



RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

B.Sc. (four - year) Degree in Applied Sciences
Fourth Year –Semester II Examination –February/March 2019

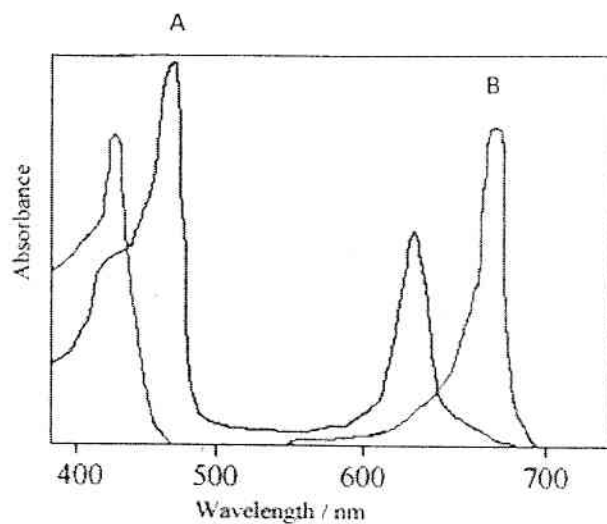
MIB 4205 – ANALYTICAL TECHNIQUES IN BIOLOGY

Time: Two (02) hours

Answer ALL questions.

1. a) What is meant by “the total protein fingerprint” of a plant? (25marks)
- b) Explain how the electrophoretic separation of proteins depends on the pH of the medium (25marks)
- c) A student working with a protein sample, accidentally mixed it with a salt solution. Unfortunately, neither chromatographic columns nor resins are available in the laboratory. Explain a method which could be used to remove salts from the protein sample. (50 marks)
2. a) Describe qualitative methods used for component detection in TLC using chromogenic reagents. (60 marks)
- b) State four (04) factors that determine the quality of a plant extract and explain how they do so. (20 marks)
- c) Define “distribution coefficient” in chromatography. (20 marks)
3. a) Give a brief account of the technical advancements that have led to the development of modern sophisticated centrifuges. (70 marks)
- b) Explain the importance of RCF in reporting the conditions of centrifugation over RPM. (30 marks)

4. a) Following figure shows the absorption spectra of compounds 'A' and 'B'. Validate selecting 475 nm as the most suitable wavelength of light to measure the concentration of 'A' in the absence of B using spectrophotometry. **(30 marks)**
- b) Justify the use of the same wavelength (475 nm) for the determination of concentration of 'A' when 'B' is present in the sample as a contaminant. **(30marks)**



- c) Explain the steps followed in sandwich ELISA procedure with underlying principle(s). **(40 marks)**

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