CHUKA UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN BIOCHEMISTRY AND BACHELOR OF SCIENCE IN BIOMEDICAL SCIENCES

BIOC 241: INTEGRATED LABORATORY TECHNIQUES I

STREAMS: BSC BIOCHEMISTRY & BIOMEDICAL Y2S1 **TIME: 2 HOURS**

DAY/DATE: TUESDAY 09/04/2019 **11.30 A.M. – 1.30 P.M.**

INSTRUCTIONS:

- **Answer question one and any other two questions**

QUESTION ONE (30 MARKS)

(a) Briefly describe the types of quality control in flow cytometry. (3 marks)

(b) Explain the coulter principle in light impedance. (4 marks)

(c) Explain the principle behind Thin Layer Chromatography. (3 marks)

(d) Describe the factors influencing rate of migration of an ion in electrophoresis. (5 marks)

(e) Briefly describe the methods for measuring pH. (3 marks)

(f) Highlight the applications of ion-exchange chromatography. (5 marks)

(g) Briefly describe factors that can influence a molecule's fluorescence quantum yield.

(3 marks)

(h) Describe a wavelength (1 mark)

(i) Briefly describe the protein buffer system. (3 marks)

QUESTION TWO (20 MARKS)

(a) Describe the principle and uses of spectrophotometry. (10 marks)

(b) Describe the characteristics of a cuvette. (10 marks)

QUESTION THREE (20 MARKS)

(a) Explain the role of radiotracers in heart procedures.
(14 marks)

(b) Describe the types of high performance liquid chromatography pumps. (6 marks)

QUESTION FOUR (20 MARKS)

(a) Discuss the principle and applications of flow cytometry. (10 marks)

(b) Describe the components of a gas chromatography analyzer. (10 marks)
