

**IMMUNO-HEMATOLOGY AND BLOOD TRANSFUSION**

**PAPER-IV**

Time: 3 hours  
Max. Marks:100

IMHT/D/19/15/IV

**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. List the essential records to be maintained by a blood bank and discuss the principles of document control. 5+5
2. a) Indications and principle of Extra Corporeal Photopheresis. 5+5  
b) Discuss its efficacy in the treatment of graft-versus-host disease.
3. Quality indicators in blood transfusion practice. 10
4. Prediction of fetal blood group and platelet antigens from maternal plasma using next generation sequencing. 10
5. a) Principles of blood inventory management. 5+5  
b) Discuss Issuable Stock Index (ISI) and Wastage as Percentage of Issue (WAPI) in relation to blood inventory management.
6. Automation in immunohematology – describe the different analytic modalities for immunohematology testing with their relative merits and demerits. 10
7. The reference range for hemoglobin (Hb) on a control sample is  $13.0 \pm 0.4$  g/dL. A Hb determination is performed 5 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. 10
8. Blood Pharming. 10
9. a) Biosafety measures to prevent blood bank personnel from acquiring infections on exposure to potentially infectious blood components. 7+3  
b) Add a note on post-exposure prophylaxis after needle-stick injury with HIV positive blood donor.
10. Informed consent and ethical issues in transfusion practice. 5+5

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