

UNIVERSITY OF JAFFNA, SRI LANKA  
BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES  
FIRST YEAR SECOND SEMESTER EXAMINATION- JULY 2015  
MLSIA 1205 INSTRUMENTAL ANALYSIS

DATE: 13.07.2015

TIME: 2 Hours

ANSWER ALL SIX QUESTIONS

1.
  - 1.1. List the different classes of biological safety cabinet and describe each class(70 marks)
  - 1.2 Describe the advantages and disadvantages of using each class of biological safety cabinet (30 marks)
  
2.
  - 2.1 List five installation requirement for an Analytical balance (20 marks)
  - 2.2 Briefly explain how you would calibrate a newly purchased Analytical balance in the laboratory (60 marks)
  - 2.3 Briefly describe the routine maintenance of an Analytical balance (20 marks)
  
3. Briefly explain the working principle of the following instruments
  - 3.1 Rocking microtome (25 marks)
  - 3.2 UV-Visible spectrophotometer (25 marks)
  - 3.3 Water distillation apparatus (25 marks)
  - 3.4 Fluorescence spectrophotometer (25 marks)
  
4.
  - 4.1 List the information that should be written in a general specification sheet of an equipment (40 Marks)
  - 4.2 Discuss the precautions that should be taken during centrifugation (40 Marks)
  - 4.3 List the probable causes and troubleshooting when an incubator displays heating errors. (20 Marks)

5.

5.1 Describe the differences between the working principle of Transmission Electron microscope (TEM) and Scanning Electron Microscope (SEM) (40 Marks)

5.2 List the parts of a Light microscope and briefly describe their function (30 Marks)

5.3 Write briefly on care to be taken when handling a Light microscope (30 Marks)

6. Write notes on

6.1 Cryostat (30 Marks)

6.2 Sterilizing glassware by using autoclave (40 Marks)

6.3 Working principle of waterbath (30 Marks)