

UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES
FOURTH YEAR SECOND SEMESTER EXAMINATION- SEPTEMBER 2018

MLSIH 4233 IMMUNOHAEMATOLOGY
PAPER-II

Date: 18.09.2018

Time: 2 1/2 Hours

ANSWER ALL EIGHT QUESTIONS.

1.
 - 1.1 List the main factors affecting the following stages of red cell agglutination.
 - 1.1.1 Sensitization of Red blood cells (15 Marks)
 - 1.1.2 Agglutination of red cells (15 Marks)
 - 1.2 Why homozygous cells should be used in antibody detection? (20 Marks)
 - 1.3 Describe the standardized grouping system for the recording of agglutination. (30 Marks)
 - 1.4 What is autologous control and its purpose? (20 Marks)

2.
 - 2.1 What is the test to be performed to identify the amount of Feto- maternal hemorrhage? (10 Marks)
 - 2.2 What further action should be taken following the detection of a 37°C Indirect Antiglobulin Test (IAT) reactive antibody in a maternal sample? (20 Marks)
 - 2.3 Write the principle and application of the Direct Antiglobulin Test (DAT) (30 Marks)
 - 2.4 What are the steps and purposes of each step in IAT? (40 Marks)

3.
 - 3.1 List the advantages of blood components preparations. (30 Marks)
 - 3.2 List the routine and special red cell preparations prepared from whole blood donations. (30 Marks)
 - 3.3 List the quality parameters of
 - 3.3.1. Red Cell concentrate (RCC) (10 Marks)
 - 3.3.2. Platelet concentrates (10 Marks)
 - 3.3.3. Fresh Frozen Plasma (10 Marks)
 - 3.4. List the conditions in which the frozen red cells are used? (10 Marks)

4.
 - 4.1 Write the steps involved in the procedure of tube antibody screening test. (30 Marks)
 - 4.2 Write short notes on red blood cell reagents. (20 Marks)
 - 4.3 List two (2) enhancement reagents used in Antibody screening test and mention their actions. (20 Marks)
 - 4.4 What is "dosage effect" and give examples of blood groups that shows dosage effects. (30 Marks)

- 5.
- 5.1. What is meant by quality controls? (20 Marks)
- 5.2 List the mandatory tests carried out on all blood donations. (30 Marks)
- 5.3 What is meant by window period in Transfusion Transmission Infections? (10 Marks)
- 5.4 What are the steps taken to reduce bacterial contamination of blood components? (40 Marks)
- 6.
- 6.1 What is the major cause of severe immediate type Haemolytic Transfusion Reaction? (10 Marks)
- 6.2 Explain the mechanism causing a delayed Haemolytic Transfusion Reaction. (25 Marks)
- 6.3 What are the recommended pre transfusion laboratory procedures? (20 Marks)
- 6.4 What is the advantage of using broad spectrum Antihuman Globulin reagents (AHG). (25 Marks)
- 6.5 List **four (4)** basic steps in the PCR test used for Hepatitis C testing. (20 Marks)
7. Quality management of Clinical Laboratory is very important for reliable results.
- 7.1. Briefly outline the sample quality requirements for flowcytometry. (20 Marks)
- 7.2. Briefly discuss the principle of flowcytometry analysis. (30 Marks)
- 7.3. Outline the applications of flowcytometry in haematology. (30 Marks)
- 7.4. What do you understand by the term preventive maintenance of an automated analyzer? (20 Marks)
- 8.
- 8.1. Discuss critically the use of Activated Partial Thromboplastin Time (APTT) and its limitations to monitor heparin therapy. (40 Marks)
- 8.2. Outline how Prothrombin Time (PT) is prolonged due to Warfarin therapy. (40 Marks)
- 8.3. Write an account on International Normalized Ratio (INR). (20 Marks)