



**UNIVERSITY EXAMINATIONS**

**RESIT/SPECIAL**

**EXAMINATIONS FOR THE AWARD OF DEGREE OF BACHELOR**

**BIOC 241: INTEGRATED LABORATORY TECHNIQUES I**

**STREAMS:**

**TIME: 2 HOURS**

**DAY/DATE: TUESDAY 02/02/2021**

**11.30 A.M. – 1.30 P.M.**

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**INSTRUCTIONS: Answer question ALL questions**

**QUESTION 1 (COMPULSORY) (30 MARKS)**

- Define affinity chromatography, and give the criteria used in selecting the matrix to be used in affinity chromatography (5 marks)
- Describe the principle behind ion exchange chromatography (5 marks)
- Explain the principle behind spectrophotometry technique (5 marks)
- During a laboratory practical session, students were given a mixture of volatile lipids to separate. Describe a suitable techniques they used and the principle behind it (5 marks)
- Describe a step-wise procedure of how you would measure pH in the laboratory using a pH meter (5 marks)
- Highlight five advantages of using High Performance liquid Chromatography as a separation techniques (5 marks)

**QUESTION 2 (20 MARKS)**

- Explain any 5 applications of flow cytometry (10 marks)
- Explain in details any 5 major applications of radioisotopes techniques in biochemistry and biotechnology (10 marks)

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**QUESTION 3 (20 MARKS)**

- a) Describe the different conditions associated with acid- base imbalance in the body (10 marks)
- b) Describe the role of the kidney in maintaining acid- base balance (10 marks)
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