UNIVERSITY OF JAFFNA, SRI LANKA

BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES

SECOND YEAR FIRST SEMESTER EXAMINATION- AUGUST 2016

MLSHE 2125 HAEMATOLOGY I

PAPER II

DATE: 11.08.2016 **TIME: 02 Hours**

ANSWER ALL EIGHT QUESTIONS

1. Erythrocyte Sedimentation Rate (ESR) is widely used in patient management & treatment though it is a non-specific test.
   1.1. Mention the anticoagulant used for ESR and the ratio of anticoagulant to blood. (20 Marks)
   1.2. List three (3) causes for increased value of ESR. (15 Marks)
   1.3. List three (3) causes for decreased value of ESR. (15 Marks)
   1.4. How would you choose an appropriate place in your laboratory to setup an ESR rack. Mention the reasons for the place of choice. (50 Marks)

2. Automated blood counting techniques are widely used in haematology.
   2.1. List two errors encountered in automated blood counting techniques in each of the following parameters, mention the possible causes for each error that you mentioned.
      2.1.1. Red cell count
      2.1.2. White cell count
      2.1.3. Platelet count (60 Marks)

   2.2. How would you rectify the errors you mentioned? (40 Marks)

3. A 32 year old woman has Hb- 8 mg/dl, RDW- 29%, RBC- $3X10^6/\mu l$, MCV-70 fl, and MCH-26 pg

3.1. Mention the morphological type of anaemia that she has. (20 Marks)

3.2. List three (3) causes for the morphological type of anaemia mentioned above. (30 Marks)

3.3. Mention the most common cause for the anaemia with this patient. (20 Marks)

3.4. List three (3) abnormalities that you expect to see in the blood picture. (30 Marks)

4. A Leishman stain powder was purchased by your laboratory from a new manufacturer. As a Medical laboratory technologist you are requested to prepare the Leishman stain to assess suitability.

4.1. List three (3) factors you should consider before you prepare the stain? (15 Marks)

4.2. Briefly describe how you would prepare the stain? (45 Marks)

4.3. Briefly mention the principle behind the Leishman staining. (20 Marks)

4.4. List four (4) reasons you will consider the stain unsuitable for routine use. (20 Marks)

5.

5.1. Mention three (3) stains used to perform reticulocyte counting. (30 Marks)

5.2. Briefly describe any one (1) of the staining methods mentioned in 5.1. (40 Marks)

5.3. List three (3) diseases where reticulocyte count is increased. (30 Marks)

6.

6.1. Describe how you would set up the microscope illumination to perform a manual platelet count using a hemocytometer. (40 Marks)

6.2. Describe the routine maintenance of a light microscope. (60 Marks)

7.

7.1. Mention two (2) reasons for the calibration of automated blood cell counters. (40 Marks)

7.2. List three (3) methods that are used to calibrate automated blood cell counters. (30 Marks)

7.3. Explain the different values obtained in haematocrit (HCT) by manual and automated blood cell counters. (30 Marks)

8.

8.1. What is meant by quality assurance? (20 Marks)

8.2. Briefly describe the following.

8.2.1. Internal Quality Control (IQC). (20 Marks)

8.2.2. External Quality Control (EQC). (20 Marks)

8.2.3. National External Quality Assessment Scheme (NEQAS). (20 Marks)

8.2.4. International External Quality Assessment Scheme (IEQAS). (20 Marks)