**UNIVERSITY OF JAFFNA, SRI LANKA**

**BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES**

**FIRST YEAR SECOND SEMESTER EXAMINATION- AUGUST 2016**

**MLSIA1205 INSTRUMENTAL ANALYSIS**

**DATE: 11.08.2016** **TIME: 2 Hours**

**ANSWER ALL SIX QUESTIONS**

**ANSWER PART A AND PART B IN SEPARATE ANSWER BOOKS**

**PART A**

1. 1.1 1.1.1 Briefly discuss the working principle of an autoclave. (15 Marks)

   1.1.2 List the laboratory uses of an autoclave. (20 Marks)

   1.1.3 What is the importance of strong pressure vessel in an autoclave? (15 Marks)

   1.2 Describe the working principle of a magnetic stirrer. (50 Marks)

2. 2.1 Briefly describe the working principle of a centrifuge. (20 Marks)

   2.2 List the different types of rotors used in centrifuges and explain their uses. (40 Marks)

   2.3 Briefly describe the steps involved in the separation of serum from a blood sample. (20 Marks)

   2.4 List the laboratory uses of a centrifuge other than its use in serum separation. (20 Marks)

3. 3.1 3.1.1 List the different technologies used in weighing balances. (15 Marks)

   3.1.2 Briefly describe the working principle of a weighing balance mentioned in 3.1.1 related to the electrical films. (30 Marks)

   3.2 Briefly describe the working principle and calibration of a pH meter. (55 Marks)

## PART B

4. 4.1 Briefly explain the working principle of the followings.

   4.1.1. Flame Photometer (30 Marks)

   4.1.2. Mass spectrometer (30 Marks)

   4.2 Give five uses Mass spectrometer. (25 Marks)

   4.3 List the main components of a typical Fluorescence Spectrometer. (15 Marks)

5. 5.1 Briefly describe the principle of fluorescence microscope. (30 Marks)

   5.2 List the uses of fluorescence microscope in a clinical laboratory. (30 Marks)

   5.3 Write briefly on the care to be taken while handling a Light microscope, with reasons. (40 Marks)

6. Write notes on

   6.1 Class II Biological safety cabinet (50 Marks)

   6.2 Rotary microtome (50 Marks)