MASTER COPY. K Gunasekera

Dr. K. Gunasekera
(Chief Examiner)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

SELECTION EXAMINATION FOR ENROLMENT TO THE IN-SERVICE TRAINING PROGRAMME IN POSTGRADUATE DIPLOMA IN TRANSFUSION MEDICINE – DECEMBER 2020

Date:- 7th December 2020 **Time:-** 1.00 p.m. – 4.00 p.m.

Answer six (06) questions only.
Answer each question in a separate book.

1. A 2-day-old baby boy is having a fever spike of 38°C.

   The full blood count result is as follows:

Hb	14.5 g/dl
Platelet count	75 x 10^3/µl
WBC	13 x 10^3/µl
Blood picture	Neutrophil leucocytosis with toxic changes and manual platelet count is 70 x 10^3/µl.

   Baby is clinically stable with no bleeding manifestations and the baby's weight is 2 Kg.
   Mother of this baby has a normal platelet count and she delivered at POA of 34 weeks by an elective LSCS as she had pre-eclampsia.

1.1. Explain the mechanisms for low platelet counts in this baby. (25 marks)

1.2. Discuss the need of platelet transfusions for this baby. (25 marks)

1.3. Write the clinical indications with threshold levels for platelet transfusions in neonates and children. (50 marks)

2.

2.1. Describe primary immune response and secondary immune response. (40 marks)

2.2. What is a naturally occurring blood group antibody? (10 marks)

2.3. Compare IgM and IgG blood group antibodies. (40 marks)

2.4. List five (05) immune transfusion reactions. (10 marks)

Contd...../2-

3.

3.1. Define the term 'blood cold chain'. (10 marks)

3.2. What are the devices essential to maintain the blood cold chain? (20 marks)

3.3. Explain the benefits of cold chain maintenance to a blood transfusion service. (60 marks)

3.4. Write the storage temperatures of the following blood products (10 marks)

3.4.1. Red Cell Concentrates

3.4.2. Fresh Frozen Plasma

3.4.3. Platelet Concentrates

3.4.4. Washed red cells

3.4.5. Cryoprecipitate after thawing

4.

4.1. Define the term 'Maximum Surgical Blood Ordering Schedule' (MSBOS). (10 marks)

4.2. Briefly discuss the categories of MSBOS. (20 marks)

4.3. State the instances that you cannot adhere to the MSBOS. (20 marks)

4.4. List the benefits of MSBOS. (30 marks)

4.5. Enumerate the criteria that should be fulfilled to start the MSBOS in your blood bank. (20 marks)

5.

5.1. Outline the properties of a transfusion transmitted infective agent. (20 marks)

5.2. Name four (04) transfusion transmissible infective agents and a marker for detection of each agent. (30 marks)

5.3. What do you understand by 'serological window period'? (10 marks)

5.4. Describe strategies to eliminate the window period blood donations. (40 marks)

Contd...../3-

6. Three units of red cell concentrates were issued for a 62-year-old patient with aplastic anemia, which were transfused over 2 days. Transfusion of the first 2 units were uneventful. 30 minutes into the transfusion of the third unit, patient developed rigors and breathlessness. On examination her temperature had risen to 39°C, blood pressure had dropped to 65/40 mmHg from 130/80 mmHg and pulse rate had increased to 116/minute from 78/minute. No urticarial rash noted.

6.1. What are the possible causes of this transfusion reaction? (15 marks)

6.2. Outline the immediate management of this patient. (35 marks)

6.3. Bed side check and the investigations revealed that correct blood was given to the patient with no ABO mismatch. Chest x ray was normal. What is the most likely transfusion reaction? (05 marks)

6.4. How do you confirm the type of reaction mentioned in 6.3? (10 marks)

6.5. How do you prevent the occurrence of the type of reaction mentioned in 6.3? (35 marks)

7.

7.1. List the objectives of red cell antibody testing in pregnancy. (20 marks)

7.2. Enumerate the clinically significant and clinically non-significant antibodies of HDN. (20 marks)

7.3. A 28-year-old female patient with a POA of 28 weeks was referred to the blood bank from the antenatal clinic. Patient's blood group O Rh D negative and this is her second pregnancy.
As a blood bank medical officer how would you follow up this patient? (60 marks)

8. Write short notes on:

8.1. Informed consent for transfusion. (30 marks)

8.2. Intravenous immunoglobulin (IVIG). (35 marks)

8.3. Anti Human Globulin (AHG). (35 marks)