

**HEMATOLOGY**

PAPER-I

HEMAT/D/18/48/I

Time: 3 hours  
Max. Marks:100

**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. Platelets: 4+3+3
  - a) Describe the basic structure and function.
  - b) Pitfalls of platelet count using automated cell counters.
  - c) Causes of thrombocytopenia in the Intensive Care Unit.
2. An 18-year-old woman has presented with fever and multiple purpuric spots all over the body for 2 weeks 5+5
  - a) How will you approach to arrive at a diagnosis?
  - b) What would be your major therapeutic options?
3. A 78-year-old man presents to the emergency room in a confused state and oliguria. There is a history of severe back pain and pallor. 5+5
  - a) What would be the immediate five measures to salvage the patient?
  - b) How would you make a diagnosis in this gentleman once he is resuscitated?
4. Complement pathway: 3+4+3
  - a) Role in human physiology.
  - b) Role in etiopathogenesis of blood disorders.
  - c) How can blocking the pathway treat certain blood disorders?
5. Bone marrow failure syndromes: 4+4+2
  - a) Etiopathogenesis of congenital bone marrow failure syndromes.
  - b) What are the clinical clues you will look for to diagnose congenital bone marrow failure syndromes?
  - c) What is the role of anabolic steroid in treating these disorders?
6. Acute Myeloid Leukemia (AML) in the elderly: 3+4+3
  - a) Is the disease biology different than that in young patients?
  - b) What are the prognostic implications of the mutations detected in AML?
  - c) How to assess fitness in the elderly to guide your AML therapy? P.T.O.

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7. Bleeding in the neonate: 3+3+4  
a) Why is it difficult to interpret the laboratory coagulation data in the neonate?  
b) What are the diseases which commonly lead to bleeding in the neonate?  
c) What would be your diagnostic approach in such a situation?
8. At midnight, a 21-year-old man with a diagnosis of sickle cell disease presents with severe chest pain. 5+5  
a) How would you evaluate the patient in the emergency room?  
b) What would be your short term and long term therapeutic measures?
9. Designing a clinical trial in Chronic Lymphocytic Leukemia (CLL): 3+3+4  
a) Which drugs would you choose as the gold standard for comparison today and why?  
b) To look at efficacy of a new molecule, what would be the change in outcomes you would look for?  
c) What would be the major safety issues which you would monitor?
10. a) What are the different methods for MRD monitoring in acute leukemias? 5+5  
b) What are the problems in MRD monitoring of Acute Myeloid Leukemia (AML)?

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