OLABISI ONABANJO UNIVERSITY

FACULTY OF BASIC MEDICAL SCIENCES

DEPARTMENT OF BIOCHEMISTRY

REMO CAMPUS, IKENNE

2015/2016 RAIN SEMESTER EXAMINATIONS

BCH 312- INSTRUMENTAL METHODS OF ANALYSIS

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

1a. Explain how you would prepare 700ml of 0.1M NaCl solution (Cl=35.5, Na=23) .

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

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

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

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

3b. You are provided with a solution containing mixture of four proteins of different molecular weight thus: A=24,000 dal, B=37,000 dal, C=94,000 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. In gel filtration chromatography techniques, what is meant by the term "equilibration"?

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

4c. Explain how you would calibrate a pH meter before using it.

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

5b. Compare and contrast the processes involved in the mode of operations of Thin Layer Chromatography and Paper Chromatography

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