



EASTERN UNIVERSITY, SRI LANKA

FIRST YEAR, SECOND SEMESTER EXAMINATION IN AGRICULTURE-2002/2003

ACH 1201- ANALYTICAL CHEMISTRY AND BIOCHEMISTRY

END SEMESTER EXAMINATION (FEBRUARY 2004)

Time : 2 hours.

This paper should be answered in English

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1. i) Briefly discuss the factors affecting solubility of a substance.  
ii) Give a brief account on chromatographic techniques in the separation analysis.  
iii) Write short note on "Redox Reaction in an Electrochemical Cell".
  
2. i). Compare and Contrast the following:
  - a. Glycolysis and Gluconeogenesis
  - b. Essential and Non-Essential Amino Acids.
  - c. Glycogenesis and Glycogenolysis.ii) Explain the structures of the following:-
  - a. Haworth perspective formulas of  $\alpha$  and  $\beta$  form of galactose
  - b.  $\alpha$  helix and  $\beta$  pleated secondary structure of protein
  - c. Phospholipid and Glycolipid.
  
3. i) Discuss the importance of "Urea Cycle" in human.  
ii) Explain in detail why ketone bodies may accumulate in an animal existing on a pure lipid diet, but not in a plant or microorganism utilizing lipids as their sole carbon-energy source.
  
4. i) Outline the catabolic pathways of amino acids in protein metabolism  
ii) Describe the major differences between fatty acid oxidation pathway and fatty acid synthesis pathway.