(LG 189) **APRIL 2015** **Sub. Code:2098**

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER III – BLOOD DONOR ORGANISATION AND MANAGEMENT, TECHNOLOGY OF COMPONENTS AND CLINICAL HAEMOTHERAPY

Q.P.Code: 202098

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. A primi gravida was brought to labor room after a sudden blood loss estimated to be about 2 liters. The vital signs show tachycardia and BP is 100/70 mmHg. The clinician said that when he tried to collect blood for testing, there was some increase in ooze from the venipuncture site. How will you manage the transfusion requirement for this patient?

2. What are the factors that contribute to pre-transfusion testing? What is electronic cross-matching and how is it different from conventional cross-match?

II. Write notes on: **(10 x 7 = 70)**

1. Methods of HLA typing.
2. Red cell salvage.
3. Ethical issues in transfusion medicine.
4. Write briefly about management of neonatal thrombocytopenia.
5. Pathogen reduction strategies for red cells.
6. Post transfusion purpura.
7. Management of inadvertent D positive transfusion.
8. Duffy group and its interaction with HIV and Malaria.
9. Indicators of quality in a blood transfusion practice.
10. Leapfrog technique in autologous deposits.

******

(LI 189) APRIL 2016 **Sub. Code:2098**

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER III – BLOOD DONOR ORGANISATION AND MANAGEMENT, TECHNOLOGY OF COMPONENTS AND CLINICAL HAEMOTHERAPY

Q.P.Code: 202098

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss the appropriate investigations and suggested management in a 56 year old male, who has undergone urgent coronary bypass graft surgery following a failed coronary arterial stent procedure and has uncontrollable haemorrhage post bypass? He has received streptokinase and the antiplatelet agents Abciximab (IIb IIIa inhibitor) and clopidogrel over the preceding 6 hours.
2. A 22 year old medical student has been donating blood once a year for the past 3 years. No problems were encountered for the first two donations. However, on the third donation, the donated unit was found to be anti-HIV reactive.
   a) As the person in charge of the Blood Transfusion Center, how would you manage the situation?
   b) What actions can be taken to prevent the re- occurrence of this situation?

II. Write notes on: **(10 x 7 = 70)**

1. Massive blood loss in a hospital setting.
2. Design an emergency blood management plan for your hospital to be activated when outbreak of Dengue has reduced 50% stocks in the blood bank?
3. Advice to a medical doctor who is scheduled for elective knee replacement surgery insisting that he should receive blood only from his wife or children?
4. “Uncrossmatched” red cell units.
5. Most suitable blood component to be used in Preterm neonate, delivered at 32 week of gestation requiring top-up red cell transfusion.
6. Most suitable blood component to be used in 32-year old man with relapsed acute myeloid leukemia on FLAG-IDA (fludarabine, cytosine arabinoside, G-CSF, idarubicin) chemotherapy regime requiring platelet and red cell support.
7. Most suitable blood component to be used in 25-year old woman with thrombotic thrombocytopenic purpura (TTP) requiring intensive therapeutic plasma exchange.
8. Advice a 35-year-old Bengali labourer who comes to donate blood? He could not fill in the donation form and you are unable to counsel him because of language barrier.
9. Advice a 32-year-old regular blood donor has donated whole blood five weeks ago and wants to donate platelets on this occasion.
10. Haemorrhagic disease of the newborn.

******

(LJ 189) OCTOBER 2016 **Sub. Code:2098**

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER III – BLOOD DONOR ORGANISATION AND MANAGEMENT, TECHNOLOGY OF COMPONENTS AND CLINICAL HAEMOTHERAPY

Q.P.Code: 202098

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. The various aspects required to set up a good quality management system in a transfusion service.

2. The steps to set up blood component and apheresis facilities for a tertiary care new 500 bed facility.

II. Write notes on: **(10 x 7 = 70)**

1. Transfusion-related acute lung injury (TRALI).
2. Red cell additive solutions.
3. Autologous donations.
4. Adverse events related to apheresis.
5. Intrauterine transfusions.
6. Rationale and Indications for the use of irradiated blood products.
7. Irradiation of blood / products.
8. Approach to exchange transfusion for severe HDFN.
9. Therapeutic phlebotomy.
10. Liberal vs restrictive strategy in transfusion practice.

******

(LK 189) MAY 2017 **Sub. Code:2098**

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER III – BLOOD DONOR ORGANISATION AND MANAGEMENT, TECHNOLOGY OF COMPONENTS AND CLINICAL HAEMOTHERAPY

Q.P.Code: 202098

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Techniques and strategies to enhance voluntary blood donation.
2. Discuss Massive blood loss, and it's management. Describe tests that guide therapy, critical thresholds and interventions in the context of post partum haemorrhage.

II. Write notes on: **(10 x 7 = 70)**

1. Molecular methods available for HLA typing.
2. National blood policy.
3. Transfusion reactions of immune etiology.
4. Therapeutic Plasma Exchange.
5. Leukoreduction – methods and indications.
6. Methods of NAT testing of blood donors.
7. Acute Normovolemic haemodilution.
8. Rare blood group registry.
9. Solid phase adherence assay – applications in transfusion medicine.
10. Diagnosis and management of a baby with Rh related Haemolytic disease of the fetus and newborn.

******

[LM 189] MAY 2018 **Sub. Code: 2098**

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER III – BLOOD DONOR ORGANISATION AND MANAGEMENT, TECHNOLOGY OF COMPONENTS AND CLINICAL HAEMOTHERAPY

Q.P.Code: 202098

Time: Three Hours **Maximum: 100 Marks**

I. Essay Questions: **(2 x 15 = 30)**

1. Describe in detail the basic concepts and important features of Haemovigilance system? Add a note on current status and future perspectives of hemovigilance in India?

2. Describe various bacteria that can contaminate blood and its components. Discuss the strategies for prevention of bacterial contamination in blood supply. Add a note on the rapid platelet bacterial contamination detection technologies.

II. Short notes: **(10 x 5 = 50)**

1. Blood Bank Information Systems.
2. Cohn process of plasma fractionation and the fractions that are source of various therapeutic proteins.
3. Estimation of survival of transfused radio labelled red cells.
4. Role of Riboflavin and Ultraviolet pathogen inactivation in platelets.
5. Evidence based transfusion guidelines for platelets in neonatal and older children.
6. Indications for therapeutic apheresis.
7. Informed consent and ethical issues in transfusion medicine.
8. Accreditation of Blood Banks
9. Problems in patients receiving multiple transfusion.
10. Extracoporeal Membrane Oxygenation (ECMO).

III. Reasoning Out: **(4 x 5 = 20)**

1. The reference range for haemoglobin on a control sample is 13.0±0.4 g/dL. A haemoglobin determination is performed five times in succession. The results are (in g/dL) 12.0, 12.3, 12.0, 12.2, and 12.1. Explain the results in terms of accuracy and precision.

2. A preterm infant presented with jaundice and anemia. Paediatrician has planned for exchange transfusion. Give the guidelines suggested for exchange transfusion for haemolytic disease of preterm infant within 12 hours of birth, What would be the ideal blood group of choice? Explain further other aspects of exchange transfusion in such neonates.

3. A 57- year-old female was transfused with one unit of packed redcells to correct anemia after surgery. The vital signs were normal. Her pre-transfusion haemoglobin was 8.5 gm/dl and Hct was 28%. According to the patient's physician the blood was administered "to make her feel better prior to discharge".
   i. Is blood transfusion appropriate in this patient?
   ii. What are the appropriate indications for single unit transfusion in adults?
   iii. What is transfusion trigger?
   iv. How do you advice the patient's physician in this case?
   v. How would you prevent such type of requests for transfusion in future in your hospital? Explain.

4. Random donor platelet concentrate was prepared and stored in platelet agitator cum incubator. On the 3rd day of storage, swirling movement was found to be absent.
   i. What is the significance of this finding?
   ii. What corrective action should be taken in future?
   iii. What records will you check?
   iv. What is the mechanism of swirling?
   v. Enumerate quality control tests for platelet concentrate.

******

[LO 189] MAY 2019 **Sub. Code: 2098**

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER III – BLOOD DONOR ORGANISATION AND MANAGEMENT, TECHNOLOGY OF COMPONENTS AND CLINICAL HAEMOTHERAPY

Q.P. Code: 202098

Time: Three Hours **Maximum: 100 Marks**

I. Essay Questions: **(2 x 15 = 30)**

1. Why is blood safety dependent on repeat voluntary blood donors? Describe the various strategies to improve motivation and retention of voluntary blood donors.

2. Discuss the various manifestation and lab profile of a patient with haemotoxic snakebite and how the blood bank can support such patients?

II. Short notes: **(10 x 5 = 50)**

1. National Haemovigilance program of India.
2. Shortage of blood – a public health problem?
3. Assessment of platelet function for patients.
4. Use of APCC for patients with acquired bleeding disorder.
5. Transfusion associated cardiac overload.
6. Steps to set up a blood storage unit in a hospital without a Blood bank.
7. Methods to study clinical demand for blood/components and MSBOS.
8. Investigation of a suspected major haemolytic transfusion reaction.
9. Use of technology to ensure bedside transfusion safety.
10. Members of an role of a hospital transfusion committee.

III. Reasoning Out: **(4 x 5 = 20)**

1. A 60 bedded Taluk hospital that is 20 km away from your Blood bank requests blood from your Blood Bank at least thrice every week. Currently, they send patient's relatives with samples along with a request.
   a) What would your strategy be to address the problem?
   b) How would you monitor the facility?

2. A lady 27 years second child in Nursery with platelet count 48,000/cumm. Maternal Anti HPA-la >1:32
   a) What would be your diagnosis?
   b) What are the testing platform available?
   c) How would you support the child?

3. A sample of blood is received in a blood bank in a lavender cap tube with a request for 2 units of packed red cells for transfusion to a patient in labour room for anaemia due to acute blood loss. The identity on the tube matches the request form. The sample was accepted. Upon forward typing, the group in the count sample does not match the historical group of the patient as recorded during ANC visit.
   a) What is the most likely type of error?
   b) What are next steps to ensure safe blood?

4. An 18 year old male patient who has been repeatedly transfused plasma for his severe haemophilia A is admitted for tonsillectomy in your hospital. His lab results are as follows: Haemoglobin 8 g/dL; APTT 102 sec (ref interval 38 – 44 secs). 1:1 Patient : Control Mix APTT: 92 secs.
   a) What is your diagnosis?
   b) What test will you do to confirm your suspicion?
   c) What will you recommend for this patient for surgery?

******