
 - a. Extrinsic Coagulation Pathway
 - b. Primary hemostasis
 - c. Fibrinolysis
 - d. Platelet function
15. Which is the most common site of bone marrow aspiration in adults?
 - a. Iliac crest
 - b. Sternum
 - c. Vertebra
 - d. Tibia
16. ALL is most common in childhood with a peak incidence at
 - a. 2-5 years
 - b. 3-4 years
 - c. 4-6 years
 - d. 1-2 years
17. Increase in heart rate is called
 - a. Dyspnea
 - b. Tachycardia
 - c. Petechiae
 - d. None of the above
18. Majority of CLL are usually detected between
 - a. 45 and 75 years
 - b. 35 and 65 years
 - c. 25 and 45 years
 - d. 15 and 65 years
19. Leukemia is
 - a. Infection of the red blood cells
 - b. Rapid death of all blood cells
 - c. Lack of red blood cells
 - d. Cancer of white blood cells
20. The cause of leukemia is unknown but risk factors include
 - a. Exposure to high amount of radiation
 - b. Exposure to chemicals such as benzene
 - c. Genetic problems
 - d. All of the above

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(Descriptive)

Time : 2 hrs. 30 min.

Marks : 50

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

1. Draw a labelled diagram and explain about the biosynthesis of hemoglobin. Write a short note on the structure of heme. 1+9=10
2. Write the clinical features and FAB Classification of Chronic Myelogenous Leukemia [CML]. Write the laboratory findings of Chronic Myelogenous Leukemia [CML]. 5+5=10
3. Define hemoglobin. Discuss the types of Hemoglobin. Describe haemoglobinopathies along with its types. 5+5=10
4. Define hematopoiesis. Explain in details. 10
5. Define Leukemia. Discuss its etiology/causes and classification. Define Leukaemoid reactions. Classify myeloid and lymphoid reactions. 1+4+5=10
6. Explain normal hemostasis. Write briefly about the screening tests used in bleeding disorders. 5+5=10
7. What are the indications of bone marrow aspiration and biopsy? Describe about the examination of bone marrow specimens. 2+8=10
8. Enumerate special tests in hematology. Describe briefly about a) Sick Cell Preparation and its interpretation b) Osmotic Fragility test and its interpretation 5+5=10

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