

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

POSTGRADUATE DIPLOMA IN CLINICAL HAEMATOLOGY
EXAMINATION – NOVEMBER 2013

Date : 11th November 2013

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. Describe the genetic basis, molecular pathology and management plan of beta thalassaemia major. (100 marks)
2. Discuss the pathophysiology, diagnosis and management of thrombotic thrombocytopenic purpura (TTP). (100 marks)
3. Write short notes on
 - 3.1 molecular genetics of acute promyelocytic leukaemia. (35 marks)
 - 3.2 fluorescent in situ hybridization (FISH) and its clinical applications in malignant haematological disorders. (30 marks)
 - 3.3 acquired haemophagocytic lymphohistiocytosis. (35 marks)
4. “The myelodysplastic syndromes are a heterogenous group of clonal disorders”. Discuss this statement in relation to aetiology, current classification, pathogenesis, molecular basis and prognosis. (100 marks)
5. Give an account of haematological manifestations in human immune deficiency virus (HIV) infection. (100 marks)

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POSTGRADUATE DIPLOMA IN CLINICAL HAEMATOLOGY
EXAMINATION – NOVEMBER 2013

Date : 12th November 2013

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. A 30-year-old patient diagnosed with Hodgkin lymphoma presented with jaundice, macular erythematous rash, fever and diarrhoea. She received red cell and platelet transfusions two weeks ago.
 - 1.1. What is the most likely diagnosis? (10 marks)
 - 1.2. Describe the pathogenesis of this condition. (30 marks)
 - 1.3. How would you confirm the diagnosis you mentioned in 1.1.? (30 marks)
 - 1.4. Briefly discuss the methods of preventing this condition. (30 marks)

2. A 10-year-old boy presented with symptoms of anaemia. He was not icteric. There was no lymphadenopathy or hepatosplenomegaly. Investigations revealed :

Hb	3.0 g/dL	
WBC	$1.3 \times 10^9/L$	N - 10%
Platelet count	$10 \times 10^9/L$	
Absolute reticulocyte count	$10 \times 10^9/L$	

 - 2.1. How would you investigate this patient to arrive at a diagnosis? (30 marks)
 - 2.2. An allogeneic stem cell transplantation was recommended for this patient. What laboratory investigations would you do in preparation for stem cell transplantation (SCT)? (30 marks)
 - 2.3. List different sources of haemopoietic stem cells. (10 marks)
 - 2.4. Discuss advantages and disadvantages of each source mentioned in 2.3. (30 marks)

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Contd...../2-

- 3.
- 3.1. State briefly, applications of point of care testing (POCT) in clinical haematology. (10 marks)
 - 3.2. Describe how you would verify performance of a POCT device in your hospital upon installation. (20 marks)
 - 3.3. State briefly how you would assure quality of results generated in a POCT device in routine practice. (20 marks)
 - 3.4. State how you would utilize patients' samples in assuring quality in the haematology laboratory. (25 marks)
 - 3.5. How would you utilize "audit" to improve quality in the haematology laboratory? (25 marks)
4. A 33-year-old woman presented with abdominal pain. Ultrasound scan revealed portal vein thrombosis.
- 4.1. What clinical information would you require from this patient to aid your further management? (20 marks)
 - 4.2. Outline the investigations and management during the acute episode. (20 marks)
 - 4.3. Discuss the long term follow up of this patient in the haematology clinic. (30 marks)
 - 4.4. After 4 months of follow up, this patient was admitted to the casualty with gross haematuria. Briefly discuss the investigations and management of this bleeding episode. (30 marks)

Contd...../3-

5.
 - 5.1. List three (03) acquired haemolytic anaemias in which complement system plays a role in pathogenesis. (15 marks)
 - 5.2. Discuss the mechanisms of haemolysis in each of the conditions you mentioned in 5.1. (30 marks)
 - 5.3. An 8-year-old girl with a recent acute viral infection presented with passage of dark brown coloured urine. Haemoglobin was 4.5 g/dL. Spectroscopic examination of urine indicated the presence of haemoglobin. Discuss the laboratory investigations of this patient. (30 marks)
 - 5.4. How would you select blood for transfusion for this patient and what precautions would you take during the transfusion. (25 marks)

6.
 - 6.1. Define the term "exchange transfusion". (10 marks)
 - 6.2. What are the indications for red cell exchange transfusion? How does exchange transfusion help the patient in each clinical situation? (35 marks)
 - 6.3. List the possible complications of red cell exchange transfusion. (20 marks)
 - 6.4. Discuss the indications for therapeutic plasmapheresis. (35 marks)

7. A 54-year-old, previously well female with a normal body mass index (BMI) was investigated for recent onset diabetes mellitus. She was found to have a serum ferritin of 2100 ng/mL and transferrin saturation of 59%.
 - 7.1. What are the possible causes for the elevated serum ferritin level? (20 marks)
 - 7.2. What further investigations would you do in the management of this patient? (30 marks)
 - 7.3. Critically evaluate the methods available for estimation of body iron. (30 marks)
 - 7.4. Outline the principles of management in this patient. (20 marks)