

**PATHOLOGY**

**PAPER-IV**

Time: 3 hours  
Max. Marks:100

PATH/D/20/32/IV

**Important Instructions:**

- *You are provided with 5 answer sheet booklets. Each individual answer sheet booklet consists of 10 pages excluding the covering jackets.*
- *Answers to all the questions must be attempted within these 5 answer sheet booklets which must be later tagged together at the end of the exam.*
- *No additional supplementary answer sheet booklet will be provided.*
- *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. Discuss in detail the role of automation in Hematology. Describe the principles of functioning, parameters measured, advantages, disadvantages and various erroneous results encountered in haematology analyzers. 10
2. Define Haemolytic anaemia. Enumerate the various causes for haemolytic anaemia. Discuss in detail the laboratory approach to a case of hemolytic anaemia. 10
3. a) Ferrokinetics. 5+5  
b) Minimal residual disease in leukemia.
4. Classify myelodysplastic Syndrome. Discuss in detail its pathogenesis and laboratory diagnosis. 3+(3+4)
5. Classify blood transfusion reaction. Discuss in detail the its pathophysiology, complications and laboratory approach. 10
6. a) Cytochemistry in diagnosis of acute leukaemia. 5+5  
b) Supravital stains in Hematology.
7. a) Unstable haemoglobins. 5+5  
b) Jak-2 mutations.
8. a) Hairy cell leukaemia. 5+5  
b) Essential thrombocythemia.
9. a) Artificial blood. 5+5  
b) LJ chart.
10. a) Haematogones. 5+5  
b) Monoclonal gammopathy of undetermined significance.

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