

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE HONOURS DEGREE EXAMINATIONS

DEPARTMENT OF APPLIED BIOLOGY AND BIOCHEMISTRY

THEORY: ANALYTICAL BIOCHEMISTRY SBB 2203

MAY 2002

2 1/2 HOURS (100 marks)

INSTRUCTIONS

Answer Four (4) Questions. Each question carries 25 marks. Where a question contains subdivisions, the mark value for each subdivision is given in brackets. Illustrate your answer where appropriate with large, clearly labelled diagrams.

1. Describe briefly the techniques of extracting macromolecules from biological material up to a stage of partial purification.
2. Using a specific example discuss the principles of adsorption chromatography.
3. Write an essay on the use of gel permeation chromatography in protein biochemistry.
4. Discuss some of the main applications of radioisotopes in biological sciences.
5. What are the advantages of using :
 - a) Thin layer chromatography (TLC) as a method for the separation of carbohydrates.
 - b) Scintillation counting for measuring radioactivity in a sample.
6. Write short notes on the following:
 - a) The application of UV and visible spectroscopy.
 - b) Lyophilization
 - c) Choosing a buffer
 - d) Gel electrophoresis

END OF QUESTION PAPER

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