CLINICAL HAEMATOLOGY

PAPER-I

Time: 3 hours
Max. Marks:100

HEMAT/D/20/48/I

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. a) Describe the telomeropathies in haematological practice. 4+4+2
   b) Describe the laboratory methods of telomere length analysis.
   c) Enumerate drugs modulating telomere length or function in clinical Haematology.

2. a) Define Epigenetics. 2+4+4
   b) Mention different types of histone modifications.
   c) Name Histone deacetylase inhibitors and their role in Haematology.

3. A 10-year-old girl is to undergo an elective tonsillectomy. The past history reveals significant bleeding several hours after dental extraction. 5+5
   a) Discuss the clinical and laboratory approach to diagnosis.
   b) What are the clinical and preventive measures to be taken in the perioperative period for this patient?

4. a) What are the internal and external quality checks for ensuring accuracy of MRD assessment in Haematology practice? 4+4+2
   b) Discuss the clinical role of MRD in the setting of acute lymphoblastic leukaemia.
   c) Describe in brief the difference in 4 Vs 10 Colour flow cytometry.

5. a) Role of GATA gene in hematolymphoid malignancies. 5+5
   b) Role of targeting miRNA in malignancies.

6. a) Describe the iron transport mechanism and homeostasis in human body. 5+5
   b) Role of Hepcidin in modern Haematology.

P.T.O.

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7. A 3-year-old child presents with recurrent infections with a probable hematological cause. Discuss: 2+4+4
   a) Differential diagnosis for hematological causes.
   b) Diagnostic approach in such patients.
   c) Management strategies.

8. a) Describe different phases of clinical trials. 5+5
   b) Describe the sample size calculation and statistical analysis that you will perform for a study to compare a new drug with Eltrombopag in the treatment of immune thrombocytopenia.

9. a) Describe the diagnosis and management of alpha-thalassemia. 4+3+3
   b) Write a brief note on hereditary persistence of fetal hemoglobin.
   c) Write a brief note on Crizanlizumab.

10. a) Describe the anatomy, histology and physiological function of spleen. 5+2+3
    b) What is pitted erythrocyte and how does it correlate with splenic function?
    c) Peripheral smears in post splenectomy state.

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