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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

POSTGRADUATE DIPLOMA IN CLINICAL HAEMATOLOGY
EXAMINATION – JUNE 2019

Date: 17th June 2019 **Time:** 1.00 p.m. - 4.00 p.m.

Answer **four (04)** questions only.
Answer each question **in a separate book.**
All questions carry equal marks.

PAPER I – ESSAY

1. Discuss the molecular basis, clinical presentations with complications, laboratory diagnosis and principles of treatment of hereditary spherocytosis. (100 marks)

2. A 60-year-old man presents with Hb 9.7g/dL, WBC count 3.9 x 10^9/L, Platelet count 61 x 10^9/L and occasional circulating blasts.

   2.1. Provide a list of differential diagnoses. (30 marks)

   2.2. Outline the clinical and laboratory approach to determine the diagnosis in this patient. State how you would assess the prognosis of **two** conditions mentioned in 2.1. (70 marks)

3.

   3.1. A 34-year-old man is detected to have a Hb of 17.2 g/dL and HCT 52% during routine investigations. List the possible causes for this finding and discuss how you would investigate him to arrive at a diagnosis. (60 marks)

   3.2. Discuss the pathogenesis and principles of treatment of polycythemia vera. (40 marks)

Contd…../2-

4. Write short notes on

   4.1. principle of fluorescence in situ hybridization (FISH) technique and its applications in haematology. (35 marks)

   4.2. non -immunological complications of blood transfusion and the preventive measures. (30 marks)

   4.3. clinical presentations, staging and prognosis of systemic AL amyloidosis. (35 marks)

5. An 18-year-old girl presents with intermittent epistaxis and menorrhagia since menarche. Initial coagulation workup revealed isolated prolongation of APTT.

   5.1. Discuss how you would investigate her to arrive at a diagnosis. (60 marks)

   5.2. Outline the pitfalls you would encounter during this diagnostic workup. (40 marks)

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POSTGRADUATE DIPLOMA IN CLINICAL HAEMATOLOGY
EXAMINATION – JUNE 2019

Date: 18th June 2019 **Time:** 9.00 a.m. - 1200 noon

Answer **six (06)** questions only.
Answer each question **in a separate book.**
All questions carry equal marks.

PAPER II
STRUCTURED ESSAY QUESTIONS (SEQ)

1. A 9-month-old baby presented with a middle ear infection. He has a past history of bronchopneumonia at one month of age and recurrent skin sepsis.
   FBC - Hb 12.5 g/dL, WBC $6.3x10^9$/L, absolute neutrophil count $0.1x10^9$/ L, platelet count 365 $x10^9$/L.

   1.1. List the possible causes for this presentation. (30 marks)

   1.2. How would you investigate this child to arrive at a diagnosis? (35 marks)

   1.3. Briefly describe the acute and long term management of neutropenia in this child. (35 marks)

2. Leucocyte depletion of blood components is a universally accepted concept in transfusion practice.

   2.1. What is the definition of leucodepleted blood / blood components? (20 marks)

   2.2. Briefly describe the adverse effects of leucocytes in blood / blood components. (40 marks)

   2.3. Briefly describe the methods available for leucodepletion of blood/blood components and outline their advantages and disadvantages. (40 marks)

Contd...../2-

3.

3.1. Briefly discuss how you would monitor the response to tyrosine kinase inhibitor (TKI) therapy in a newly diagnosed patient with chronic myeloid leukaemia in chronic phase. (35 marks)

3.2. Briefly describe the possible mechanisms responsible for TKI failure. (35 marks)

3.3. Explain how you would diagnose accelerated phase of chronic myeloid leukaemia. (30 marks)

4. A 9-year-old boy with prolonged fever was referred to the haematologist due to development of pancytopenia. Haemophagocytic lymphohistiocytosis (HLH) was suspected.

4.1. Briefly outline the pathogenesis of pancytopenia in HLH. (30 marks)

4.2. Outline how you would confirm the diagnosis. (40 marks)

4.3. State the principles of management of this patient. (30 marks)

5.

5.1. Outline the fibrinolytic pathway and formation of D - dimers. (40 marks)

5.2. Briefly outline the uses of D - dimer test in clinical practice. (30 marks)

5.3. Briefly give an account on laboratory and clinical limitations of D - dimer test. (30 marks)

6. Quality management of a haematology laboratory includes assuring the quality of test results as well as safety.

6.1. Outline the safety requirements of a haematology laboratory. (30 marks)

6.2. Outline the procedure of **performance verification** of an automated full blood count (FBC) analyzer upon installation. (40 marks)

6.3. Discuss briefly the **traceability** in automated FBC testing. (30 marks)

Contd...../3-

7.

7.1. Define functional iron deficiency, giving examples. (30 marks)

7.2. Briefly describe the laboratory diagnosis of functional iron deficiency, stating the significance of each test. (40 marks)

7.3. Outline the management of functional iron deficiency. (30 marks)