

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE IN BIOCHEMISTRY**

BIOC 240: BIOCHEMICAL INSTRUMENTATION

STREAMS: BSC (BIOCHEM) Y2S1

TIME: 2 HOURS

DAY/DATE: TUESDAY 05/12/2017

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO QUESTIONS

QUESTION ONE (30 MARKS)

- (a) Briefly explain the importance of using a BLANK in spectrophotometry. [2marks]
- (b) Discuss the importance of laboratory equipment preventive repair and maintenance quality programs. [5 marks]
- (c) Discuss the merits and demerits of ultraviolet visible spectrophotometry (UV-VIS). [6 marks]
- (d) Briefly outline the difference between ultrasonic sensors and optical sensors.[6 marks]
- (e) Discuss biological instruments as common cause of laboratory accidents. [6 marks]
- (f) Briefly discuss four types of firefighting equipment. [4 marks]

QUESTION TWO (20 MARKS)

- (a) Discuss five potential uses of telemedicine. [10 marks]
- (b) Discuss various tele-health programs in development of modern medicine. [10 marks]

QUESTION THREE (20 MARKS)

- (a) Describe biomedical informatics circle and derive its contribution to science. [10 marks]
- (b) Discuss the benefits and limitation during general ultrasound imaging diagnostic technique. [10 marks]

QUESTION FOUR (20 MARKS)

- (a) With the aid of a sketch, discuss the parts of, installation, use and maintenance of a binocular optical microscope. [12 marks]
- (b) With the aid of a sketch, describe a single beam and spectrophotometer. [8 marks]