

IMMUNOHEMATOLOGY & TRANSFUSION MEDICINE

PAPER – I

Time : 3 hours
Max. Marks : 100

IMHT/D/12/15/I

Attempt all questions in order.
Each question carries 10 marks.

1. a) Define platelet storage lesions. (2)
b) Describe its clinical significance. (4)
c) Discuss various preventive measures for platelet storage lesions. (4)
2. a) Describe the mechanism of anemia of chronic renal failure. (5)
b) Discuss the management of anemia of chronic renal failure. (5)
3. a) Describe various subtypes of lymphocytes. (5)
b) Discuss the role of T lymphocytes in Transfusion Medicine. (5)
4. a) Describe iron metabolism in health. (5)
b) Discuss laboratory diagnosis of iron deficiency anemia in blood donors. (5)
5. a) Define cytokines. (2)
b) Classify cytokines & describe their functions. (5)
c) Enumerate their role in Transfusion Medicine. (3)
6. a) Describe the structure & functions of human immunoglobulins. (5)
b) Discuss secondary immune response and its significance in Transfusion Medicine. (5)
7. Describe laboratory diagnosis of G6PD deficiency and discuss its importance in Transfusion Medicine. 5+5
8. a) Describe synthesis of antigens in ABO blood group system. (5)
b) What is immunogenicity of blood group antigens? (3)
c) Discuss subgroups of A blood group. (2)
9. a) What is reticulated platelet? (2)
b) Describe methods for detection of reticulated platelets. (5)
c) Discuss its importance in platelet transfusion. (3)
10. a) Describe mechanism of drug induced autoimmune hemolytic anemia. (5)
b) Discuss laboratory diagnosis of drug induced auto-immune hemolytic anemia. (5)

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PAPER – II

Time : 3 hours

IMHT/D/12/15/II

Max. Marks : 100

Attempt all questions in order.

Each question carries 10 marks.

1. a) What is panagglutination? (2)
b) Discuss its laboratory diagnosis. (5)
c) Describe various types of panagglutination. (3)
2. a) Define transfusion probability, transfusion index and cross match ratio. (5)
b) What is their significance in Transfusion Medicine? (5)
3. a) What is reagent cell panels? (5)
b) Describe various requirements for preparation of reagent cell panels. (5)
4. a) What is passenger lymphocyte syndrome? (2)
b) Describe laboratory investigations. (4)
c) Discuss its management. (4)
5. a) What are the quality essential element in immunohematology laboratory? (7)
b) How will you validate a negative direct antiglobulin test result? (3)
6. a) What is ABO blood group discrepancy? (2)
b) What are the types of blood group discrepancy? (4)
c) Describe laboratory approach to a case of ABO discrepancy in a patient. (4)
7. a) Describe the mechanism of Heparin induced Thrombocytopenia. (HIT). (5)
b) Discuss laboratory diagnosis of HIT. (5)
8. Describe investigations & management of a 6 days old infant who is having petechiae with low platelet count. 10
9. a) Compare and contrast ABO hemolytic disease of newborn versus Rh hemolytic disease of new born. (5)
b) Describe antenatal management of a case of Rh hemolytic disease of new born. (5)
10. Discuss immunohematological monitoring in a case of ABO mismatched bone marrow transplantation. 10

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PAPER – III

Time : 3 hours
Max. Marks : 100

IMHT/D/12/15/III

Attempt all questions in order.
Each question carries 10 marks.

1. a) Describe the indications for fresh frozen plasma (FFP). (5)
b) Discuss factors affecting the quality of FFP. (5)
2. a) Define "Near Miss Events". (5)
b) Discuss strategies to prevent near miss events in blood Transfusion Medicine. (5)
3. a) Compare and contrast laboratory site leukodepletion and bed site leukodepletion. (3)
b) Describe process control of leukodepletion. (7)
4. Describe transfusion support in a case of orthoptic liver transplantation. 10
5. a) Describe pathogenesis of Thrombotic Thrombocytopenic purpura (T.T.P). (5)
b) Plan therapeutic plasma exchange in a case of T.T.P. (5)
6. a) Describe methods to estimate blood needs of a country. (5)
b) Discuss strategies to promote voluntary blood donation. (5)
7. a) Describe mutants of hepatitis B Virus. (5)
b) Discuss their importance in transfusion medicine in relation to blood safety. (5)
8. a) Describe cryopreservation of peripheral blood stem cells. (6)
b) Enumerate factors affecting the quality of cryopreserved stem cells. (4)
9. a) What is window period of infection? (2)
b) Mention types of window period. (2)
c) Discuss strategies to decrease window period. (6)
10. a) What is process flow mapping? (2)
b) What is the importance of flow mapping? (3)
c) Draw process flow map of your component laboratory. (5)

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PAPER – IV

Time : 3 hours
Max. Marks : 100

IMHT/D/12/15/IV

Attempt all questions in order.
Each question carries 10 marks.

1. a) Discuss the rationale for multi-component collection. (4)
b) Enumerate various combinations of multi-component collection. (2)
c) Describe donor selection criteria for multi-component collection. (4)
2. a) What is RFID (Radio frequency Identification) technology? (2)
b) Describe various technologies/ measures that are available to prevent identification errors in transfusion chain. (8)
3. a) Define 'Regenerative Medicine'. (2)
b) Enumerate potential clinical conditions where regenerative medicine plays role. (3)
c) Discuss role of Transfusion Medicine in regenerative medicine. (5)
4. a) What is hemovigilance? (2)
b) What are the prerequisites for setting up hemovigilance in a country? (4)
c) Discuss positive impact of hemovigilance across the world. (4)
5. a) Enumerate various bacteria that can contaminate blood & components. (3)
b) Discuss strategies for prevention of bacterial contamination of blood supply. (7)
6. Discuss the role of Transfusion Medicine consultant in perioperative hemostasis. 10
7. Describe methods for evaluation of platelet function defects. 10
8. a) Discuss Hospital Transfusion Committee. (5)
b) Describe the role of Hospital Transfusion Committee in promoting judicial use of blood in your hospital. (5)
9. a) Describe the principle of Polymerase Chain Reaction (PCR). (5)
b) Discuss the applications of PCR in Transfusion Medicine. (5)
10. a) Enumerate various blood derived hemostatic agents. (5)
b) Discuss applications of one of these agents in clinical practice. (5)
