

IMMUNO-HEMATOLOGY AND BLOOD TRANSFUSION

PAPER-I

Time: 3 hours
Max. Marks:100

IMHT/D/19/15/I

Important Instructions:

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

1. a) Genetics, structure and immunological basis of ABO blood groups. 8+2
b) Add a note on Cis AB, B(A) and A(B).
2. a) Structure and function of Hemoglobin A (Adult Hemoglobin). 5+5
b) Latest concept about "How cells sense and adapt to oxygen availability".
3. Stem cell plasticity and its use in Regenerative Medicine. 5+5
4. a) Explain how the fibrinolytic system removes clots. 6+4
b) List activators and inhibitors of plasmin.
5. Complement system and its applied importance in transfusion medicine. 5+5
6. Regulatory T cells (Tregs) and their role in immune tolerance. 5+5
7. a) What is reticulated platelet? 2+4+4
b) Methods of detection of reticulated platelets.
c) Its importance in platelet transfusion.
8. Hardy Weinberg principle and its applied importance in transfusion medicine. 5+5
9. a) Principles and uses of flow cytometry in current transfusion medicine practice. 6+4
b) Add a note on "improved quantitative detection of biotin-labeled red blood cells by flow cytometry".
10. Classification of different study types in medical research. 10
