



UNIVERSITY OF JAFFNA, SRI LANKA
FACULTY OF ALLIED HEALTH SCIENCES

FIRST YEAR SECOND SEMESTER EXAMINATION IN BScHons (MLS) – 2022
MLSMT 1213 MEDICAL LABORATORY TECHNOLOGY II

Date: 14.06.2024

Time: 2 Hours

Answer all Six Questions.

1. 1.1 Define the followings,
 - 1.1.1. Potentiometry (15 Marks)
 - 1.1.2. Intersystem crossing (15 Marks)
 - 1.1.3. Carryover in automation (15 Marks)
- 1.2 Explain the working principle of Nephelometry. (25 Marks)
- 1.3 Give the clinical applications of Turbidimetry. (30 marks)

2. 2.1 Describe the working principle of,
 - 2.1.1 Fluorescence spectroscopy (20 Marks)
 - 2.1.2 Flame photometry (20 Marks)
 - 2.1.3 Freeze drying or lyophilization (20 Marks)
- 2.2 Explain the steps of calibrating a UV-visible spectrophotometer. (40 Marks)

3. 3.1 Outline the principle of Paper chromatography. (20 Marks)
- 3.2 Explain the steps of performing a paper chromatography to separate amino acids. (60 Marks)
- 3.3 Give the applications of Thin layer chromatography. (20 Marks)

4. 4.1 Give the basic principle of,
 - 4.1.1. Size exclusion chromatography (20 Marks)
 - 4.1.2. Cation exchange chromatography (20 Marks)
- 4.2 A protein X that has an isoelectric pH of 6.0 is requested to separate from a crude plant extract. Explain how the protein X can be separated using cation exchange chromatography. (60 Marks)

5. 5.1 State the basic principle of electrophoresis. (20 Marks)
- 5.2 Explain how Agarose Gel Electrophoresis is carried out to separate DNA molecules. (60 Marks)
- 5.3 State the importance of using Ethidium Bromide in Agarose Gel Electrophoresis. (20 Marks)
6. Describe the advantages and limitations of the followings,
- 6.1 Ion-selective electrodes. (30 Marks)
- 6.2 Flame photometry. (30 Marks)
- 6.3 Total laboratory automation. (40 Marks)