



TECHNICAL UNIVERSITY OF MOMBASA
FACULTY OF APPLIED AND HEALTH SCIENCES
DEPARTMENT OF MEDICAL SCIENCES
UNIVERSITY EXAMINATION FOR:
BMLS
AML 4305: HEMATOLOGY II
END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: Pick Date Oct 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **TWO** Section(s). Attempt **ALL** questions.

Circle the correct answer in section A. PAPER 2

Section A 30 marks

Q1 Where are blood cells formed in the body before birth?

- a) Blood is formed in the red bone marrow of small bones
- b) In the heart
- c) In the gut
- d) Yolk sac
- e) None of the above

Q2 Approximately what percent of Blood cells are made in the bone marrow

- a) 40%
- b) 50%
- c) 100%
- d) 65-70%
- e) Only 1%

Q3 Lymphatics are known to produce

- a) Monocytes
- b) Basophils
- c) NK cells
- d) T & B lymphocytes
- e) None of the above

Q4 Neutrophil is an example of

- a) Polymorphonuclear cell
- b) Mononuclear cell
- c) NK cell
- d) Nonproliferating cell
- e) All the above

Q5 For T- Lymphocytes to be immunologically functional

- a) Phagocytes must be activated
- b) The immune function of the body must be activated
- c) They don't need any preactivation process
- d) Dendritic cells should be available
- e) HLA cells must be present

Q6 The two components required for the synthesis of Hemoglobin are

- a) Vit C
- b) Vit B12
- c) Folic acid
- d) Hem and globin
- e) Vit C & Vit B12

Q7 In which part of the body Heme is synthesized

- a) In the bone marrow
- b) In the liver
- c) In the spleen
- d) In the lymph nodes
- e) In mitochondria

Q8 Which of the following is a type of Hemoglobin

- a) HbA
- b) HbF
- c) HbA_{1c}
- d) HbS
- e) HbG

Q9 The globin part of the hemoglobin is made in

- a) Mitochondria
- b) In the Mesenteries
- c) In the biceps muscles
- d) In the spleen
- e) In the bone marrow

Q10 The most important hemoglobin before and just after birth is

- a) HbA
- b) HbM
- c) HbF
- d) Hbc
- e) HbD

Q11 The biconcave shape of the red blood cells allows more surface area for:

- a) Oxygen molecule attachment
- b) Allows more Iron attachment
- c) More globin attachment
- d) More porphyrine attachment
- e) None of the above

Q12 The red blood cells with nuclei are called:

- a) Mononuclea cells
- b) Lymphoblasts
- c) Monoblasts
- d) Neutrophyls
- e) Reticulocytes

Q13 Red blood cells are not like other blood cells in that

- a) They cannot divide like other body cells
- b) Because they are red
- c) They don't flow without a guide
- d) They are not made in the bone marrow
- e) None of the above

Q14 Were it not for the Heme component Red blood cells would appear

- a) Black
- b) Color less
- c) White
- d) Pink
- e) Blue

Q15 The ability of the red blood cells of going through arterials is because

- a) They don't have nuclei
- b) They are smaller than the other cells
- c) They do not flow in the pathways like the other cells
- d) They have a long life span
- e) All the above

Q16 An example of hemoglobinopathy eg

- a) Sickle cell anaemia
- b) Dermatitis
- c) Haemorrhage
- d) Fibroides
- e) None of the above

Q17 Buffy coat contains several cells except

- a) Neutrophyls
- b) Basophyls
- c) T-cells
- d) Platelet
- e) Stem cells

Q18 What are four types of cells other than blood cells?

- a) Must cells
- b) Epithelial cells
- c) Nerve cells
- d) Connective tissue cells
- e) All the above

Q19 Conditions that can cause heamolysis to occur include

- a) Autoimmune disease
- b) Heat
- c) Sudden cold
- d) High temperature
- e) None of the above

Q20 When ESR value is High it means

- a) The patient has a current helminthic infection
- b) The patient has very high plasma proteins
- c) The patient has anaemia
- d) It indicates inflametion
- e) All the above

Q21 What is the normal value of ESR

- a) 1-13mm/hour in males
- b) 1-20mm/hour
- c) 1-15mm/hour
- d) 20mm/hour
- e) 0-2mm/hour

Q22 Polycythemia is a condition associated with

- a) Asthma
- b) Rhinitis
- c) Conjunctivitis
- d) Cancer
- e) Bone marrow failure

Q23 High hematocrit value means that

- a) There is overproduction of RBC
- b) There is immature red blood cells
- c) The blood is carrying reticulocytes
- d) The hemoglobin value is high
- e) All the above

Q24 The presence of Howell jolly bodies in the cytoplasm of Red blood cells means

- a) The red cells are mature
- b) The stain used is old
- c) The stain was not filtered
- d) Remnants of nuclei disintegration
- e) None of the above

Q25 In chronic liver infection the commonest red cell inclusion are

- a) Heinz bodies
- b) Howell jolly bodies
- c) Platelets
- d) Globulins
- e) c and d

Q26 The normal range for osmotic fragility test is

- a) 5%-45% hemolysis at salt concentration of 4.5 gmsNaCl/l
- b) 20% 75% hemolysis at salt concentration of 4.5gms NaCl/l
- c) 20% 100% hemolysis at salt concentration of 4.5 gms NaCl/l
- d) 1%-2% hemolysis at salt concentration of 4,5gmsNaCl/l
- e) All the above

Q27 When testing for HIV active infection the ratio Th/Ts is usually

- a) 0.1
- b) 0.2
- c) 0.5
- d) 1
- e) None of the above

Q28 In HIV active infection the activity of macrophage are affected

- a) This because they also have the virus
- b) This because the virus binds white cells
- c) The ruptured leukocytes with the virus impairs the macrophages
- d) But they function normally
- e) All the above

Q29 When reading the blood slide reticulocytes are reported because

- a) It indicates abnormally high cell production
- b) Bone marrow malfunction
- c) Presence of immature RBC
- d) Nucleated RBC
- e) All the above

Q30 The electrophoresis method relies on

- a) Charged proteins subjected to an electric current and separate size of molecular weight
- b) Electrons are moving in buffered water
- c) +ve charges move to the -ve terminal of the bridge
- d) +ve charges move to +ve terminal of the bridge
- e) None of the above

Section B 40 marks

Q31 Describe the principle of osmotic fragility test and give examples 20 marks

Q31a Briefly discuss the occurrence of Normocytic anaemia in patients 10 marks

b) List the types of leukocytes found in blood 10 marks