

IMMUNOHEMATOLOGY AND TRANSFUSION MEDICINE

PAPER- I

Time : 3 hours

IHTM/D/11/15/I

Max. Marks : 100

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

1. Discuss the potentiators of antigen antibody reaction in blood banking serology and describe their uses. 5+5
2. Enumerate the human platelet antigens. Discuss their role in platelet refractoriness and ways to minimize the same. 3+5+2
3. Discuss the principles of flow cytometry using diagrams and flow charts. What are the uses of flow cytometry in current transfusion medicine practice? 5+5
4. Discuss the Hardy Weinberg principle and its application in blood banking. 5+5
5. Discuss in brief the complement system. Describe any two processes in blood banking involving the complement system. 5+5
6. Discuss neutrophil antigens and antibodies and its clinical significance. 5+5
7. Discuss the current standards of practice in bio-waste management of blood banks. 10
8. What are the current views on "homing" of stem cells and scientific evidence supporting the same? 5+5
9. Describe the molecular structure of HIV1 and 2 viruses using diagrams. Correlate the same to evolution of screening tests for HIV virus. 3+3+4
10. Discuss the cellular model of coagulation using diagrams and how charts. Describe its effect on current management of bleeding disorders. 2+3+5

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PAPER- II

Time : 3 hours

IHTM/D/11/15/II

Max. Marks : 100

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

Write short notes on:-

1. Design a blood and component centre for a 300 bedded tertiary care hospital meant solely for neonates and infants. 10
2. Describe various steps involved in pre-transfusion testing for a patient with positive auto control. 10
3. Discuss the current protocols of exchange transfusion and indications for the same. 5+5
4. Describe the current protocols for peripheral blood stem cell mobilization. What are their common and rarer side effects? 6+2+2
5. What is TAGvHD? Discuss its pathogenesis. How do you minimize the same in allogenic stem cell transplantation? 2+3+5
6. What are the common causes for donor deferral? Enumerate the conditions requiring permanent deferral and reasons for the same. 4+3+3
7. MNS blood group system. 10
8. Discuss the rare variants of Rh. What is their clinical significance? 6+4
9. a. What is rare blood donor? 3+7
b. Describe various essential elements in establishing donor registry in India.
10. a. Principles of molecular blood grouping 5+5
b. Discuss its advantages and disadvantages compared to serological blood grouping.

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PAPER- III

Time : 3 hours

IMHT/D/11/15/III

Max. Marks : 100

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

Write short notes on:-

1. a. What is intrauterine transfusion? 2+4+4
b. How will you select unit of blood for intrauterine transfusion?
c. Discuss its current status in management of Rh immunized patients.
2. What are the current guidelines for stem cell research in India? 10
3. Enumerate alternatives to plasma transfusion. What are their clinical uses? 3+7
4. Describe the identification, characterization and clinical uses of Mesenchymal Stem Cells (MSC's) 3+3+4
5. Stealth RBC's. 10
6. a. Describe principles of rapid tests for screening of transfusion transmitted infections. 6+4
b. Discuss its uses in blood banking.
7. Discuss the processes to improve the efficiency and quality assurance of component laboratories. 5+5
8. Discuss transfusion support in a neonate undergoing corrective surgery for a congenital heart disease. 10
9. Enumerate the complications of factor replacement therapy in a patient of Hemophilia A. How can you diagnose and overcome the same? 3+3+4
10. Define massive transfusion. What are Massive Transfusion Protocols (MTP'S)? How can you minimize the common side effects of massive transfusion? 2+4+4

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PAPER- IV

Time : 3 hours

IMHT/D/11/15/IV

Max. Marks : 100

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

Write short notes on:

1. Uses of recombinant Monoclonal Antibodies (MCA's) in current transfusion medicine practice. 10
2. Discuss class 1 and 2 indications of therapeutic plasma exchange (TPE). 5+5
3. Discuss red cell substitutes. 10
4. Discuss various points of care tests to reduce transfusion requirements in elective surgery. Enumerate the equipments used for the same. 7+3
5. Discuss the clinical and molecular biology criteria currently used to assess engraftment of stem cell products in recipients. 5+5
6. Use of plasticizers in modern blood banking. 10
7. Discuss ABO incompatible renal transplantation. Enumerate strategies to improve graft survival in the same. 7+3
8.
 - a. What are dendritic cells? 3+7
 - b. Discuss dendritic cell therapy in malignancies of head and neck area?
9. What is micro array technology? Discuss its application in Transfusion Medicine. 3+7
10.
 - a. Define electronic cross match. 4+6
 - b. Discuss its feasibility in our country.
