

POSTGRADUATE INSTITUTE OF MEDICINE  
UNIVERSITY OF COLOMBO

POSTGRADUATE DIPLOMA IN CLINICAL HAEMATOLOGY  
EXAMINATION – NOVEMBER/DECEMBER 2012

Date :- 15<sup>th</sup> November 2012

Time :- 1.00 p.m. – 4.00 p.m.

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

PAPER I - ESSAY

1.
  - 1.1. Discuss the mechanisms of iron absorption in the human. (30 marks)
  - 1.2. List the laboratory tests used in the investigation of suspected iron deficiency. Discuss the strengths and weaknesses of each of the tests you mentioned. (70 marks)
  
2. A 70-year-old woman was prescribed 4 units of fresh frozen plasma (FFP). The first three (3) units were transfused without any incident over 4 hours. Thirty minutes after starting the 4<sup>th</sup> unit of FFP she became acutely short of breath and hypotensive.
  - 2.1. Give the two (02) most likely diagnoses. (10 marks)
  - 2.2. Briefly describe the pathogenesis of the two conditions you mentioned in 2.1 and list the investigations you would do to differentiate them. (50 marks)
  - 2.3. Briefly describe the strategies to manage and prevent above conditions. (40 marks)

Contd.../2-

3. A 56-year-old female is referred to you with an absolute lymphocyte count of  $27 \times 10^9/L$ . Blood picture confirms a lymphocytosis with 'smudge cells'. A provisional diagnosis of chronic lymphocytic leukaemia (CLL) is made.
  - 3.1. Discuss how you would do a clinical and laboratory evaluation in this patient. (50 marks)
  - 3.2. Describe the prognostic factors of CLL. (30 marks)
  - 3.3. What are the indications for initiating treatment in CLL. (20 marks)
  
4. Discuss the haematological manifestations of systemic lupus erythematosus in adults. (100 marks)
  
5. Write short notes on
  - 5.1. diagnosis of Heparin Induced Thrombocytopenia (HIT). (40 marks)
  - 5.2. laboratory diagnosis of Glucose -6-phosphate dehydrogenase (G6PD) deficiency. (30 marks)
  - 5.3. myelodysplasia associated with isolated del (5q). (30 marks)

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**EXAMINATION – NOVEMBER/DECEMBER 2012**

**Date :-** 16<sup>th</sup> November 2012

**Time :-** 9.00 a.m. – 12.00 noon.

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

**PAPER II**  
**STRUCTURED ESSAY QUESTIONS (SEQ)**

1.
  - 1.1. What haemostatic mechanisms are tested in bleeding time ?  
(40 marks)
  - 1.2. What factors influence the bleeding time performed by Ivy's method?  
(30 marks)
  - 1.3. List the conditions/diseases that have a bleeding time, disproportionate to the platelet count.  
(30 marks)
2. A 62-year-old man is referred for investigation of a high platelet count. His FBC is as follows.

Hb	15.1 g/dL
WBC	9.8 x 10 <sup>9</sup> /L (N - 7.4 x 10 <sup>9</sup> /L, L - 1.6 x 10 <sup>9</sup> /L, M - 0.4 x 10 <sup>9</sup> /L, E - 0.2 x 10 <sup>9</sup> /L B - 0.2 x 10 <sup>9</sup> /L)
Platelet	936 x 10 <sup>9</sup> /L

- 2.1. Describe the important points in the history and examination which will help in differentiating a myeloproliferative neoplasm from a reactive thrombocytosis.  
(30 marks)

Contd.../2-

- 2.2. List the laboratory investigations and expected results which will help to differentiate the above two diagnoses. (40 marks)
- 2.3. If a diagnosis of essential thrombocythaemia is confirmed, what are the clinical and laboratory features which will suggest the need for cytoreductive therapy?  
If cytoreductive treatment is required what would you recommend? (30 marks)
3. A 4-year-old child, a product of a consanguineous marriage, presents with painful swelling of digits of his hand. He gives a history of several episodes of yellow discolouration of his eyes. He is suspected to have dactylitis due to sickle cell disease. He has not had any blood transfusions.
- 3.1. Briefly describe the pathophysiology of dactylitis in sickle cell disease. (40 marks)
- 3.2. What investigations would you do to confirm a diagnosis of sickle cell disease? (10 marks)
- 3.3. Two months later the child is admitted with Hb of 4 g/dL. Outline the underlying pathophysiological process/processes that contribute to his severe anaemia. (30 marks)
- 3.4. Outline the transfusion management of the episode stated in 3.3. (20 marks)
4. A 32-year-old male is admitted for investigation of pancytopenia.
- 4.1. Describe the important points in the history and examination that will help to identify the cause of pancytopenia. (25 marks)
- 4.2. Discuss the investigations that could differentiate between aplastic anaemia and paroxysmal nocturnal haemoglobinuria (PNH). (25 marks)
- 4.3. Briefly describe the pathogenesis of PNH. (30 marks)
- 4.4. Outline the management of a patient with PNH. (20 marks)

5. A 35-year-old pregnant woman presents in her 30<sup>th</sup> week of gestation with a platelet count of  $60 \times 10^9/L$

5.1. List the possible causes. (25 marks)

5.2. What investigations will you do to arrive at a diagnosis? (30 marks)

She was detected to have a platelet count of  $30 \times 10^9/L$  during the 33<sup>rd</sup> week of gestation. The diagnosis of Immune Thrombocytopenia (ITP) was made.

5.3. How would you manage her during the pregnancy? (20 marks)

5.4. How would you manage the delivery and post partum period with respect to the mother and baby? (25 marks)

6.

6.1. Briefly outline the different aspects that should be fulfilled for a quality assurance programme in your haematology laboratory. (35 marks)

6.2. Discuss different methods you can adopt to ensure quality control for your automated haematology analyzer. (35 marks)

6.3. If you have complaints regarding Hb values from the physicians of your hospital, how would you assure that your haematology analyzer results are correct? (30 marks)

7. Day 1 old baby delivered by LSCS is referred to you with a Hb 8.5 g/dL. On examination the baby is not icteric and has no hepato splenomegaly.
- 7.1. What are the possible causes for anaemia in this baby? (30 marks)
- 7.2. What clinical information would you require to help in the diagnosis? (25 marks)
- 7.3. List the investigations you would do in this baby to arrive at a diagnosis. Give reasons. (25 marks)
- 7.4. Outline the specifications for a top up red cell transfusion in a neonate. (20 marks)