



UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES
SECOND YEAR FIRST SEMESTER EXAMINATION- JANUARY 2016
MLSHE 2125 HAEMATOLOGY I
PAPER II

DATE: 21.03.2016

TIME: 02 Hours

ANSWER ALL EIGHT QUESTIONS

1. Appropriate collection and handling of specimen is the first step in the analytical procedure
 - 1.1. List three (3) anticoagulants commonly used in sample collection in the haematology laboratory. (15 marks)
 - 1.2. Mention one haematological investigation for each anticoagulant mentioned in 1.1. (15 marks)
 - 1.3. Briefly describe the mode of action of the anticoagulants you mentioned in 1.1. (50 marks)
 - 1.4. List five (5) causes of misleading results caused by discrepancies in specimen collection and handling. (20 marks)

2. Automated techniques are widely used in the haematology laboratory.
 - 2.1. List three (3) principles used by automated blood cell counters. (15 marks)
 - 2.2. Briefly describe one principle that you mentioned in 2.1. (55 marks)
 - 2.3. List three (3) advantages and three (3) disadvantages of automated techniques over manual techniques for performing blood counts. (30 marks)

3.
 - 3.1. List three (3) difficulties that could be encountered during the preparation of blood film in a patient with anaemia. (30 marks)
 - 3.2. List two (2) Romanowsky stains. (10 marks)
 - 3.3. Briefly describe how you would stain a blood film by using any one (1) of the stains that you mentioned in 3.2. (45 marks)
 - 3.4. List three (3) factors which affect ideal staining of a blood film. (15 marks)

4.
 - 4.1. Briefly define anaemia. (15 marks)
 - 4.2. Briefly describe three (3) of the most prominent abnormalities you would observe in the red cells in following disease conditions.
 - 4.2.1. Iron deficiency anaemia (30 marks)
 - 4.2.2. Haemolytic anaemia (30 marks)
 - 4.3. Briefly classify the causes of anaemia. (25 marks)

5.
 - 5.1. Briefly describe the functions of a neutrophil. (30 marks)
 - 5.2. List three (3) causes of neutrophil leucocytosis. (15 marks)
 - 5.3. Briefly describe three (3) morphological changes that are seen in neutrophils in disease conditions. (15 marks)
 - 5.4. Briefly mention the morphological appearance of reactive lymphocyte in blood film. (30 marks)
 - 5.5. Mention two (2) disease conditions where reactive lymphocytes are seen in a blood film. (10 marks)

6. Examination of blood film is essential for the identification of parasites in blood.
 - 6.1. Briefly describe how you would prepare and stain the thick film for the detection of malarial parasites. (50 marks)
 - 6.2. Tabulate four (4) morphological features that would differentiate *Plasmodium vivax* and *Plasmodium falciparum*. (40 marks)
 - 6.3. Mention one (1) advantage of examining thick blood film in the identification of parasites. (10 marks)

7. Manual counting of blood cells is an acceptable alternative to an automated blood count.
 - 7.1. Mention the diluting fluid and the dilution factor used in manual platelet counting. (20 marks)
 - 7.2. Briefly describe how you would perform manual platelet counting using the Improved Neubauer counting chamber. (60 marks)
 - 7.3. List four (4) technical errors that may occur with the above technique. (20 marks)

8. Write short notes on
 - 8.1. Reticulocyte counting (40 marks)
 - 8.2. Pseudo thrombocytopenia (20 marks)
 - 8.3. Red cell inclusions (40 marks)