



THE OPEN UNIVERSITY OF SRI LANKA

FACULTY OF HEALTH SCIENCES

DEPARTMENT OF MEDICAL LABORATORY SCIENCES

ACADEMIC YEAR 2018/2019 – SEMESTER I

BACHELOR OF MEDICAL LABORATORY SCIENCE HONOURS

MDU5407 -LABORATORY AUTOMATION & INSTRUMENTATION

FINAL EXAMINATION

DURATION: THREE HOURS

DATE: 26th MARCH 2019

TIME: 09.30 AM – 12.30 PM

Part B: Structured Essay Questions (40 marks)

Q 1

1.1 Using a labelled diagram give essential parts of a flame photometer. (2 marks)

1.2 Explain the functions of basic components of a flame photometer. (3 marks)

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1.3 Why Lithium internal standard is used in flame photometry? (3 marks)

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Index no:

1.4 What is the meaning of atomic excitation? (2 marks)

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(Total – 10 marks)

Q2

2.1 Draw a diagram to show the components inside a spectrophotometer. (2 marks)

2.2 Explain the functions of each component briefly. (3 marks)

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Index no:

2.3 Write a short note regarding the care and maintenance of the component used to feed the sample to the instrument. (3 marks)

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2.4 What are the differences between photometer and spectrophotometer? (2 marks)

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(Total – 10 marks)

Index no:

Q3

3.1 What are the commonly used sorbents in thin layer chromatography? (3 marks)

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3.2 Draw diagram to show the parts of paper chromatography set up. (3 marks)

3.3 What is the use of Ninhydrin reaction? (2 marks)

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Index no:

3.4 What is ion exchange chromatography? (2 marks)

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(Total – 10 marks)

Q 4

4.1 Why pipette calibration is required? (2 marks)

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4.2 Give a list of instruments required for pipette calibration. (2 marks)

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Index no:

4.3 Briefly explain the steps involved in pipette calibration. (3 marks)

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4.4 What are the contents of a pipette calibration certificate? (3 marks)

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(Total – 10 marks)

Part C: Essay type questions (30 marks)

Q 1. Explain the principle of latex agglutination technique using a labeled diagram. (15 marks)

Q 2. Explain the theory of protein electrophoresis (15 marks)

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Index no:00038