(*University of Choice*)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER MAIN EXAMINATIONS

FOR THE DEGREE
OF
BACHELOR OF MEDICAL LABORATORY SCIENCES
DIRECT ENTRY/UPGRADING

COURSE CODE: BML 223:

COURSE TITLE: CLINICAL HAEMATOLOGY

DATE: 18TH APRIL 2023   **TIME: 8.00 – 10.00AM**

INSTRUCTIONS TO CANDIDATES

This paper is divided into three sections, **A B** and **C,** carrying respectively: Multiple Choice Questions (**MCQs**), Short Answer Questions (**SAQs**) and Long Answer Questions (**LAQs**). Answer all Questions. **DO NOT WRITE ON THE QUESTION PAPER.**

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

SECTION A: Short Answer Questions (20 Marks)

1. Anaemia may result from the following
A. Blood destruction (Haemolysis)
C. Blood Loss
B. Inadequate production of normal cells
D. All the above

2. The following constitute major red blood cells concentration measurements except__.
A. Haemoglobin concentration
C. Packed cell volume
B. Mean cell volume
D. Red blood cell count

3. Which of the following factors are necessary for haemoglobin formation?
A. First class amino acids
C. Iron
B. Copper
D. All the above

4. Which of the following are roles of iron in the body?
A. Carrier of oxygen from lung to tissues
B. Transport of electrons within cells
C. Co-factor of essential enzymatic reactions 2 alpha chains and 2 delta polypeptides
D. All the above

5. Which of the following is the earliest sign of megaloblastic haematopoiesis?
A. Howell jolly bodies
B. Basophilic stippling
C. Hyper segmented neutrophils
D. All of the above

6. The following are causes of inherited haemolytic anaemia except_____.
A. Enzymopathies
B. Haemolytic Disease of the New-born
C. Membrane defects
D. Haemoglobinopathies

7. Which of the following types anaemias result from enzymes defect?
A. Hereditary spherocytosis
B. Hereditary stomatocytosis
C. Glucose 6 Phosphate Dehydrogenase Deficiency
D. Hereditary elliptocytosis

8. The following are leucocyte abnormalities except_____.

A. Pappenheimer bodies
B. Toxic granulation
C. Dohle bodies
D. Vacuoles

9. The following are Laboratory investigations for Iron deficiency anaemia
A. Complete blood count
B. Response to iron supplements
C. Serum Iron profile
D. All the above

10. Which of the following is NOT one of the causes of Megaloblastic anaemia?
A. Inadequate intake of vitamin B12
B. Malabsorption of Vitamin B12 in the intestines

C. Defect in transferrin receptors
D. Transport defects of Vitamin B12
11. Ethylene diamine tetra acetic acid is used as the anticoagulant of choice in the following procedures except _____ .
A. Complete blood count
B. Leucocyte Differential counts
C. Coagulation studies
D. Peripheral blood film studies
12. Eosinophilia is caused by the following except_____ .
A. Allergic diseases
B. Parasitic diseases
C. Bacterial infections
D. Graft-versus-host disease
13. Peripheral Blood film examination of leucocyte nuclear abnormalities include the following
A. hyper-segmentation
B. Atypical lymphocytes
C. Hypo-lobulation
D. All the above
14. Leucoerythroblastic Picture is the presence of red blood cells and a few immature granulocytes. This normally indicates the following conditions except? _____
A. Haemolysis
B. Leukaemia
C. Response to haematinics
D. Aplastic anaemia
15. The following conditions result from Deficiency of coagulation factors except? _____
A. Haemophilia
B. Von Willebrand disease
C. Fibrinogen deficiency
D. Platelet granule disorders
16. In iron deficiency anaemia, the erythrocytic indices are typically _____ .
A. MCV increased, MCH decreased, and MCHC decreased
B. MCV decreased, MCH increased, and MCHC decreased
C. MCV decreased, MCH decreased, and MCHC decreased
D. MCV decreased, MCH decreased, and MCHC normal
17. Megaloblastic anaemias can be caused by _____ .
A. tapeworm infestation
B. gastric resection
C. nutritional deficiency
D. all of the above
18. The following are important factors that contribute to accurate diagnosis:
A. The provision of clinical information
B. The correct sample- type and time
C. Correct Procedure
D. All the above
19. The following conditions causes lymphopenia except? _____
A. Immunodeficiency syndromes
B. Chronic lymphoid leukaemia
C. Hodgkin lymphoma
D. Widespread irradiation

20. Types of mutations detected in cancer fall into two broad groups, Driver mutations and Passenger mutations. The following are characteristics of passenger mutations except?

A. May have already been present in cell from which cancer arose
B. Do not confer a growth advantage
C. Confer selective growth advantage to a cancer cell
D. Arise as a neutral genetic change in the proliferating cell

SECTION B: Short Answer Questions (40 Marks)
1. Define and list any FOUR manifestations of anaemia in a patient (5 marks)
2. Describe haemoglobinopathies giving examples (5 marks)
3. List any FIVE Components of the Haemostatic System (5 marks)
4. State any FIVE laboratory findings in Megaloblastic anaemia (5 marks)
5. State FIVE criteria used in the Classification of Leukaemia (5 marks)
6. Describe any FIVE variations in erythrocyte morphology including their associated disorders (5 marks)
7. Define and state FOUR causes of Disseminated intravascular coagulation (DIC) (5 marks
8. State any FIVE body fluids apart from blood haematological examinations are done (5 marks)

SECTION C: Long Answer Questions (60 MARKS)

1. Describe classification of anaemias giving examples (20 Marks)
2. Discuss leukaemia in relation to classification and laboratory findings (20marks)
3. a. Describe hemostasis (10 Marks)
   b. State laboratory tests and purposes of hemostasis system (10marks)