

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

SELECTION EXAMINATION FOR ENROLMENT TO THE IN-SERVICE
TRAINING PROGRAMME IN POSTGRADUATE DIPLOMA IN
TRANSFUSION MEDICINE – OCTOBER 2016

Date :- 17th October 2016

Time :- 1.00 p.m. – 4.00 p.m.

Answer six questions only.

Answer each question in a separate book.

1. A 32 year old male was involved in a road traffic accident. He is brought to the Accident and Emergency Department where on initial assessment he is found to have a systolic blood pressure of 80 mmHg, a tender abdomen and is suspected to have a fractured pelvis.
 - 1.1. State your approach to immediate management of this patient. (40 marks)
 - 1.2. Outline your approach to the use of blood components in this patient. (40 marks)
 - 1.3. What other pharmacological agents could be considered to reduce bleeding in this clinical situation? (20 marks)

2. A 42 year old male admitted to a surgical unit. On admission he was found to have bleeding from esophageal varicies and received 1000 ml of ringer lactate solution. Four units of red cell concentrates were ordered urgently.

Blood group - AB positive. After transfusing 3 units of red cell concentrates, another 6 units were requested for surgery as it appears he will need large volume of blood. Your blood bank inventory contains following units.

	O	A	B	AB
RhD positive	20	23	8	1
RhD negative	6	4	2	1

- 2.1. How do you fulfill this request? Explain your answer. (30 marks)
- 2.2. If this patient needs plasma, what type of plasma products should you give? (10 marks)
- 2.3. Explain the policy adopted for releasing blood in an emergency situation. (60 marks)
3. Write the suitable blood component/s with specifications for the following patients
- 3.1. Blood was requested for exchange transfusion for a one day old baby with severe jaundice. (20 marks)
- 3.2. A 12 year old girl with Thalassaemia major, admitted to the ward for blood transfusion with a haemoglobin of 7 g/dL. (10 marks)
- 3.3. A 14 year old girl admitted to the Emergency Treatment Unit (ETU) with severe menorrhagia. On admission she was pale and complained of shortness of breath. Her haemoglobin was 5.8 g/dL. She was a diagnosed case of von Willebrand disease. (20 marks)
- 3.4. A 9 year old boy with nephritic syndrome admitted to the paediatric ward with severe oedema. (10 marks)
- 3.5. Aplastic anaemia patient with a platelet count of $4 \times 10^9/L$ awaiting Anti Thymocyte Globulin (ATG) treatment. His haemoglobin is 8 g/dL and WBC is $1.8 \times 10^9/L$. (10 marks)
- 3.6. A 52 year old male patient admitted with acute abdomen due to intestinal obstruction. He has been on warfarin for last 3 years. Surgeon advised to prepare him for urgent laporatomy. His Hb - 12.8 g/dL, platelet count $160 \times 10^9/L$, INR 5. (10 marks)

- 3.7. A 65 year old lady who is awaiting total abdominal hysterectomy and bilateral salphingo oopharectomy (TAH and BSO) due to uterine malignancy. Her haemoglobin 7 g/dL. Blood was requested for pre operative haemoglobin optimization. She had a history of severe transfusion reaction following red cell transfusion 1 year back (urticaria, shortness of breath, wheezing and hypotension) and managed in the Intensive Care Unit (ICU). (10 marks)
- 3.8. A child with haemophilia B admitted to the ward with swelling of right knee joint. His body weight is 26 kg. (10 marks)

4.

- 4.1. Define “the unsuitable donor” for blood donation. (30 marks)
- 4.2. What are the techniques for identifying and excluding unsuitable blood donors? (70 marks)

5. Testing results of a blood unit donated by a 28 year old female is as follows:

Anti A	Anti AB	Anti B	Anti D	A cells	B cells	O cells
0	0	0	0	4+	4+	4+
HIV I & II	} Non reactive					
HBV						
HCV						
VDRL						
malaria						

- 5.1. Comment on the above findings. (20 marks)
- 5.2. What further investigations are needed to come to a conclusion? (30 marks)
- 5.3. How do you manage this donation? (25 marks)
- 5.4. What advice you would give to this blood donor? (25 marks)

6. Two units of red cells were issued to a 79 year old man with myelodysplastic syndrome. Transfusion of the first unit was uneventful. Forty minutes into the transfusion of the second unit, the patient developed rigors, breathlessness and confusion. Blood pressure decreased from 120/79 to 60/30 mmHg, while pulse rate increased from 80 to 112/minute. Transfusion was stopped and oxygen 5L/minute was administered by mask. Body temperature was 38.4⁰C, having been 37.0⁰C at the start of transfusion. Methyl prednisolone 250 mg and Chlopheniramine 10 mg were given intravenously.

Patient's identity was checked and also the blood bag, compatibility label and the compatibility report with the BHT. The check indicated that issued blood was intended for the correct patient, and that there was no ABO group mismatch or unexpected antibodies.

6.1. What are the possible causes for this reaction? (25 marks)

6.2. What action should be urgently taken? (50 marks)

6.3. What diagnostic tests should be carried out? (25 marks)

7.

7.1. What are the factors essential in the pathogenesis of haemolytic disease of the new born (HDN)? (25 marks)

7.2. Mention the objectives of red cell antibody testing in pregnancy. (60 marks)

7.3. Name three (03) antibodies which may be associated with severe HDN. (15 marks)

8. Write short notes on :

8.1. Screening of donated blood for malaria. (40 marks)

8.2. Cellular therapy in clinical practice. (30 marks)

8.3. Frozen red cells. (30 marks)