

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

POSTGRADUATE DIPLOMA IN TRANSFUSION MEDICINE
EXAMINATION – FEBRUARY 2026

Date:- 16th February 2026

Time:- 1.00 p.m. - 4.00 p.m.

PAPER I

Answer all eight (08) questions.

Answer each question in a separate book.

1. A 21-year-old woman is brought to the Emergency Treatment Unit (ETU) of your hospital with multiple injuries following a road traffic accident. ETU informs the blood bank to activate the massive transfusion protocol (MTP) for this patient.
 - 1.1. Enumerate possible triggers to activate the MTP in this patient. (20 marks)
 - 1.2. State the blood components you would issue initially to this patient giving reasons. (20 marks)
 - 1.3. ETU informs that there are 3 other casualties from the same accident that have been brought in and they may need transfusions as well.
Briefly explain the challenges you would encounter and measures you would take to overcome those challenges. (40 marks)
 - 1.4. List the causes of coagulopathy in trauma patients. (20 marks)

Contd..../2-

2. A 28-year-old woman in her second pregnancy is referred to you at 22 weeks of gestation, complaining of mild vaginal bleeding following a fall on same day.

She had received the recommended dose of Rh D Immunoglobulin (RhDIg) after the delivery of first baby. There is no history of any blood transfusions. The paternal Rh Phenotype is R_1R_1 .

Investigations with the current sample confirm her blood group is O Rh D negative and screening for unexpected antibodies is negative. RhDIg 500 IU was given IM.

Acid Elution test

Foetal cells	6/hpf
Maternal cells	2000/hpf
Estimated maternal red cell volume	2400 ml

- 2.1. Briefly explain the pathophysiology of Rh D haemolytic disease of foetus and newborn (HDFN) and comment on the risk of HDFN in this case. (40 marks)
- 2.2. Explain your advice to the obstetrician regarding RhDIg prophylaxis for this incident. (30 marks)
- 2.3. Outline the advice on her future clinic follow-up during this pregnancy. (30 marks)

3. A 47-year-old man is brought to the Emergency Treatment Unit (ETU) with pelvic fracture following a road traffic accident. He is immediately scheduled for the surgery. On call surgeon orders 2 units of packed red cell concentrate.

Medical officer of blood bank performed the blood grouping of the patient and found that there was a blood group discrepancy.

- 3.1. Define ABO blood group discrepancy. (10 marks)
- 3.2. List the initial steps to be taken if you detect an ABO blood group discrepancy. (10 marks)
- 3.3. State the blood group you would select if the transfusion of red cell concentrate is urgent. (10 marks)
- 3.4. Briefly explain four (04) different groups of ABO system blood group discrepancies giving examples for each. (40 marks)
- 3.5. List different steps or procedures that can be performed to resolve ABO blood group discrepancies. (30 marks)

Contd..../3-

4.

- 4.1. List the methods available for the preparation of a platelet concentrate for clinical use. (06 marks)
- 4.2. List ten (10) different platelet concentrates available for clinical use. (20 marks)
- 4.3. State the quality parameters to be checked and the specification of each parameter in quality monitoring of a platelet concentrate. (24 marks)
- 4.4. Explain the steps you would adopt to assure the quality of a platelet concentrate for clinical use. (50 marks)

5. A natural disaster has occurred resulting in a large number of casualties and deaths. Many hospitals were overwhelmed with trauma patients requiring urgent transfusion support. Concurrently, routine blood collection has been significantly reduced.

- 5.1. List the possible causes that adversely affect the blood stock in this situation. (20 marks)
- 5.2. Discuss the measures that are implemented by the blood transfusion service during the acute phase in an emergency in order to maintain uninterrupted blood supply. (40 marks)
- 5.3. Describe the strategies that are adopted by the blood transfusion service in the recovery phase of this situation. (40 marks)

6.

- 6.1. List the acute transfusion reactions associated with fever. (10 marks)
- 6.2. Briefly outline how to distinguish above transfusion reactions clinically and using laboratory investigations. (40 marks)
- 6.3. Briefly explain the immediate management of an acute transfusion reaction. (30 marks)
- 6.4. Outline the prerequisites to be considered to restart the transfusion of the same unit following a febrile reaction. (20 marks)

Contd..../4-

7.

7.1. Explain the importance of establishing a stem cell donor registry in Sri Lanka. (40 marks)

7.2. You are counseling a transfusion transmitted infection (TTI) negative donor who is waiting for unrelated stem cell donation.

Briefly outline five (05) other permanent stem cell donor deferral criteria with reason for each deferral. (40 marks)

7.3. A breast-feeding sibling was selected as the best donor among the family members for a patient awaiting allogeneic stem cell transplant for recurrent acute myeloid leukaemia (AML).

Briefly explain the special precautions that are taken during the preparation of this donor for peripheral blood stem cell donation. (20 marks)

8.

8.1. Explain the laboratory and clinical criteria to initiate regular blood transfusions for a patient with transfusion dependent thalassaemia. (30 marks)

8.2. Describe the aims of regular blood transfusions in a patient with transfusion-dependent thalassaemia. (40 marks)

8.3. Outline the immunohaematological investigations and blood component selection for a patient with transfusion dependent thalassaemia. (30 marks)