**Course Code:BMD 225, Haematology and Techniques**

# SECTION A

1. The green top vacutainer is used to collect blood for:
    a) Haemogram
    b) Serum bilirubin
    c) Osmotic fragility test
    d) Coagulation screen
2. What is the formula used to calculate mean cell haemoglobin
    a) $\frac{Hb}{RBC} \times 10$
    b) $\frac{PCV}{RBC} \times 100$
    c) $\frac{RBC}{PCV} \times 10$
    d) $\frac{HB}{RBC} \times 100$
3. Prolonged staining time of PBF may lead to:
    a) Film being tooo pink
    b) Film being too blue
    c) Drying of stain on the slide
    d) Deposition of staining particles on the film
4. The central squares of the improved Neubauer chamber has
    a) 200 squares
    b) 25 squares
    c) 250 squares
    d) 4 squares
5. In Haematology the preferred specimen is:
    a) Coagulated blood
    b) Clotted blood
    c) Anticoagulated blood
    d) Serum
6. Normal relative values for neutrophils are:
    a) 40 – 75%
    b) 20 – 45%
    c) 1 – 6%
    d) 1 – 10%
7. The normal average haemoglobin content of a single red cells in an adult is:
    a) 76 - 98$\mu m^3$
    b) 27 – 32 pg
    c) 32 – 36%
    d) 23 – 31 cubic meters
8. The following are features of haemolytic anaemia

a) Raised haptoglobin levels
b) Macro Ovalocytes
c) Polychromasia
d) Thrombocytopaenia

9. The following features are common on a pheripheral blood film of a patient suffering fro acute myeloid leukaemia:
   a) Myloblasts
   b) Lymphoblasts
   c) Dohle bodies
   d) Azurophilic granules
10. The following Haemoglobins move the fastest on Agar gel electrophoresis
    a) Hb A
    b) Hb S
    c) Hb C
    d) Hb F
11. The following RBCs conditions are indicative of spherocytosis
    a) Reduced MCOF
    b) High MCOF
    c) Normochromic microcytosis
    d) Increased resistant
12. Haemolytic anaemia due to extracorpascular defects may arise from
    a) Hereditary spherocytosis
    b) G-6-PD deficiency
    c) Auto-immune haemolytic anaemia
    d) Thalassaemia syndrome
13. The following tests may be performed in diagnosis of Megaloblastic anaemia due to defficiency of folic acid
    a) Schilling test
    b) Radio isotope assay
    c) Vit B serum assay
    d) FIGLU excretion test
14. In sickle cell disease in the beta chain the $6^{th}$ position which is occupied by glutamic acid is replaced by?
    a) Glycine amino acid
    b) Valine amino acid
    c) Lysine amino acid
    d) Glutamine amino acid
15. Reticulocytes are:
    a) Juvenile red blood cells
    b) Immature lymphocytes
    c) Maturing red blood cells
    d) Hypersegmented polymorphs
16. The following dye is used to demonstrate reticulocytes

a) Brilliant crysyl blue
b) Sudan black
c) Leishman stain
d) Carbol fuchsin

17. Luekaemis are characterised by:-
    a) increased hypersegmentation of neutrophils
    b) increased reticulocyte count
    c) increased sedimentation rate
    d) uncontrolled abnormal proliferation of leucocytic cells
18. winthrobe tubes are calibrated as:-
    a) 0.1 mm intervals to 1000 mm
    b) 1 mm intervals to 10 mm
    c) 1 mm intervals to 100 mm
    d) 10 mm intervals to 1000 mm
19. The following is a white cell inclusion body
    a) Dohle bodies
    b) Howell jolly bodies
    c) Basophilic stippling
    d) Cecil bodies
20. Coulter blood counters are used for
    a) Differentiating chronic and acute leukaemias
    b) Counting blood cells
    c) Staining blood cells
    d) Neutrophils count only

**SECTION B**

1. Classify Aplastic anaemia (8 marks)
2. Describe the laboratory diagnosis of iron deficiency anaemia (8 marks)
3. Normal haemostasis occurs to prevent free escape of blood from a damaged vessel. Explain the reactions involved (8 marks)
4. Describe the steps followed in venus blood collection (8 marks}
5. Describe in details the classification of leukaemia (8 marks)

**SECTION C**

1. Discuss in details the two main classification of anaemia ( 20 marks)

2. Discuss in details RBC inclusion bodies, mention condition in which they are found. Describe how they look like. ( 20 marks)