

1 (Sem-4) BV MHS 2

2025

MEDICAL LABORATORY AND MOLECULAR
DIAGNOSTIC TECHNOLOGY/MEDICAL
LABORATORY TECHNICIAN

Paper : MHS0400204

(Immunohematology and Blood Banking)

Full Marks : 45

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

1. Fill in the blanks : 1×5=5

- (a) The branch of science dealing with immunological and hematological aspects of blood is called _____.
- (b) The universal recipient blood group is _____.
- (c) The most immunogenic antigen in the Rh system is _____.
- (d) A reaction between antigen and antibody *in vitro* is known as _____.
- (e) The technique used for separating blood components is called _____.

(2)

2. Answer any *five* of the following questions :

2×5=10

- (a) Define immunohematology.
- (b) Write two objectives of blood transfusion.
- (c) Name two ABO blood group antigens.
- (d) What is the role of anti-D antiserum?
- (e) Mention two types of blood transfusion.
- (f) Mention any two transfusion-transmitted diseases.
- (g) Name two blood components obtained from whole blood.
- (h) Mention two screening criteria for blood donors.
- (i) Write the importance of a blood donor card.
- (j) What is serum grouping?

3. Answer any *four* of the following questions :

5×4=20

- (a) Write about the preparation and uses of fresh frozen plasma. 3+2=5
- (b) Explain the advantages of blood component therapy.

(3)

- (c) Define immunohematology and explain its importance in medical practice. 1+4=5
- (d) Explain the Rh blood group system and its significance in transfusion.
- (e) Explain cross-matching techniques in transfusion practice.
- (f) Explain the procedures involved in processing blood after donation.
- (g) Discuss the various methods used for histocompatibility testing.
- (h) Explain the causes, clinical features, and preventive measures of haemolytic disease of the newborn. 2+2+1=5

4. Answer any *one* of the following questions : 10

- (a) Explain the Coombs test procedure, its principle, types and clinical significance. 3+2+2+3=10
- (b) Describe the functions, design and working system of a modern blood bank. 3+3+4=10
- (c) Write in detail about the blood transfusion practices, including hazards and investigation of transfusion reactions. 5+3+2=10

(4)

- (d) Describe the HLA system in detail, including gene products, antigens, antibodies and clinical significance.

4+2+1+1+2=10

- (e) Explain the principle and clinical application of apheresis techniques.

4+6=10

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