BMS/NB/17/0272

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FACULTY OF BASIC MEDICAL SCIENCES

DEPARTMENT OF BIOCHEMISTRY

REMO CAMPUS, IKENNE

2014/2015 RAIN SEMESTER EXAMINATIONS

BCH 312- INSTRUMENTAL METHODS OF ANALYSIS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS. TIME ALLOWED: 2 HOURS

1a. Explain how you would prepare 500ml of 0.1M NaOH solution (H=1,O=16,Na=23)

1b. Write notes on the principle, technique and applications of centrifugation method of analysis.

2a. Explain in detail, the principle upon which spectrophotometric method of analysis is based.

2b. With the aid of comprehensive diagramatic illustrations, highlight the advantages of double beam spectrophotometer over single beam spectrophotometer

3a. Explain what is meant by the term 'Chromatography'

3b. You are provided with a solution containing mixture of four proteins of different molecular weight thus: A=34,000 dal, B=27,000 dal, C=73,000 dal and D=47,000 dal. Explain in detail and with reason(s), the order of elution of these proteins on a gel filtration chromatographic column.

4a. What is meant by the term "electrophoresis"

4b. Of what advantage is SDS polyacrylamide gel electrophoresis over ordinary polyacrylamide gel electrophoresis.

4c. What is the function of Tetra methylethylene diamine (TEMED) and ammonium persulphate in the casting of polyacrylamide gel.

5a. Write comprehensive notes on different methods of disrupting tissues and cells prior to analysis.

5b. Highlight steps to be taken for a successful Thin Layer Chromatography

6. Write comprehensive essay on the mode of operations and applications of fluorimeter.

ammonium persulphate is an oxidizing agent used with TEMED to catalyse ± polymerization of acrylamide & bisacrylamide to prepare polyacrylamide gels for electrophoresis.
TEMED catalyses ± decomposition of ± persulphate ion to give a free radical.