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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (TRANSFUSION MEDICINE) EXAMINATION – JULY 2021

Date :- 19th July 2021 **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. Briefly describe the structure of the red cell membrane and it's relation to blood group antigens. (40 marks)

1.2. Give a brief account on the biosynthesis of ABH antigens. (60 marks)

2. You are requested to conduct an awareness lecture on apheresis platelet donation for a group of whole blood donors.

2.1. Briefly describe the facts that you will explain in this lecture. (50 marks)

2.2. Outline the pathophysiology, contributory factors, and the management of citrate toxicity in apheresis donors. (50 marks)

3. You are requested to establish a component processing laboratory in your blood bank.

3.1. What factors would you consider to justify the request? (20 marks)

3.2. How would you design the laboratory? (40 marks)

3.3. List the basic equipment required. (20 marks)

3.4. State briefly the procurement procedure of these equipment. (20 marks)

Contd…/2-

4.

4.1. List the factors considered when deciding whether a screening test has to be implemented in the blood service for a new disease in the community. (20 marks)

4.2. What are the factors to be considered in selecting the most appropriate assay. (50 marks)

4.3. Describe how you would perform the evaluation of the selected assay. (30 marks)

5.

5.1. How does COVID-19 pandemic impact the blood supply management? (30 marks)

5.2. Discribe the strategies that can be implemented to minimize the adverse effects on blood supply due to the pandemic. (35 marks)

5.3. Briefly discuss the impact on the blood bank staff and the measures to be taken to continue an uninterrupted service by the blood service in this pandemic situation. (35 marks)

6.

6.1. Briefly describe the pathophysiology of β thalassaemia major. (40 marks)

6.2. Describe the long-term management of β thalassaemia major. (60 marks)

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B

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (TRANSFUSION MEDICINE) EXAMINATION – JULY 2021

Date :- 20th July 2021 **Time:-** 9.00 a.m. – 12.00 noon

PAPER II

Answer any five (05) questions.
Answer each question in a separate book.

1. A 49-year-old multiparous woman is admitted to the intensive care unit with acute myocardial infarction. She had received the first dose of an adenovirus-based vaccine for COVID-19 six weeks ago.

   Her blood counts show:

Haemoglobin	81g/L
MCV	70 fl
Platelet count	230 x 10^9/L
WBC	9.8 x 10^9/L

   In preparation for percutaneous coronary intervention (PCI), she is given unfractionated heparin and one unit of red cells. A second unit is transfused after the intervention. She is discharged on Aspirin and clopidogrel. On day 7 after PCI the patient, presents to local hospital with rectal bleeding and a platelet count of 8 x 10^9/L.

   1.1. What is the most likely diagnosis? Give reasons. (40 marks)

   1.2. What are the tests that you would carry out to confirm the diagnosis? (20 marks)

   1.3. Patient continues to bleed. How would you manage? Explain your answer. (40 marks)

Contd…../2-

2. A 30-year-old O negative mother, P_2C_1, POA 32 weeks, was admitted with exertional dyspnoea. On examination her Hb was 8 g/dL and the Obstetrician decided to transfuse blood. During pre-transfusion investigation, antibody screening was positive and anti D was identified with a titer of 256.

   2.1. What further information would you ask in view of the management of this patient. (20 marks)

   2.2. Give specifications of the red cell products that can be used in the management of this pregnancy. (50 marks)

   2.3. State the significance of detecting Kell antibodies during antenatal screening. (30 marks)

3.

   3.1. List the antibody depletion techniques used in ABO incompatible kidney transplantation. (15 marks)

   3.2. What are the advantages and disadvantages of each technique used? (50 marks)

   3.3. What is the role of intravenous immunoglobulin therapy in ABO incompatible transplantation? (20 marks)

   3.4. What is the rationale of doing splenectomy and administration of anti CD20 monocolonal antibody (Rituximab) in the desensitization protocol for ABO incompatible kindey transplantation? (15 marks)

4. Briefly describe the following topics in relation to the management of patients diagnosed with multiple myeloma.

   4.1. Problems encountered in pre transfusion testing. (30 marks)

   4.2. Transfusion requirements. (20 marks)

   4.3. Therapeutic Plasma Exchange. (10 marks)

   4.4. Stem cell transplantation. (40 marks)

Contd...../3-

5. A diagnosed patient with Wilson's disease awaiting liver transplant had developed urticaria, dyspnoea, hypotension (blood pressure 70/40 mmHg) and had collapsed after 30 ml of platelet trnasfusion.

   5.1. State the type of transfusion reaction. (05 marks)

   5.2. What are the causes for the above condition? (10 marks)

   5.3. How do you manage this acute transfusion reaction? (40 marks)

   5.4. How would you diagnose the most likely cause of the above condition? (20 marks)

   5.5. What is your advice on future transfusions? (25 marks)

6. A 63-year-old man was admitted to a local hospital with chest pain. His Hb was 8.9g/dL and it was most likely due to iron deficiency and peptic ulcer disease. On investigation, he was found to have coronary artery disease. At the local hospital, he received 4 random units of RCC. He was then transferred to the nearest tertiary care hospital and had undergone a coronary artery bypass surgery during which he received another 3 units of random RCC. His surgery was uneventful and was discharged 4 days after the operation.

   He was admitted to the local hospital 14 days after the transfusion with fever of 38.9°C, nausea, vomiting, abdominal pain and diarrhoea. The physical examination revealed scleral icterus and a diffuse erythematous petechial rash on his trunk and extremities.

   6.1. What could be the possible diagnosis? (10 marks)

   6.2. State what investigations you would like to perform and give the expected findings. (40 marks)

   6.3. Briefly describe the pathophysiology of this condition. (30 marks)

   6.4. What measures would you like to take to minimize such conditions. (20 marks)