"Investing in Africa's future"

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

NSLS 202 HAEMATOLOGY I THEORY FINAL

END OF SECOND SEMESTER EXAMINATIONS

NOVEMBER 2019

LECTURER: P NAGO

DURATION: 3 HOURS

INSTRUCTIONS

1. Do not write your name on the answer sheet
2. Use Answer Sheets Provided
3. Begin your answer for Each Question on a New Page
4. Credit is Given for Neat Presentation

Commented [U1]: Give clear instructions

Section A: (40 Marks)

Commented [U2]: Give instructions for this section

1. The following is true about Blood Pressure (P):

T F (A) is the amount of pressure that the blood exerts on vessel walls

T F (B) blood moves through vessels from high to low pressure

T F (C) blood moves through vessels from low to high pressure

T F (D) only (C) is correct

2. Universal (standard) precautions apply to all the following except:

T F (A) Blood

T F (B) Cerebral spinal fluid

T F (C) Microhaematocrit clay

T F (A) Concentrated acids

3. Lab request forms for full blood count tests should be completely filled in. The type of information to be put include :

T F (A) patient's full name

T F (B) patient's unique identification number

T F (C) date of collection is not important

T F (D) collector's name

4. In an average 70kg man , there is _____ of blood:

T F (A) 6.5 liters

T F 8.5 liters

T F (C) 5.6 liters

T F (D) 7.0 liters

5. Exchange of fluid between capillaries and tissues is affected by :

T F (A) Hydrostatic pressure

T F (B) Amniocentesis

T F (C) Osmotic pressure

T F (D) Oncotic pressure

6. Paracrine cell signaling is :

T F (A) A type of cell signaling in which soluble forms of cytokine receptors are shed by cells that interact with distant target cells expressing the relevant cytokine on their surface membranes

T F (B) A form of cell signaling in which a cell secrets a hormone or cytokine that exerts its activity on the same type of cell

T F (C) A form of cell signaling in which a cell secrets a hormone or cytokine that exerts its activity on cells that are in contact with the secreting cell

T F (D) A form of cell signaling in which a cell secrets a hormone or cytokine that exerts its activity on cells that are close to, but not in contact with the secreting cell.

7. The following are Romanowsky stains:

T F (A) Azurophilic

T F (B) Jamshidi

T F (C) Giemsa

T F (D) Leishman

8. Which of the following is the correct molecular structure of haemoglobin?

T F (A) Four haem groups, two iron, two globin chains

T F (B) Two haem groups, two iron, four globin chains

T F (C) Two haem groups, four iron, four globin chains

T F (D) Four haem groups, four irons, four globin chains

9. The following are some of the causes of thrombocytopenia:

T F (A) Vit B_{12} & folate deficiency

T F (B) Infection

T F (C) Aplastic anaemia

T F (D) thrombotic thrombocytopenic purpura (TTP) is not included

10. Factors of the intrinsic system include:

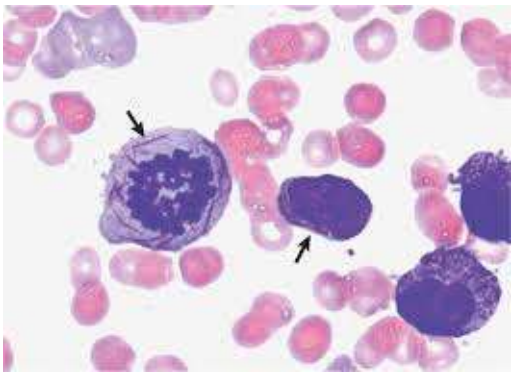
T F (A) Factor XII

T F (B) Factor XI

T F (C) Factor VII

T F (D) Factor VIII

11. What is name given to the pointed white blood cell inclusions in the picture below?



T F (A) Cabot rings

T F (B) Auer rods

T F (C) Pappenheimer Bodies

T F (D) Dohle Bodies

12. Of the Thalassaemia syndromes:

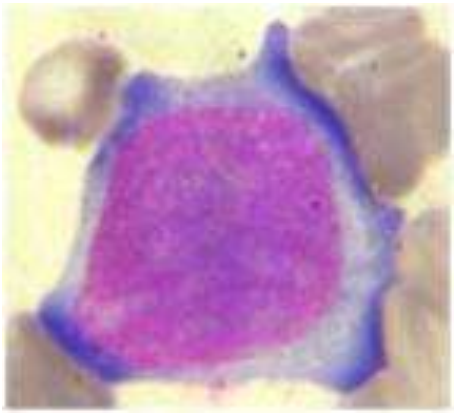
T F (A) Are characterized by reduced or absent synthesis of one or more globin chain type

T F (B) In Thalassaemia disease, globin chain defects are quantitative

T F (C) In Thalassaemia disease, globin chain defects are qualitative

T F (D) In Thalassaemia disease there is ineffective erythropoiesis

13. The cell in the picture below is a:



T F (A) Reticulocyte

T F (B) Pronormoblast

T F (C) Myeloblast

T F (D) Lymphocyte

14. Arrange the following starting with the least mature cell:

T F (A) orthochromatic normoblast →polychromatic normoblast→ reticulocyte →erythrocyte

T F (B) erythrocyte → orthochromatic normoblast → reticulocyte →polychromatic normoblast

T F (C) erythrocyte → reticulocyte →polychromatic normoblast→ orthochromatic normoblast

T F (D) polychromatic normoblast→ orthochromatic normoblast → reticulocyte →erythrocyte

15. Regarding the haematopoietic precursor cells:

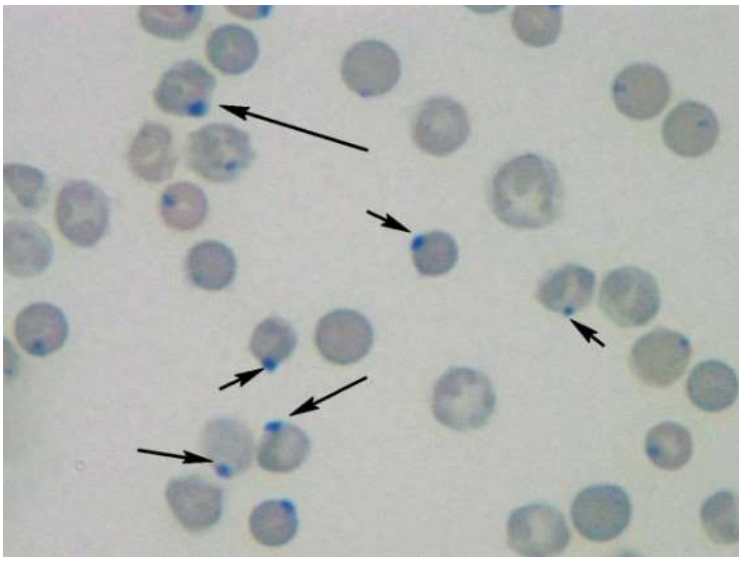
T F (A) Stem cells are morphologically recognized

T F (B) Stem cells constitutes >95% of the haematopoietic precursor cells

T F (C) Maturing cells are morphologically recognized

T F (D) Stem cells constitute ≈ 0.5% of the haematopoietic precursor cells

16. Below is a supravital stain. The inclusions, pointed in the cells below are:



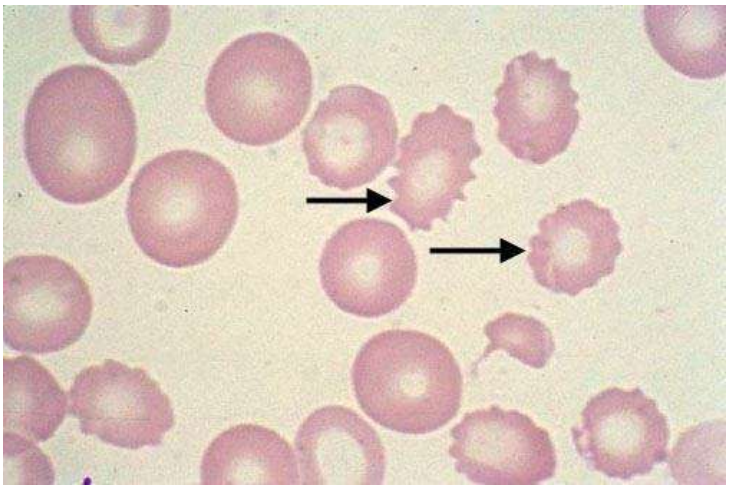
T F (A) Howell Jolly bodies

T F (B) Pappenheimer bodies

T F (C) Heinz bodies

T F (D) Basophilic stippling

17. Name the pointed cells in the picture below:



T F (A) acanthocytes

T F (B) burr cells

T F (C) crenated red cells

T F (D) Monocytes

18. Below shows the order the stem cells, beginning with the highest number of different cell types, they can give rise to

T F (A) Unipotent →pluripotent→ totipotent→ multipotent

T F (B) pluripotent →Unipotent → totipotent→ multipotent

T F (C) multipotent→ pluripotent → totipotent→ Unipotent

T F (D) totipotent→ pluripotent → multipotent→ Unipotent

19. Blood is composed of:

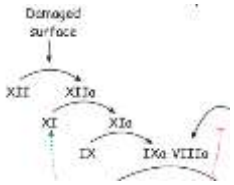
T F (A) Haemostatic proteins

T F (B) Immunoglobulins

T F (C) Innate (inborn) immune system proteins

T F (D) Transport proteins

20. The diagram below shows which pathway of the blood coagulation system?



T F (A) The intrinsic pathway

T F (B) The extrinsic pathway

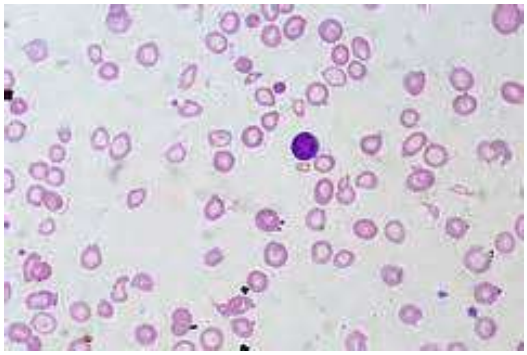
T F (C) The common pathway

T F (D) Cell based pathway

Section B: Answer <u>all</u> questions: (Each question carries 5 marks)

1. Blood flow is slowest in the capillaries. Explain why this is important

2. Comment on the picture below



3. List five distinguishing features/characteristics of an eosinophil

4. Match the following pairs (5marks)

I Philadelphia chromosome	A Haem
II ADH	B manual platelet count
III Ammonium oxalate	C 1% HCL
IV porphyrin	D Chronic Myeloid leukaemia
V WBC manual count	E Vasoconstriction

I----------II----------III----------IV----------V----------

Section C (Answer three questions, each question carries 20 marks)

1. (a) Discuss Circulatory shock (10). (b) What are the major functions of blood (10)
2. With the aid of a diagram discuss the role played by the 'Renin-Angiotensin-Aldosterone-mechanism/ system', (RAAS) in the regulation of blood volume & pressure.

3. Give a detailed discussion on G6PD deficiency
4. Illustrate with aid of a flow diagram, the algorithm to evaluate causes of anemia basing on reticulocyte count and MCV.

5. Discuss on anaemia of chronic disease