AFRICA UNIVERSITY
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COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

SLS 202 HAEMATOLOGY I THEORY FINAL

END OF SECOND SEMESTER EXAMINATIONS

APRIL/MAY 2019

LECTURER: P NAGO

DURATION: 3 HOURS

INSTRUCTIONS

Do not write your name on the answer sheet

Use Answer Sheets Provided

Begin your answer for Each Question on a New Page

Credit is Given for Neat Presentation

Section A: (40 Marks)

1. The following are examples of quality indicators that need to be monitored in a clinical laboratory:

T F (A) Turnaround time of results

T F (B) Patient satisfactory survey

T F (C) Computer errors

T F (D) Equipment downtime

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. Blood resistance(R) is **defined as** opposition to flow of blood &factors affecting resistance are:

T F (A) Viscosity

T F (B) length of the blood vessel

T F (C) diameter of a blood vessel

T F (D) The degree of vascular stenosis

4. Blood is:

T F (A) 5.6L in an average 70kg man

T F (B) 8% of total body weight

T F (C) 8.0 L in an average 70kg man

T F (D) 5.6% of total body weight

5. The following are bone marrow needles :

T F (A) Jamshidi

T F (B) Westerman –Jensen

T F (C) Snare coil

T F (D) Mac Millan

6. The following are methods/techniques examples to measure haemoglobin:

T F (A) Sahli

T F (B) Cyanmethaemoglobin method

T F (C) Hemocue

T F (D) ESR

7. The better source of active bone marrow from a 20 year old would be:

T F (A) Iliac crest (hip)

T F (B) Femur (thigh)

T F (C) Distal radius (forearm)

T F (D) Tibia (shin)

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 iron, four globin chains

9. Which of the following is the most mature normoblast?

T F (A) Orthochromatic normoblast

T F (B) Basophilic normoblast

T F (C) Pronormoblast

T F (D) Polychromatic normoblast

10. G6PD deficiency is associated with:

T F (A) Formation of methaemoglobin

T F (B) Non-reduction of NADP

T F (C) Heinz Bodies

T F (D) reduction of NADP

11. The cell (in the center) pointed below is:

T F (A) Reed Sternberg cell

T F (B) Monocyte

T F (C) Burkit

T F (D) Kuppfer

12. The following are clinical features of chronic myeloid leukemia:

T F (A) Anaemia

T F (B) Sweats

T F (C) Fever

T F (D) Bone pain

13. Characteristic features of aplastic anaemia:

T F (A) Reticulocytosis

T F (B) Bone marrow hypercellularity

T F (C) Pancytopenia

T F (D) Depletion of hematopoietic stem cells

14. _____acts as the primary compound for the body's iron storage needs

T F (A) Transferrin

T F (B) Apoferritin

T F (C) Ferritin

T F (D) Cobalamin

15.

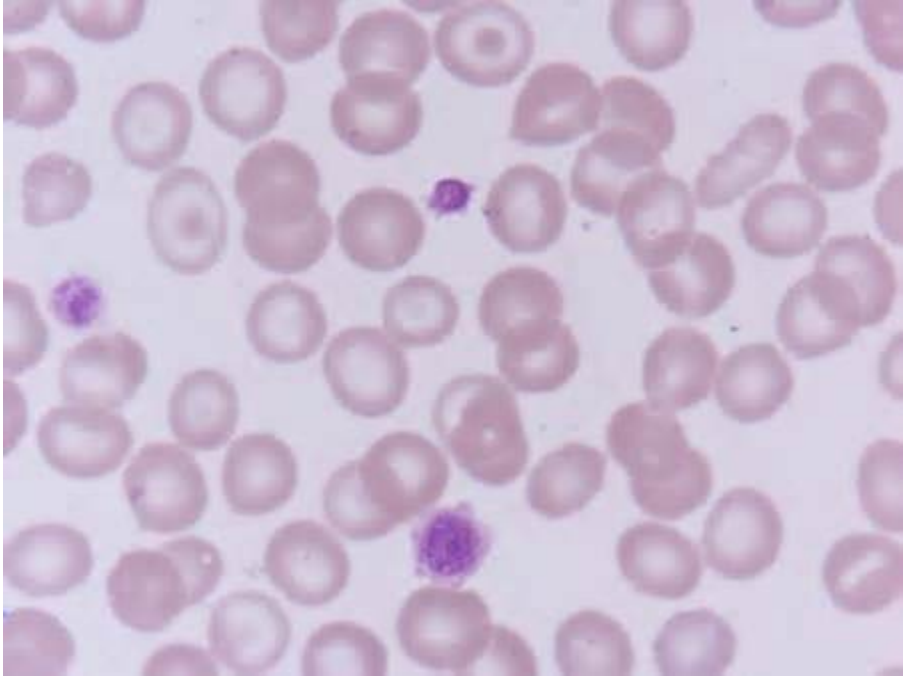
T F (A) Vitamin B_{12} absorption is an active process that occurs optimally in the jejunum

T F (B) Folate is absorbed optimally in the ileum

T F (C) Folate &Vitamin B_{12} are stored primarily in the liver

T F (D) Severe Folate deficiency is associated with megaloblastic anaemia

16. The pointed cells in the picture are:



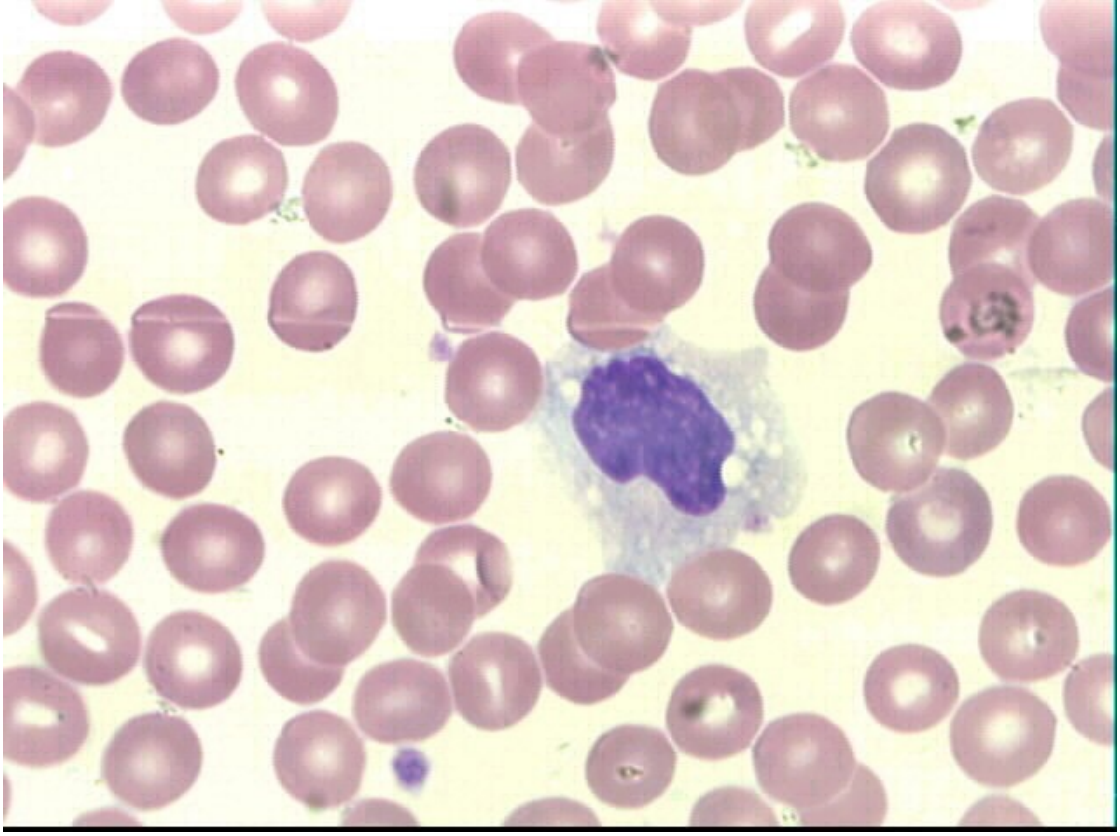
T F (A) lymphocytes

T F (B) Monocytes

T F (C) Artifacts

T F (D) Platelets

17. Name the white cell in the picture below:



T F (A) Lymphocyte

T F (B) Neutrophil

T F (C) Normoblast

T F (D) Monocyte

18.

T F (A) Monocytes and lymphocytes are known as polymorphonuclear leucocytes, sometimes as ‘agranulocytes’

T F (B) Monocytes are non-specific phagocytic cells equivalent of tissue macrophages

T F (C) Monocytes and lymphocytes are known as mononuclear leucocytes, sometimes as ‘agranulocytes

T F (D) Only (A) is true

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 following are other vital cations found in blood in lower concentrations:

T F (A) Na^{+}

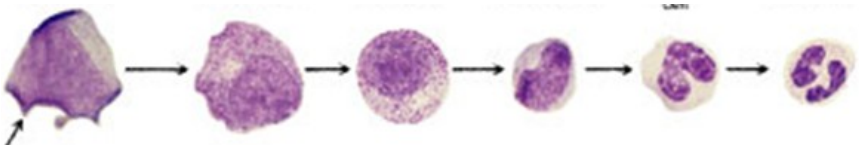
T F (B) K^{+}

T F (C) $Fe3^{+}$

T F (D) Ca^{2+}

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

1. Briefly discuss on pulse pressure
2. The cell pictures below are various maturation stages of a neutrophil. Clearly label each cell



3. What are :
   a. oncogenes
   b. tumour suppressor genes

4. Match the following pairs (5marks)

I	major basic protein (MBP)	A	CD8

II	MHC class II	B	Tear drop cell
III	Dacryocyte	C	New methylene blue
IV	MHC class I	D	CD4
V	Reticulocyte	E	Eosinophil

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

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

1. Discuss major: 'Clinical features of sickle cell disease.' also laboratory and treatment of the disease.

2. With the aid of a diagram discuss the role played by the Vasopressin (ADH) mechanism in the regulation of blood volume & pressure.

3. Discuss on the red cell membrane disorder: 'hereditary stomatocytosis.'
4. Give a detailed discussion on β thalassaemia major.

5. With aid of a diagram describe the coagulation pathway