



AUSTRALIAN INSTITUTE OF MEDICAL SCIENTISTS

FELLOWSHIP EXAMINATION

TRANSFUSION MODULE I

Patient Based Transfusion Science

INSTRUCTIONS TO CANDIDATE

Time allowed is three (3) hours

Answers should be written in the answer book provided, writing on the right hand page only. The facing page may be used for rough work if desired

The examination consists of:

- 2 essay style questions; each question is worth 35 marks.
- 20 short answer questions; each question is worth 5 marks.

ALL QUESTIONS SHOULD BE ATTEMPTED

There will be an initial reading time of fifteen minutes, during which no writing will be permitted.

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SHORT ANSWER QUESTIONS

20 Questions - each question is worth 5 marks

All questions should be attempted

- Q1.** List five (5) factors that influence the clinical significance of red cell alloantibodies.
- Q2.** Write brief notes on polyagglutination, its causes and investigation.
- Q3.** Name three (3) blood group systems located on chromosome 1.
- Q4.** Briefly outline the mechanism of immune mediated extravascular haemolysis.
- Q5.** What is the difference in serological behaviour between anti - Leb^h and anti - Leb^l?
- Q6.** A group A+ patient requiring transfusion has anti- E and anti- Fya. What percentage of your available group A+ red cell stock would you expect to be compatible?
- Q7.** Outline the activities that should be monitored by a hospital based haemovigilance programme.
- Q8.** List five (5) possible causes of mixed field agglutination in blood grouping and antibody screening tests.
- Q9.** Name three (3) technologies available for automated pretransfusion testing.
- Q10.** Write brief notes on current theories for the mechanism(s) responsible for drug induced immune haemolytic anaemia.
- Q11.** List the IgG subclasses in decreasing order of complement binding capability.
- Q12.** Write brief notes on Rh(D) variants.
- Q13.** How does Haemolytic Disease of the Newborn due to anti - K differ from that caused by anti -D?

- Q14.** The NPAAC “Requirements for Transfusion Laboratory Practice “document cites eight standards for quality management. Outline five of these.
- Q15.** Outline possible causes for clinical reactions to platelet transfusion.
- Q16.** Why does ABO incompatibility between mother and foetus in group O mothers usually cause only mild Haemolytic Disease of the Newborn?
- Q17.** Briefly outline the genetic and biochemical basis of the Lewis blood group system and its relationship to ABH secretion.
- Q18.** Write brief notes on possible mechanisms involved in transfusion induced immunomodulation.
- Q19.** List three (3) cellular assays that have been used to assess the clinical significance of red cell antibodies.
- Q20.** Write brief notes on the major features of Chido/Rogers antibodies.

SAMPLE EXAM

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ESSAY ANSWER QUESTIONS

2 Questions - each question is worth 35 marks
All questions should be attempted

Question 1

A patient has been referred to your hospital from a regional centre with haemolytic anaemia and a history of recent transfusion. The Direct antiglobulin test is positive and the patients' plasma reacts with all cells on a red cell panel.

Discuss the possible serological scenarios that may prevail and the considerations, procedures and processes you would undertake to elucidate the problem and facilitate further transfusion if required.

Question 2

As scientist in charge of a tertiary hospital transfusion laboratory you are to have installed new comprehensive transfusion laboratory software to replace an existing programme. Describe the functional requirements you would expect from the software and the validation processes you would undertake to test the functionality.

END OF EXAMINATION