

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (TRANSFUSION MEDICINE) EXAMINATION (NEW FORMAT) –
MAY/JUNE 2017

Date :- 29th May 2017

Time :- 1.00 p.m. – 4.00 p.m.

PAPER I

Answer any five (05) questions.

Answer each question in a separate book.

1.

1.1. Describe the molecular basis of the D blood group antigen. (60 marks)

1.2. Describe the characteristic of a suitable antibody for D typing.

Comment on any differences between reagents used for donor and recipient typing. (40 marks)

2.

2.1. Describe three (03) pathogen inactivation technologies available for blood and blood procedures. (50 marks)

2.2. You have been asked to evaluate a proposal to introduce a pathogen inactivation technology in Sri Lanka.

Describe the factors would you consider in your evaluation. (50 marks)

3. A 45 year old patient presented with fever for six days, confusion of 2 days duration and bleeding from gum and transferred to ICU.

Hb	10g/dl
WBC	$15 \times 10^9/L$
Platelet count	$45 \times 10^9/L$

You are the Consultant in charge of the Local hospital blood bank and you receive a call from the MO ICU regarding this patient. She is asking you to arrange a therapeutic plasma exchange since she has noticed that blood picture report has mentioned a few red cell fragments.

- 3.1. What is your response and approach to this request from MO ICU regarding this patient? (20 marks)

After the relevant investigations Thrombotic thrombocytopenia (TTP) is suspected.

- 3.2. Describe the pathophysiology of TTP. (40 marks)
- 3.3. List the relevant investigations you would do to confirm the diagnosis and to find the aetiology. (20 marks)
- 3.4. Describe the immediate management of this patient as the consultant transfusion physician. (20 marks)

4. A 45 year old man with chronic renal failure on dialysis was found to have a positive result on routine hepatitis C (HCV) antibody screening on 25th May 2017. His last routine HCV antibody screening was negative on 30th May 2016. He had received many transfusion. The consultant nephrologist need the patient's transfusion to be investigated as a possible source of HCV infection.

- 4.1. List the possible causes of the patient's HCV infection. (20 marks)
- 4.2. If on probing, other sources of HCV infections are unlikely describe the investigations you would do to exclude transfusion as the source of the infection giving explanation. (40 marks)
- 4.3. Describe the characteristics of Hepatitis C infection that influence its transfusion transmissibility? (40 marks)

5.

- 5.1. List five (05) factors determine/influence the 'Blood Safety' of a country. (20 marks)
- 5.2. Transfusion always carries potential risks for the patients, these can be minimized by appropriate use of blood and blood products. Describe five (05) key elements of a national strategy to improve appropriate use of blood. (50 marks)
- 5.3. Write ten (10) questions which should be considered when a clinician deciding whether to prescribe a blood transfusion. (30 marks)

6.

- 6.1. Explain the importance of blood cold chain management. (50 marks)
- 6.2. Describe the strategies you should take to ensure proper blood cold chain management in your blood service. (50 marks)

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Date :- 30th May 2017

Time :- 9.00 a.m. – 12.00 noon

PAPER II

Answer any five (05) questions.

Answer each question in a separate book.

1. Hypocalcaemia is a complication of therapeutic plasma exchange. (TPE)
 - 1.1. What are the symptoms and signs of hypocalcaemia? (20 marks)
 - 1.2. Write two (02) indications with reasons where prophylactic calcium should be given in TPE. (20 marks)
 - 1.3. Describe how would you manage hypocalcaemia during TPE. (30 marks)
 - 1.4. Write five (05) category I and II indications for TPE in repeat renal disease. (30 marks)

2.
 - 2.1. Describe five (05) donor arm complications associated with whole blood donation. (40 marks)
 - 2.2. A first-time donor who donated blood at a mobile blood donation campaign yesterday calls to say that she has a painful swelling at the phlebotomy site.
Describe how would you manage the situation. (30 marks)
 - 2.3. A repeat donor who donated blood at blood bank 2 days ago calls to say that she got fever after blood donation.
Describe how would you manage the situation. (30 marks)

- 3.
- 3.1. Give your opinion with reasons regarding the management of each pregnancy of 35 year old mother who had multiple pregnancies with four living children. Her blood group is O negative while her husband is O positive.
- (a) P₁ in 2009 complete abortion in 11 weeks POA. Rh Ig is not given. (10 marks)
- (b) P₂ in 2010 antenatal antibody screening negative pregnancy uneventful full term normal vaginal delivery. Baby was RhD negative. Rh Ig not given. (10 marks)
- (c) P₃ in 2012 antenatal antibody screening negative pregnancy uneventful full term normal vaginal delivery. Baby's RhD positive DAT negative Rh Ig given before discharge on following day. Same day night she developed periorbital oedema and shortness of breath. Medical officer at a local medical centre managed her told its an allergic reaction Rh Ig. (10 marks)
- (d) P₄ in 2014 antenatal antibody screening negative pregnancy uneventful full term normal vaginal delivery. Baby's RhD positive. DAT negative. As mother mentioned her past experience Rh Ig was not administered. Mother discharged on following day. (10 marks)
- (e) P₅ in 2016 Mother attended local antenatal clinic antibody screening done at local blood centre revealed her antibody screening is positive and mentioned that it should be identified. She was referred to a tertiary care hospital. No further test is done/mother did not attended clinic. At the day of delivery VOG questioned whether it is OK not giving Rh Ig as mother has history of allergy and they are planning to do LRT. Baby delivered cord blood group is O positive. DAT strongly positive and two consecutive red cell exchange underwent before discharged. (20 marks)
- 3.2. Describe the measures you could implement to improve the care of RhD negative women in Sri Lanka. (40 marks)

4. Describe four (04) measures which can be used to prevent graft rejection due to ABO incompatibility in ABO-incompatible kidney transplantation. Compare the advantages and disadvantages of each method. (100 marks)

5.
 - 5.1. Compare the advantages and disadvantages of sibling, match unrelated and cord blood donor as potential sources of allogenic haematopoietic stem cells. (75 marks)
 - 5.2. List three (03) treatments that can be use to mobilize haematopoietic stem cells. (15 marks)
 - 5.3. List four (04) complications of haematopoietic stem cells transplant. (10 marks)

6.
 - 6.1. Identify the antigen systems present on human platelets. (20 marks)
 - 6.2. Identify four (04) clinical conditions which involve these platelet antigen systems. (20 marks)
 - 6.3. Describe the pathophysiology of one of the clinical problems you have mentioned. (30 marks)
 - 6.4. Briefly describe the principles and steps involved in the MAIPA assay. (30 marks)