



KENYATTA UNIVERSITY
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN MEDICAL
LABORATORY SCIENCE
HML 206: HEMATOLOGY II

2ND SEMESTER 2022/2023

TIME: 2 HOURS

SECTION A: ANSWER ALL QUESTIONS (4 MARKS EACH)

1. Describe **four** causes of microcytic hypochromic anemia (4 marks).
2. List **four** laboratory findings for a patient suffering from polycythemia vera (4 marks).
3. Enumerate **four** factors that hinder the absorption of iron among humans (4 marks).
4. State **four** types of cytochemical stains used in the diagnosing of leukemia (4 marks).
5. Highlight **four** causes of inadequate production of mature erythrocytes (4 marks).

SECTION B: ANSWER ANY ONE QUESTION: (20 MARKS EACH)

6. (a) Discuss factors that impair normal reticulocyte response to anemia (10 marks)

(b) Describe various forms of red blood cells inclusion bodies (10 marks)
7. (a) Discuss various forms of anisopoikilocytosis highlighting their causes (10 marks)

(b) Describe various types of qualitative hemoglobinopathies (10 marks)

SECTION C: ANSWER ALL QUESTIONS IN THE ANSWER BOOKLET: (1/2 MARK EACH)

1. Defect in the intrinsic pathway of clotting causes
 - a) ↑aPTT
 - b) ↑PT
 - c) ↓aPTT
 - d) ↓PT
2. In hemophilia A-true
 - a) Normal PT, Elevated APTT
 - b) Elevated PT, Normal APTT
 - c) Elevated CT, Normal APTT

- Insufficient centrifugation will result in:
- A false increase in hematocrit (Hct) value
 - A false decrease in Hct value
 - No effect on Hct value
 - All of these options, depending on the patient
13. Variation in red cell size observed on the peripheral smear is described as:
- Anisocytosis
 - Hypochromia
 - Poikilocytosis
 - Pleocytosis
14. When an erythrocyte containing iron granules is stained with Prussian blue, the cell is called a:
- Spherocyte
 - Leptocyte
 - Schistocyte
 - Siderocyte
15. A 7.0-mL ethylenediaminetetraacetic acid (EDTA) tube is received in the laboratory containing only 2.0 mL of blood. If the laboratory is using manual techniques, which of the following tests will most likely be erroneous?
- RBC count
 - Hemoglobin (Hgb)
 - Hct
 - WBC count
16. Which of the following erythrocyte inclusions can be visualized with supravital stain but cannot be detected on a Wright's-stained blood smear?
- Basophilic stippling
 - Heinz bodies
 - Howell-Jolly bodies
 - Siderotic granules
17. Which morphological classification is characteristic of megaloblastic anemia?
- Normocytic, normochromic
 - Microcytic, normochromic
 - Macrocytic, hypochromic
 - Macrocytic, normochromic
18. RBC indices obtained on an anemic patient are as follows: MCV 88 μm^3 (fL); MCH 30 pg; MCHC 34% (.340). The RBCs on the peripheral smear would appear.
- Microcytic, hypochromic
 - Microcytic, normochromic
 - Normocytic, normochromic
 - Normocytic, hypochromic
19. All of the following factors may influence the erythrocyte sedimentation rate (ESR) except.
- Blood drawn into a sodium citrate tube
 - Anisocytosis, poikilocytosis
 - Plasma proteins
 - Caliber of the tube

- d) Normal CT, Elevated APTT
3. Which one is not true about hemophilia B
- a) Factor 9 deficiency
 - b) X-linked disorder
 - c) Clinically distinguishable from hemophilia A
 - d) Fresh frozen plasma is given for treatment
4. Hemophilia A is
- a) Christmas disease
 - b) Factor VIII deficiency
 - c) Factor IX deficiency
 - d) Von Willebrand disease
5. X-linked recessive disease in male with clotting defect is
- a) Hemophilia A
 - b) ITP
 - c) Von-Willebrand disease
 - d) None
6. Which of these is a feature of Factor XIII deficiency?
- a) Early solubilization of clot
 - b) Stable clot
 - c) No clot formation
 - d) Small clot fragments
7. Which of the followings factor increases erythrocyte sedimentation rate value.
- a) Albumin
 - b) Spherocyte
 - c) Microcyte
 - d) Cholesterol
8. Which of the followings is not a red cell indices
- a) MCH
 - b) MCD
 - c) MCP
 - d) MCHC
9. Serum differs from plasma due to the absence of
- a) Fibrinogen
 - b) Globulin
 - c) Thromboplastin
 - d) Prothrombin
10. The blood product used for the treatment of haemophilic patients :
- a) FFP
 - b) Cryoprecipitate
 - c) Packed red cell
 - d) PRP
11. Absence of which clotting factor leads to Hemophilia-A?
- a) Factor VII
 - b) Factor VIII
 - c) Factor IX
 - d) Factor X

20. A correction is necessary for WBC counts when nucleated RBCs are seen on the peripheral smear because.

- a) The WBC count would be falsely lower
- b) The RBC count is too low
- c) Nucleated RBCs are counted as leukocytes
- d) Nucleated RBCs are confused with giant platelets