

**POSTGRADUATE INSTITUTE OF MEDICINE**  
**UNIVERSITY OF COLOMBO**

**QUALIFYING EXAMINATION FOR SELECTION OF CANDIDATES FOR**  
**IN-SERVICE TRAINING PROGRAMME IN DIPLOMA IN**  
**TRANSFUSION MEDICINE**

**JULY, 1998**

Date : 28<sup>th</sup> July, 1998

Time : 9.30 a.m. – 12.30 p.m.

**Answer Six questions only**

1. What do you understand by the following terms ?
  - i. an unpaid donor
  - ii. a replacement donor
  - iii. a paid donor
  - iv. an autologous donor
  
2. Discuss briefly the clinical indications for using the following blood products :
  - i. fresh frozen plasma
  - ii. cryoprecipitate
  - iii. platelet concentrates
  
3. Give a brief account of the non immunological complications of blood transfusions.
  
4. A three day old baby of primi para was found to be jaundiced. Describe briefly the steps you would take to arrive at the cause of the jaundice.
  
5.
  - a. List the diseases transmitted by blood transfusions.
  - b. Describe briefly how donated blood is screened for the diseases you have listed in (a),
  - c. State what questions you will ask the donor to ensure that the donor is not infected with HIV and hepatitis B.
  
6. A housman in a surgical unit informs you that a patient developed a temperature 102<sup>0</sup> F accompanied by rigor, ½ hour after a blood transfusion.  
  
Discuss how you would manage this problem as the medical officer in the blood bank.

7. Write short notes on :
- a) Antiglobulin tests (Coombs)
  - b) Autoagglutination
  - c) Human leucocyte antigen system
8. A bomb blast victim in the accident service has been transfused twelve litres of blood within 24 hours of admission.
- a. Discuss briefly the complications that may arise.
  - b. State preventive measures that can be taken to minimize these complications.

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**QUALIFYING EXAMINATION FOR SELECTION OF CANDIDATES FOR**  
**IN-SERVICE TRAINING PROGRAMME IN DIPLOMA IN**  
**TRANSFUSION MEDICINE**  
**AUGUST , 1999**

Date : 03<sup>rd</sup> August, 1999

Time : 2.00 p.m. – 5.00 p.m.

**Answer Six questions only**

1.
  - i. What are the common causes of haemolytic disease of the newborn (HDN) in Sri Lanka.
  - ii. A newborn baby was clinically jaundiced and the blood group was found to be ARhD positive. Mother was ORh positive. What tests would you undertake to diagnose the cause of the jaundice.
  - iii. If exchange transfusion is needed what type of blood you supply?
2. Write short notes on -
  - i. Anti D immunoglobulin
  - ii. Delayed transfusion reaction
  - iii. Auto transfusion
3.
  - i. What tests are done on all blood donations to ensure that no infections are transmitted ?
  - ii. What questions would ask a person who attends a blood donor sessions to ensure that the person is not likely to be infected with Hepatitis B or HIV ?
4. Write a brief account on the following.
  - i. Hazard of massive blood transfusion
  - ii. Plasmapheresis

5.
  - i. What blood products can be prepared from a blood donation within the capability of a blood transfusion centre ?
  - ii. Describe how you would prepare one of the components you mentioned and its clinical indications.
  
6.
  - i. Describe the process of collecting blood for transfusion.
  - ii. What are the hazards of a blood donation ?
  - iii. What measures would you adopt to ensure that the act of blood donation is not harmful to that person ?
  
7. Describe how you would investigate a patient who is said to have suffered a haemolytic transfusion reaction.
  
8. Write short notes on -
  - i. White cell antibodies
  - ii. Cold agglutinin titre
  - iii. Indirect coomb's test

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**QUALIFYING EXAMINATION FOR SELECTION OF CANDIDATES FOR**  
**IN-SERVICE TRAINING PROGRAMME IN DIPLOMA IN**  
**TRANSFUSION MEDICINE**  
**AUGUST , 2000**

Date : 29<sup>th</sup> August, 2000

Time : 2.00 p.m. – 5.00 p.m.

**Answer Six questions only**

1. Discuss the use of anti D immunoglobulin in the prevention of haemolytic disease of the newborn.
  
2. Discuss the advantages and disadvantages of,
  - a) an unpaid donor
  - b) a replacement donor
  - c) a paid donor
  - d) autologous donor
  
3. Give a brief account of the immunological complications of blood transfusion.
  
4. Write short notes on :
  - i. Direct antiglobulin test
  - ii. Hazards of repeated blood transfusion
  - iii. Exchange transfusion
  
5. A patient after a road traffic accident is transfused 12 unites of blood within 16 hrs. What complications would you expect and what measures would you adopt to prevent them.
  
6. Describe briefly the clinical indications for using the following blood products.
  - a. Fresh frozen plasma
  - b. Cryo precipitate
  - c. Platelet concentrates

7. An Rh-adult female is transfused one unit of Rh positive blood in the emergency accident service unit.
- 7.1 Discuss the effect of this transfusion on the immune system of this patient. One year later she conceives a child by an Rh positive man.
- 7.2 Discuss the possible effects of this pregnancy on the immune system of the mother
- The baby is jaundiced at birth  
Hg 6.0 g/dl  
Reticulocyte count 10%  
Direct coomb's test – positive  
S bilirubin is increased
- 7.3 Interpret this data taking the clinical background of the mother in to consideration.
- 8.
- a) List the diseases transmitted by blood transfusion.
- b) Describe briefly how donated blood is screened for the diseases you have listed in (a)
- c) State what questions you will ask the donor to ensure that the donor is not infected with HIV & Hepatitis B

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**TRANSFUSION MEDICINE**  
**AUGUST, 2001**

Date : 14<sup>th</sup> August, 2001

Time : 1.30 p.m. – 4.30 p.m.

**Answer Six questions only**

1.
  - a) If a new intern house officer seeks advice from you in the event of a suspected acute transfusion reaction, describe how you would advise him as the medical officer, blood bank.
  - b) What are the preliminary investigations you would perform in the blood bank in the above situation.
2. Write a short account on preparation and indications of platelet concentrates.
3. Describe how you would organize a mobile blood donation camp in a remote village in Sri Lanka as medical officer, blood bank of a provincial hospital.
4. Discuss Therapeutic plasma exchange.
5. Discuss the blood products given for the following -
  - a) Haemophilia
  - b) Von Willibrand's disease
  - c) Disseminated intravascular coagulation
  - d) Severely anaemic patient going in for emergency laparotomy
6.
  - a) Define predeposit (Pre-operative) autologous blood donation.
  - b) List the benefits and disadvantages of (a)
  - c) Describe the practical aspects of collection, storage and transfusion of autologous predeposit blood.

7. Write short notes on -
- a) Directed donation
  - b) Special red cell preparations for transfusion.
8. Write short notes on -
- a) Use of filters in transfusion
  - b) Selection of blood for neonatal transfusion
  - c) Difficulties encountered in blood grouping

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**TRANSFUSION MEDICINE**  
**AUGUST , 2002**

Date : 13<sup>th</sup> August, 2002

Time : 1.30 p.m. – 4.30 p.m.

**Answer Six questions only**  
**All questions carry equal marks.**

1.
  - a) Discuss how would you screen a donor at the blood bank prior to collection of blood.
  - b) Write a short account on hazards of blood donation.
2. Discuss the preparation, storage, indications and hazards of transfusion of,
  - a) granulocyte concentrates
  - b) cryoprecipitate
3. Write short notes on -
  - a) maximum surgical blood order schedule
  - b) selection of blood for exchange transfusion of a newborn
  - c) use of frozen red cells
4. Write a brief account on the use of anti D immunoglobulin in the prevention of haemolytic disease of the new born.
5. Write short notes on -
  - a) Cold agglutinin titre
  - b) Kell blood group system
  - c) Mixed field agglutination

6.
  - a) Write a short account on pre transfusion compatibility testing.
  - b) What are the possible causes of transfusion of wrong blood to a patient.
  
7. Discuss the nonimmunological complications of blood transfusion.
  
8. Write short notes on -
  - a) Delayed haemolytic transfusion reactions
  - b) Febrile nonhaemolytic transfusion reactions
  - c) Transfusion related acute lung injury (TRALI)

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**QUALIFYING EXAMINATION FOR SELECTION OF CANDIDATES FOR**  
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**TRANSFUSION MEDICINE**  
**JANUARY , 2003**

Date : 31<sup>st</sup> January, 2003

Time : 19.30 p.m. – 4.30 p.m.

**Answer Six questions only**

1.
  - a) What are the types of blood donors ?
  - b) Discuss the advantages and disadvantages of each type of blood donation.
  - c) Outline the high risk behaviours which exclude a donor permanently and temporarily.
  
2.
  - a) How do you diagnose clinically an acute transfusion reaction due to bacterial contamination of the blood product ?
  - b) Discuss the investigations and immediate management of such a reaction.
  - c) What measures would you take to prevent bacterial contamination of donor blood?
  
3. Write short notes on -
  - a) Platelet refractoriness
  - b) Use of irradiated blood products
  - c) Therapeutic plasmapheresis
  
4.
  - a) Discuss in detail about immunohaemotological testing of a antedatal mother. ( from the first booking onwards)
  - b) RhD negative mother with a POA of 34 weeks found to have a RhD antibody titre above 1/32 and was delivered by a caesarean section.  
  
What investigations would you do to assess the baby ?

- 5.
- a) What information would be included in a blood request form ?
  - b) Outline the procedure of monitoring a transfused patient.
  - c) A thalassaemic patient who needed a blood transfusion, developed a fever spike of  $38.2^{\circ}\text{C}$ , 35 minutes after starting the infusion of red cell concentrate. He did not have any other abnormal clinical findings.
6. Write short notes on -
- a) testing of HIV status of donor blood
  - b) Haemolysin test
  - c) Indirect antiglobulin test
- 7.
- a) What are the hazards of transfusion in neonates ?
  - b) Discuss the strategies to minimize transfusion risks in neonates.
  - c) How do you select blood for a neonate who needs an exchange transfusion ?
8. Write short notes on -
- a) Immuno modulatory effects of transfusion.
  - b) HLA antigen antibody system.
  - c) Neonatal allo immune thrombocytopenia

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**TRANSFUSION MEDICINE**  
**SEPTEMBER , 2003**

Date : 16<sup>th</sup> September, 2003

Time : 1.30 p.m. – 4.30 p.m.

**Answer Six questions only**  
**All question carry equal marks.**  
**Answer each question in a separate book.**

1.
  - a) Discuss the threshold and target haemoglobin levels for red cell transfusions in a non bleeding surgical patient.
  - b) Describe the steps that can be taken to reduce the needs for donor blood transfusion in a surgical patient.
  
2.
  - a) Enumerate the antibodies that can cause haemolytic disease of the new born. (HDN)
  - b) Describe how you would do screening for HDN in pregnancy.
  
3. Write short notes on -
  - a) Graft Vs Host Disease
  - b) ABO blood group discrepancies ( discrepancies in serum and cell grouping)
  - c) Platelet refractoriness
  
4. Describe briefly the acute life threatening complications of transfusion.
  
5. Write short notes on -
  - a) HLA system
  - b) Therapeutic plasma exchange

6.
  - a) Define the term leucocyte depleted blood components.
  - b) What are the methods available for preparation of leucocyte poor blood products ?
  - c) What are the indications for leucocyte poor blood components ?
  
7. Describe briefly the steps that you would take to provide safe blood.
  
8. Write short notes on -
  - a) Massive blood transfusion
  - b) Exchange transfusion in neonates
  - c) Indications for fresh frozen plasma

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**TRANSFUSION MEDICINE**  
**AUGUST , 2004**

Date : 10<sup>th</sup> August, 2004

Time : 1.00 p.m. – 4.00 p.m.

**Answer Six questions only**

**All question carry equal marks.**

**Answer each question in a separate book.**

1. Give an account of donor motivation, recruitment and retention of voluntary blood donors.
2. Discuss briefly the preparation, clinical indications and adverse effects of,
  - a) fresh frozen plasma
  - b) platelet concentrates
3.
  - a) Describe how would you select red cells for intrauterine transfusions and exchange ransfusions in a neonate.
  - b) List the indications for anti D prophylaxix for Rh negative.
4. Write short notes on -
  - a) donor apheresis
  - b) peri operative red cell salvage
  - c) frozen red cells
5. Give an account of the pathophysiology, clinical signs and symptoms, investigations and management of immediate haemolytic transfusion reactions due to ABO incompatibility.
6. Write short notes on -
  - a) neutrophil and platelet antigen-antibody systems
  - b) Rh D antigen
  - c) Characteristics of kidd antibodies

7.
  - a) List the abnormalities encountered in expression of ABH antigens giving rise to ABO blood group discrepancies.
  - b) Describe the secretor and non secretor status of a person
  
8.
  - a) List the diseases that can be transmitted through blood and blood components.
  - b) Describe the methods that are effective in reducing the incidence of blood – born HIV infection.

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**TRANSFUSION MEDICINE**  
**AUGUST, 2005**

Date : 16<sup>th</sup> August, 2005

Time : 1.30 p.m. – 4.30 p.m.

**Answer Six questions only**  
**All question carry equal marks.**  
**Answer each question in a separate book.**

1.
  - a) What safety precautions you would adopt to ensure the safety of a donor in the collecting centre ?
  - b) How would you minimize transfusion transmitted hepatitis B and HIV infections in the blood bank set up ?
2. Give an account of nonimmunological complications of blood transfusion.
3. Write short notes on -
  - a) Therapeutic plasmapheresis
  - b) Clinical use of anti D immunoglobulin
4.
  - a) What blood products would you recommend for following conditions :
    - i. Haemophilia A
    - ii. Disseminated intravascular coagulation
5.
  - a) What are the common antibodies causing haemolytic disease of the newborn ?
  - b) How do investigate an icteric baby , delivered within 24 hours ?
  - c) If exchange transfusion is indicated, how would you select blood, for this baby ?

6. Write short notes on -
  - a) group and hold technique
  - b) direct antiglobulin test
  
7. Write short notes on -
  - a) kid blood group system
  - b) HLA system
  
8. Give a brief account on the following conditions -
  - a) TRALI (Transfusion related acute lung injuries )
  - b) Post transfusion purpura

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**SELECTION EXAMINATION FOR DIPLOMA IN**  
**TRANSFUSION MEDICINE**  
**AUGUST, 2006**

Date : 16<sup>th</sup> August, 2006

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

**Answer six questions only.**

**All questions carry equal marks.**

**Answer each question in a separate book.**

1. Discuss the instructions you would give as a MO Blood Bank, to an organizer who wishes to organize a ,mobile blood donation campaign in a peripheral station for the first time.
  
2. What are the steps taken at the blood bank and in the ward to provide a safe unit of red cells to a patient.
  
3.
  - 3.1. What are the causes of acute haemolytic transfusion reaction ?
  - 3.2. Discuss the pathophysiology of one of the above, you mentioned.
  
4. Write short notes on
  - 4.1. Rh blood group system.
  - 4.2. Indirect antiglobulin test.
  - 4.3. New techniques in cross matching.
  
5.
  - 5.1. What are the red cell products available in Sri Lanka ?
  - 5.2. Discuss the indication/s, advantages and disadvantages of each product.

6. 12 hours old full term PzCz baby, born to a mother with no antenatal records, has Hb of 7.4 g/dl. Blood picture shows 92% nucleated red cells.
  - 6.1. What are the causes for the above condition of the baby ?
  - 6.2. What are the required investigations and the expected results to arrive at the diagnosis ?
  
7.
  - 7.1. List the indications for platelet transfusion.
  - 7.2. What are the types of platelets available and indicate the advantages and disadvantages of each of the type ?
  
8. Write short notes on
  - 8.1. Use of intravenous immunoglobulins.
  - 8.2. Leucocyte depleted/poor blood products.
  - 8.3. Factor VIII preparations.

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**SELECTION EXAMINATION FOR DIPLOMA IN**  
**TRANSFUSION MEDICINE**  
**SEPTEMBER, 2007**

Date : 6<sup>th</sup> September 2007

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

**Answer six questions only.**

**All questions carry equal marks.**

**Answer each question in a separate book.**

1.
  - 1.1. What are the different categories of blood donors ?
  - 1.2. State the eligibility criteria for selection as a donor for one of the above categories.
  - 1.3. Outline the methods to be adopted by a blood bank to maintain an adequate donor pool.
  
2.
  - 2.1. Outline the steps of collection of a random donor platelet concentrate.
  - 2.2. State the factors which affect the maximum platelet increment in a recipient who has no causes of platelet consumption.
  - 2.3. Mention the formulae available to calculate the dose of platelet concentrate.
  
3.
  - 3.1. Describe the pathophysiology of Rh haemolytic disease of the newborn.
  - 3.2. What methods would you adopt to prevent this disorder ?
  - 3.3. What are the methods available to quantify feto-maternal bleeding ?

4.
  - 4.1. Mention the relevant investigations you would perform to exclude malaria from a donor sample.
  - 4.2. What methods are available to detect HIV infection in a donor Sample ?
  - 4.3. Mention how you would prevent bacterial contamination of a donor unit.
  
5. Compare and contrast different methods of compatibility testing during the past decade.
  
6.
  - 6.1. Describe the uses of the antibody screening panels (Selectogen I and II)
  - 6.2. Outline the steps of A and B haemolysin titre testing.
  
7.
  - 7.1. Outline how you would investigate a five year old Thalassaemic with repeated febrile transfusion reactions.
  - 7.2. Mention the common causes of haemolytic transfusion reactions.
  - 7.3. How would you manage a case of transfusion transmitted malaria ?
  
8. Write short notes on
  - 8.1. von Willebrand's disease
  - 8.2. Transfusion related acute lung injury (TRALI)
  - 8.3. Post transfusion purpura (PTP)

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**SELECTION EXAMINATION FOR ADMISSION TO THE TRAINING**  
**PROGRAMME LEADING TO THE POSTGRADUATE DIPLOMA IN**  
**TRANSFUSION MEDICINE**  
**SEPTEMBER 2008**

Date : 9<sup>th</sup> September 2008

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

**Answer six questions only.**

**Answer each question in a separate book.**

1.
  - 1.1. Discuss the steps that the blood bank has to take when a donor unit is found to be positive for HIV screening test. (40 marks)
  - 1.2. “Directed donations should be discouraged.” Comment on this Statement giving reasons. (30 marks)
  - 1.3. Outline the duties of a Public Health Inspector (PHI) in the blood Bank. (30 marks)
2. Describe briefly the functions of a provincial hospital blood bank. (100 marks)
3. An 8 year old girl who is on regular transfusion for thalassaemia major developed rigors and fever 10 minutes after starting a blood transfusion. She passed dark coloured urine shortly afterwards.
  - 3.1. What is the probable diagnosis ? (10 marks)
  - 3.2. What is the immediate management of this child ? (50 marks)
  - 3.3. State briefly the steps taken in the blood bank to prevent such an event. (40 marks)
4.
  - 4.1. Describe the human platelet antigen system. (60 marks)
  - 4.2. Discuss briefly the effects of aspirin on platelets. (40 marks)

5. Write short notes on
  - 5.1. Human Leucocyte Antigen (HLA) system. (30 marks)
  - 5.2. Autologous transfusion. (30 marks)
  - 5.3. Informed consent and blood transfusion. (40 marks)
  
6.
  - 6.1.
    - 6.1.1. List the types of von Willebrand disease (vWD). (20 marks)
    - 6.1.2. What treatment options are available to manage von Willebrand Disease ? (30 marks)
  - 6.2.
    - 6.2.1. What are the absolute indications for transfusion of fresh frozen Plasma (FFP). (20 marks)
    - 6.2.2. How would you ensure the quality of FFP produced in your Blood bank ? (30 marks)
  
7. Write short notes on
  - 7.1. False negative antiglobulin test (Coomb's test). (40 marks)
  - 7.2. Facilities available to detect transfusion transmitted infections in a Regional blood bank. (40 marks)
  - 7.3. New diseases identified recently as transfusion transmitted infections. (20 marks)
  
8.
  - 8.1. Outline the methods available to detect foetomaternal transfusion. (10 marks)
  - 8.2. Critically analyse the advantages and disadvantages of the methods you mentioned in 7.1. (20 marks)
  - 8.3. Give reasons for the low incidence of haemolytic disease of the new Born (HDN) due to ABO incompatibility, in comparison to Rh Incompatibility. (30 marks)
  - 8.4. Outline the follow up plan of a 26 week pregnant Rh negative mother Found to have serological evidence of anti D. (40 marks)

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**SELECTION EXAMINATION FOR ADMISSION TO THE**  
**TRAINING PROGRAMME LEADING TO THE POSTGRADUATE**  
**DIPLOMA IN TRANSFUSION MEDICINE**  
**SEPTEMBER 2009**

Date : 15<sup>th</sup> September 2009

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

**Answer six questions only.**

**Answer each question in a separate book.**

- 1.
- 1.1. List the causes of neonatal jaundice. (20 marks)
- 1.2. One day old baby boy was found to be icteric. He is the first born of a 25 year old woman with no history of transfusion or antenatal complications.  
Investigations on the baby and mother are as follows:
- Baby**
- |                          |                            |
|--------------------------|----------------------------|
| Total bilirubin          | 10.8 mg/dl                 |
| Hb                       | 16.9 g/dl                  |
| HCT                      | 0.54                       |
| Blood group & Rh         | A <sub>1</sub> Rh positive |
| Direct antiglobulin test | negative                   |
- Mother**
- |                               |               |
|-------------------------------|---------------|
| Blood group & Rh              | O Rh negative |
| Unexpected antibody screening | negative      |
- 1.2.1. What is the most probable cause for this neonate's jaundice ?  
Give reasons. (40 marks)
- 1.2.2. What additional laboratory tests could have been of value ? (10 marks)
- 1.2.3. How would you manage this baby ? (30 marks)
2. Write short notes on :-
- 2.1. Buffy coat transfusions (50 marks)
- 2.2. Irradiated blood products (50 marks)
3. Discuss ABO grouping discrepancies (100 marks)

4. A donor informs you that he has developed jaundice 6 days after donating a unit of whole blood. His family doctor has made a provisional diagnosis of viral hepatitis.
- Outline the action you will take
- 4.1. regarding the unit of donated blood. (50 marks)
- 4.2. to investigate the cause of jaundice in the donor. (50 marks)
5. Write short notes on :-
- 5.1. Importance of indirect antibody test (IAT) in blood bank serology (40 marks)
- 5.2. Immuno modulatory effects of transfusion. (60 marks)
6. Several transfusion reactions were reported following red cell and platelet transfusions. They were associated with chills, rigors and hypotension. As a blood bank Medical Officer,
- 6.1. how would you investigate these complications ? (40 marks)
- 6.2. discuss the steps you would take to prevent such reactions in future. (60 marks)
- 7.
- 7.1. What is a clinically significant antibody ? (10 marks)
- 7.2. Outline the clinical effects of such an antibody. (20 marks)
- 7.3. Describe briefly the methods used to screen red cell antibodies in blood transfusion. (30 marks)
- 7.4. Discuss briefly the differences of antibody screen and cross match in blood transfusion. (40 marks)
- 8.
- 8.1. What are the indications for platelet transfusions (20 marks)
- 8.2. How would you ensure the quality of platelets produced in your blood bank ? (30 marks)
- 8.3. Discuss the causes for platelet refractoriness. (20 marks)
- 8.4. How would you suspect and investigate platelet refractoriness ? (30 marks)

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**SELECTION EXAMINATION FOR ADMISSION TO THE**  
**TRAINING PROGRAMME LEADING TO THE POSTGRADUATE**  
**DIPLOMA IN TRANSFUSION MEDICINE**  
**OCTOBER 2010**

Date : 21<sup>st</sup> October 2010

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

**Answer six questions only.**

**Answer each question in a separate book.**

1. 30 year old female patient developed tightening of chest, shortness of breath and loin pain half an hour ( $\frac{1}{2}$  an hour) after a blood transfusion.
  - 1.1. What are the possible causes for this clinical condition ? (20 marks)
  - 1.2. What investigations would you do for this patient ? (40 marks)
  - 1.3. How would you manage this situation ? (40 marks)
  
2.
  - 2.1. Describe briefly the advantages of leucocyte depletion of blood and blood products. (35 marks)
  - 2.2. What are the methods available for leucodepletion of blood products ? (30 marks)
  - 2.3. List the indications for the use of leucodepleted blood and blood products. (35 marks)
  
3.
  - 3.1. Discuss the importance of screening blood donors.(30 marks)
  - 3.2. How would you screen a blood donor ?(70 marks)
  
4. Write short notes on :
  - 4.1. ABO blood group system (50 marks)
  - 4.2. Clinical significance of blood group antigens other than ABO system. (50 marks)

5. 34 year old Rh negative mother in her second pregnancy was referred to you at 34 weeks of gestation with Rh D antibody titre of 1024.
- 5.1. What advice would you give the obstetrician regarding her further management? (20 marks)
- 5.2. What investigations should be carried out at the delivery of the baby ? (20 marks)
- 5.3. What are the possible causes of high Rh titre in this pregnancy ? (30 marks)
- 5.4. Briefly outline the indications for exchange transfusion in a neonate. (30 marks)
6. Write short notes on :
- 6.1. Use of intravenous immunoglobulin. (30 marks)
- 6.2. Transfusion associated graft versus host disease. (35 marks)
- 6.3. Clinical applications of antiglobulin test. (35 marks)
- 7.
- 7.1. What are the complications of massive blood transfusion ? (30 marks)
- 7.2. List the blood products and pharmaceutical agents that can be given in a patient with massive surgical haemorrhage. (35 marks)
- 7.3. What investigations are important in this situation and how would you use these investigations to manage this patient ? (35 marks)
- 8.
- 8.1. What are the anticoagulant-preservative solutions use in blood bank practice. (40 marks)
- 8.2. Discuss the advantages and disadvantages of each solution you mentioned. (60 marks)

**POSTGRADUATE INSTITUTE OF MEDICINE**  
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**SELECTION EXAMINATION FOR ENROLMENT TO THE IN-SERVICE**  
**TRAINING PROGRAMME IN POSTGRADUATE DIPLOMA IN**  
**TRANSFUSION MEDICINE**  
**OCTOBER 2011**

Date : 20<sup>th</sup> October 2011

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

**Answer six questions only.**  
**Answer each question in a separate book.**

1.
  - 1.1. What are the blood components required to treat a patient with post partum haemorrhage who is actively bleeding – Hb 6.8 g/dl. (40 marks)
  - 1.2. Explain how these components help in stabilizing haemostasis. (60 marks)
  
2. Discuss the measures adopted by transfusion services to minimize the risk of transfusion transmissible infections. (100 marks)
  
3. Describe the complications that can arise due to blood transfusion. (100 marks)
  
4.
  - 4.1. What are the commercially available plasma derivatives used in clinical practice. (50 marks)
  - 4.2. Discuss the indication/s of five products listed in 4.1. (50 marks)

- 5.
- 5.1. List the causes of neonatal jaundice in a term baby. (40 marks)
- 5.2. Select five (05) causes from the list in 5.1 and explain the investigations with expected results which are required to arrive at a diagnosis. (60 marks)
6. Write short notes on –
- 6.1. minimizing blood usage in surgical patients. (50 marks)
- 6.2. neonatal alloimmune thrombocytopenia. (50 marks)
- 7.
- 7.1. What are the errors resulting in wrong blood being transfused to a wrong patient. (40 marks)
- 7.2. Discuss the pathophysiology of acute haemolytic transfusion reaction due to ABO incompatibility. (60 marks)
8. Write short notes on –
- 8.1. indications for anti D immunoglobulin in Rh D negative mother. (50 marks)
- 8.2. directed blood donation. (50 marks)

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**OCTOBER 2012**

Date : 23<sup>rd</sup> October 2012

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

**Answer six questions only.**

**Answer each question in a separate book.**

1. A 3 year old girl with thalassaemia major who is on regular transfusions received a red cell transfusion.

One hour after the transfusion she developed a temperature rise of 1<sup>o</sup>C with chills. Further questioning and examination did not reveal chest pain, loin pain or rash. Vital parameters were stable.

1.1. What is the most likely diagnosis (10 marks)

1.2. Discuss  
(a) the pathophysiology of above mentioned diagnosis. (30 marks)

(b) investigations and (30 marks)

(c) management of this patient. (30 marks)

2. A 25 year old primi with POA of 12 weeks on her first antenatal visit was grouped as Rh negative. No past history of transfusions.

How would you advise the obstetrician regarding management of her pregnancy and delivery ? (100 marks)

3.
  - 3.1. Describe the different ways of bacterial contamination of a blood pack. (30 marks)
  - 3.2. What are the common organisms implicated in bacterial contamination ? (20 marks)
  - 3.3. Discuss the measures you would take to reduce the risk of bacterial contamination of blood components. (50 marks)
  
4. Write short notes on :-
  - 4.1. therapeutic plasma exchange. (50 marks)
  - 4.2. Rh system. (50 marks)
  
5. How would you reduce the use of allogenic red cell transfusions to a patient awaiting planned surgery ? (100 marks)
  
6. You are a house officer attached to a medical ward in a Teaching hospital. The consultant has instructed you to arrange a blood transfusion to a 40 year old severely anaemic patient.  
  
What steps would you follow to ensure safe transfusion during pre transfusion sample collection and transfusion of the blood unit. (100 marks)
  
7. Write short notes on :-
  - 7.1. platelet antigen system and its clinical significance. (50 marks)
  - 7.2. exchange transfusions in a neonate. (50 marks)
  
8. Discuss the steps you would take during blood donation process to ensure the quality of blood components. (100 marks)

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**TRANSFUSION MEDICINE**  
**OCTOBER 2013**

Date : 23<sup>rd</sup> October 2013

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

**Answer six questions only.**

**Answer each question in a separate book.**

1.
  - 1.1. What are the indications for red cell exchange transfusions ?(30 marks)
  - 1.2. What are the risks of exchange transfusions ? (40 marks)
  - 1.3. What criteria would you use when selecting blood for neonatal exchange transfusion ? (30 marks)
2.
  - 2.1. What are the types of blood components available in Sri Lanka ? (20 marks)
  - 2.2. Give two (02) main indications for the use of each of the components you have mentioned. (30 marks)
  - 2.3. State the shelf life and storage conditions required for each of blood components mentioned in 2.1. (30 marks)
  - 2.4. Briefly explain the advantages of blood component processing and usage. (20 marks)
3. What are the possible causes for positive direct antiglobulin test (DAT) and explain the clinical significance ? (100 marks)

4. A previously healthy, 59 year old male was admitted to a local hospital following a crush injury to both lower limbs. He was infused 3000 ml of colloids and crystalloids and was transferred to the accident service of your hospital.

Two units of uncrossmatched blood were requested as the patient was in shock.

4.1. What blood group would you select ? (10 marks)

4.2. Give your reasons for selecting the above mentioned blood group. (20 marks)

His pretransfusion test results were as follows :

Blood group - B Rh D negative

Antibody screen - negative

Six units crossmatched blood have been ordered for immediate surgery.

4.3. What blood group would you select ? (10 marks)

4.4. What other blood groups can you use if the group mentioned by you is not available ? Give reasons for your answer. (20 marks)

During surgery, one platelet pool and 4 units of FFP were requested.

4.5. Comment on the above request. (20 marks)

4.6. What group of FFP should be administered ? (10 marks)

By the end of surgery,34 units of red cells,8 units of FFP and 18 units of platelets have been used.

He continued to bleed from wounds and there was oozing from venepuncture sites.

4.7. What is your presumptive diagnosis ? (10 marks)

5. A 7 year old boy with a swollen painful knee joint was admitted to a hospital. He had several similar incidents in recent past.

5.1. What is the most likely diagnosis ? (10 marks)

5.2. What investigations would you do to confirm the diagnosis?(40 marks)

5.3. What treatment options are available to manage this patient?(50 marks)

6.
  - 6.1. Briefly describe the characteristics of a transfusion transmissible infectious agent. (20 marks)
  - 6.2. Give examples for each of the above. (10 marks)
  - 6.3. List the transfusion transmissible infections for which screening is mandatory in Sri Lanka. (10 marks)
  - 6.4. What test methods are used for each of the above ? (20 marks)
  - 6.5. What measures would you take to reduce the transfusion transmissible infections when selecting blood donors ? (40 marks)
  
7. A patient developed chest pain, pain at cannula site and fever about 10 minutes after initiating a packed red cell transfusion.
  - 7.1. List the types of immediate transfusion reactions. (20 marks)
  - 7.2. Which of the above is the most likely in this patient ? (05 marks)
  - 7.3. What immediate measures would you take to manage this patient ? (20 marks)
  - 7.4. What investigations would you order ? (20 marks)
  - 7.5. Briefly describe the strategies to ensure a safe transfusion in a ward setting. (35 marks)
  
8.
  - 8.1. List five (05) major conditions which need regular red cell transfusions. (20 marks)
  - 8.2. What are the complications of long term red cell transfusion therapy ? (40 marks)
  - 8.3. What precautionary measures would you take to minimize the mentioned complications ? (40 marks)

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**TRANSFUSION MEDICINE**  
**OCTOBER 2014**

Date : 20<sup>th</sup> October 2014

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

**Answer six questions only.**

**Answer each question in a separate book.**

1. A 72 year old male patient is admitted with symptoms of anaemia for blood transfusion.
  - 1.1. Describe the steps that should be followed to ensure the selection of compatible red cells for transfusion. (40 marks)
  - 1.2. 2 units of compatible red cell concentrates were transfused. Towards the end of second transfusion, patient developed shortness of breath.

What are the possible causes for this reaction ? (30 marks)
  - 1.3. How would you manage one of the causes you have mentioned in 1.2 ? (30 marks)
  
2.
  - 2.1. What do you mean by " Directed Donation " ? (20 marks)
  - 2.2. Under what circumstances are directed donations medically justified? (40 marks)
  - 2.3. Would you accept the following individuals as blood donors ? Give reasons.
    - 2.3.1. A 55 year old well controlled diabetic patient currently not on medication.
    - 2.3.2. Young lady undergoing investigations prior to in vitro fertilization.
    - 2.3.3. A 40 year old male on thyroxin
    - 2.3.4. A person who had two (02) epileptic fits after trauma which occurred 2 ½ years back. (40 marks)

3.
  - 3.1. What are the indications for platelet transfusions?(40 marks)
  - 3.2. Briefly describe the complications that can arise due to platelet transfusions. (60 marks)
  
4.
  - 4.1. Write five (05) indications for therapeutic plasma exchange. (25 marks)
  - 4.2. How do you prepare a patient for this procedure ? (60 marks)
  - 4.3. Write three (03) complications that can occur due to therapeutic plasma exchange. (15 marks)
  
5. How do you minimize use of blood and blood components in a 65 year old male patient who had several episodes of haematuria in the recent past awaiting prosectomy ? (100 marks)
  
6.
  - 6.1. Name five (05) clinically significant viruses that can be transmitted by blood and blood component transfusion. (25 marks)
  - 6.2. What are the viruses for which mandatory screening tests are done in the blood transfusion service ? (15 marks)
  - 6.3. What are the measures that have been adopted to minimize transmission of viruses listed in 6.2 through blood and blood component transfusion ? (60 marks)
  
7.
  - 7.1. List six (06) indications for neonatal red cell transfusions. (30 marks)
  - 7.2. How does the compatibility testing in a neonate differ from that of an adult ? (20 marks)
  - 7.3. Briefly describe the complications you would expect following a red cell transfusion in a neonate. (50 marks)
  
8. A 40 year old female developed fever during a red cell transfusion.
  - 8.1. What are the possible causes implicated in this situation? (40 marks)
  - 8.2. Describe the pathophysiology of one (01) of the causes mentioned in 8.2. (60 marks)