UNIVERSITY OF JAFFNA, SRI LANKA

BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES

SECOND YEAR FIRST SEMESTER EXAMINATION- SEPTEMBER 2018

MLSHE 2125 HAEMATOLOGY I

PAPER II

DATE: 20.09.2018 **TIME: 02 Hours**

ANSWER ALL EIGHT QUESTIONS

1.

1.1. Name the anticoagulants which are routinely used for the following tests in haematology laboratory and mention the recommended concentration requirements and ratios as appropriate for each.

1.1.1. Full Blood Count (FBC) (05 marks)

1.1.2. Prothrombin time (05 marks)

1.1.3. Osmotic Fragility Test (05 marks)

1.1.4. Reticulocyte count (05 marks)

1.2. Mention the mode of action of each anticoagulant you mentioned in 1.1. (30 marks)

1.3. You are requested to prepare 100 numbers of EDTA anticoagulated sample collection tube for FBC in your laboratory. Briefly explain the steps involved in the preparation of EDTA tube manually (show your calculations where required). (50 marks)

2.

2.1. Define the following

2.1.1. True thrombocytopenia (10 marks)

2.1.2. Factitious (spurious) thrombocytopenia (10 marks)

2.2.

2.2.1. Describe the typical morphology of eosinophil (15 marks)

2.2.2. List four (04) causes for Eosinophilia. (20 marks)

2.3. A laboratory receives an EDTA sample for FBC in the morning which had been collected previous day morning in a collection centre far away from Jaffna. It was transported in a cardboard box in a bus and was stored until tested at room temperature. The laboratory has no air conditioning. Briefly describe the morphological changes you would expect in the above sample. (45 marks)

3.

3.1. What is meant by Erythrocyte Sedimentation Rate (ESR)? (10 marks)

3.2. Name the method for measuring the ESR recommended by the International Council for Standardization in Haematology (ICSH). (05 marks)

3.3. Describe how you would perform ESR by using the method mentioned in 3.2. (45 marks)

3.4. List four (04) pathological causes where you got high ESR results. (20 marks)

3.5. List four (04) causes for erroneous ESR results. (20 marks)

4.

4.1. Briefly describe how the WBC- Differential counting is done by the principle of flowcytometry in a five part automated haematology analyser. (65 marks)

4.2. List two (02) causes for the erroneous counting in the automated haematology analysers in each of the following.

4.2.1. Total WBC counting (10 Marks)

4.2.2. RBC counting (10 Marks)

4.3. List three (03) instances where the automated haematology analysers need to be calibrated. (15 marks)

5.

5.1. Define Anaemia. (15 marks)

5.2. Briefly mention the abnormalities of morphology of blood cells you could observe in the blood film in the following.

5.2.1. Iron deficiency anaemia (15 Marks)

5.2.2. Vitamin B 12 deficiency (15 marks)

5.3. List four (04) causes for macrocytosis. (20 Marks)

5.4. Name the reference method for haemoglobin estimation. (05 Marks)

5.5. Write the principle behind the method mentioned in 5.4. (30 marks)

6.

6.1. State how you would classify haemolytic anaemia. (30 Marks)

6.2. List four (04) causes for intravascular haemolysis. (20 Marks)

6.3. List four (04) tests useful to identify intravascular haemolysis and expected findings in intravascular haemolysis. (30 Marks)

6.4. Briefly explain how you would perform reticulocyte count. (20 Marks)

7.

7.1. Name two (02) Romanowsky stains routinely used in haematology laboratory to examine the blood cell morphology. (10 Marks)

7.2. Briefly explain the principle of Romanowsky stain. (40 Marks)

7.3. Thick and thin films are usually prepared for the examination of parasites in haematology laboratory.

7.3.1. Briefly explain how you would prepare thick film for parasitic examination. (40 Marks)

7.3.2. State one advantage and one disadvantage on examining thin film for parasitic examination. (10 Marks)

8. Write short notes on:

8.1. Red cell indices (50 Marks)

8.2. Microhaematocrit method (50 Marks)