Candidate number……

"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES

NSLS 407 HAEMATOLOGY II THEORY

END OF SECOND SEMESTER EXAMINATIONS

NOVEMBER 2022

LECTURER: Mrs E. Govore

DURATION: 3 HOURS

INSTRUCTIONS

1. Write your candidate number on the space provided on top of each page
2. Answer **all** questions in sections A on the question paper.
3. Answer **all** questions in section B on separate answer sheets provided.
4. Answer any **3** questions in section C
5. Credit will be given for logical, systematic and neat presentations in sections B and C

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Sections A (40 marks)

Answer all questions by indicating T for TRUE or F for FALSE in front of each of the statements (a) to (e) in all the questions

1. The following are historical features of erythrocytosis
    a. T.F smoking
    b. T.F Low altitude
    c. T.F Acute lung disease
    d. T.F Chronic lung disease
    e. T.F Chronic renal disease

2. The following symptoms may occur in severe iron deficiency
    a. T.F pica
    b. T.F Ecchymosis
    c. T.F Glossitis
    d. T.F Petechiae
    e. T.F koilonychia

3. The following is true in Aplastic anemia
    a. T.F Inherited → Idiopathic
    b. T.F Activated Cytotoxic T cells in Blood & Bone marrow → Bone marrow failure
    c. T.F Fanconi's Anemia → Acquired
    d. T.F Patient presents with Reticulocytosis
    e. T.F Patient presents wit pancytopenia

4. Anemia of chronic disorders is due to
    a. T.F Chronic infections
    b. T.F Chronic inflammatory disorders
    c. T.F Neoplastic disorders
    d. T.F Bleeding
    e. T.F Hemolysis

5. If you have the following indices what type of anaemia is it
    MCV = 67fl
    MCH=20pg
    MCHC=30%
    a. T.F Normochromic normocytic
    b. T.F Normochromic Hypochromic
    c. T.F microcytic hypochromic

d. T.F microcytic normochromic
e. T.F Macrocytosis

6. The following is true about Chronic myeloid leukemia (CML)
    a. T.F is an inherited disorder
    b. T.F there is translocation between chromosome 9 and 22
    c. T.F Philadelphia chromosome is not common
    d. T.F basophilia is present
    e. T.F Eosinophilia is absent

7. The following conditions are Myelodysplastic syndromes (MDS)
    a. T. F Polycythemia Vera
    b. T. F Chronic myelomonocytic anemia
    c. T. F Refractory anemia with ringed sideroblasts (RARS)
    d. T. F Essential thrombocytosis
    e. T. F Mast cell disease
8. The following conditions are myeloproliferative disorders
    a. T. F Polycythemia Vera
    b. T. F Chronic myelomonocytic anemia
    c. T. F Refractory anemia with ringed sideroblasts (RARS)
    d. T. F Essential thrombocytosis
    e. T. F Mast cell disease

9. Factor VII deficiency patients present with the following laboratory results
    a. T.F Normal platelet count
    b. T.F Prolonged Prothrombin time
    c. T.F Prolonged APTT
    d. T.F Bleeding time maybe normal or prolonged
    e. T.F reduced FVIII

10. A patient with coagulation disorders in the common pathway can present with the following laboratory results
    a. T.F Normal platelet count
    b. T.F Prolonged Prothrombin time
    c. T.F Prolonged APTT
    d. T.F reduced FXII
    e. T.F reduced FVII

11. Match the following leukemias using the FAB classification for acute myeloid leukemia (AML)
    a. alpha thalassemia silent
    b. **alpha thalassemia trait**
    c. Thalassemia major
    d. hemoglobin Barts
    e. hemoglobin H
        i. Three α-globin genes
        ii. two α genes are normal

iii. Hydrops fetalis
iv. tetrameric γ chains
v. tetrameric β chains

a……. b……. c…….. d…… e…….

12. Hemoglobin is produced by genes that control the expression of the Hb protein. Defects in these genes can produce abnormal hemoglobins and the conditions are termed "hemoglobinopathies. The following conditions fall under hemoglobinopathies
    a. T.F megaloblastic anemia
    b. T.F iron deficiency anemia
    c. T.F sickle cell disease
    d. T.F chronic myeloid leakemia
    e. T.F Hb Constant Spring

13. The following statements are true concerning anemia of chronic disorders
    a. T.F Occurs in patients with Chronic infections
    b. T.F Occurs in patients Chronic inflammatory disorders
    c. T.F Occurs in patients Neoplastic disorders
    d. T.F Is due to Bleeding
    e. T.F Is due to Hemolysis

14. The following historic features may be seen in patients with erythrocytosis
    a. T.F smoking history
    b. T.F living at a high altitude
    c. T.F congenital heart disease
    d. T.F leakemia
    e. T.F Chronic lung disease

15. The following is true concerning leukomoid reaction
    a. T.F WBC count is low
    b. T.F Haemoglobin is high
    c. T.F Leucocyte alkaline score is high
    d. T.F Basophilia
    e. T.F eosinophilia

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16. The following are examples of paraprotenemias
    a. T.F Multiple myeloma
    b. T.F Primary amyloidosis
    c. T.F Waldenström's macroglobulinemia
    d. T.F Heavy chain disease
    e. T.F MGUS (Monoclonal gammopathy of undetermined significance)

17. Patient with vascular disorders present with
    a. T.F Normal platelet count
    b. T.F prolonged Prothrombin time
    c. T.F prolonged APTT
    d. T.F Reduced Bleeding time
    e. T.F ecchymoses

18. Patient with haemophilia A present with
    a. T.F Normal platelet count
    b. T.F prolonged Prothrombin time
    c. T.F prolonged APTT
    d. T.F Normal Factor VIII assay
    e. T.F Normal Factor IX assay

19. Patient with haemophilia B present with
    a. T.F Normal platelet count
    b. T.F prolonged Prothrombin time
    c. T.F prolonged APTT
    d. T.F Normal Factor VIII assay
    e. T.F Normal Factor IX assay

20. The following are Quantitative platelet disorders
    a. T.F Glanzmann thrombasthenia
    b. T.F Bernard-Soulier syndrome
    c. T.F Hermansky-Pudlak
    d. T.F Chediak-Higashi
    e. T.F Wiskott-Aldrich syndrome

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Section B

Answer all questions in this section.

Each question carries 10 marks.

1. Discuss the Stages of iron deficiency (10)
2. Discuss the Pathophysiology of Sickle Cell Anemia (10)

Section C

Answer any three questions .
Each question carries 20 marks.

1. Porphyria are a group of inherited or acquired disorders of heme production. With the aid of a diagram briefly explain the different porphyrias (20)

2. With the aid of diagram briefly explain how you would stage Hodgkin's lymphoma (20)

3. Briefly describe the schilling tests (20)

4. With the aid of a diagram briefly discuss intravascular and extravascular haemolysis (20)

5. Discuss the CLL clinical staging using the Rai staging system and the Binet staging system (20)