IMMUNO HAEMATOLOGY AND BLOOD TRANSFUSION

PAPER-II

Time: 3 hours IMHT/D/20/15/II
Max. Marks:100

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) A 26-year-old male underwent splenectomy, during the procedure he was started with a packed red cell transfusion, as soon as a few ml was transfused the anesthetist noticed fall in blood pressure, surgeon observed diffuse oozing at the surgical site and pinkish red color urine in the catheter. Immediately the transfusion was stopped, necessary investigations were done and appropriate treatment was given. 7+3

   b) Explain in detail the type of adverse reaction, its pathophysiology, clinical manifestations, laboratory investigations and management of the patient. The preventive measures to be taken to avoid recurrence of such adverse events in future.

2. Explain the steps involved in pre-transfusion compatibility testing in general. Add a note on the same in neonatal transfusion. 7+3

3. "Type and Screen Policy" should be implemented in place of conventional cross match. Critically analyze this statement. 10

4. Regarding management of a case of acute leukemia on intense chemotherapy with vancomycin-resistant *Enterococcus* sepsis, answer the following: 2+5+3
   a) Blood component to be transfused.
   b) Donor preparation, collection, Storage process, minimum expected count per unit to be collected, indications and adverse events-if any following transfusion of the chosen component.
   c) Its therapeutic potential in neonatal infections.

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5. a) List the blood components and plasma derivatives prepared from whole blood. 3+3+4
   b) What are the precautions to be observed in the preparation of various blood components?
   c) Explain the procedure of cryoprecipitate preparation, its quality control & indications.

6. Explain the process of collecting shed autologous blood (cell salvage), its processing, re-administration, indications and contraindications. 4+2+2+2

7. A 60-year-old male had packed red cell transfusion following an orthopedic surgery. On post transfusion day 10, he had sudden onset of fever, skin rash, pancytopenia, abnormal liver function and diarrhea. The donor of the transfused packed red cell was his son. The patient died in spite of rigorous treatment. 2+4+2+2
   a) What is the most probable diagnosis?
   b) Explain the cause, pathophysiology, clinical manifestations, treatment and prognosis of the condition diagnosed. Preventive measures to be adopted.
   c) How do you confirm the diagnosis?
   d) Risk association based on medical condition, component infused, and medication exposures.

8. How will you diagnose a case of cold agglutinin disease? How do you proceed to identify compatible red cell units for a patient with cold agglutinins in her/his blood? 4+6

9. Explain about polyagglutination. Discuss the laboratory diagnosis of polyagglutination. 5+5

10. Discuss the evidence based approach in use of convalescent plasma therapy in Covid-19 patients. Also enumerate the criteria for a potential convalescent plasma donor and a potential recipient. 6+4

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