

BMET 350

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF BACHELOR OF BIOCHEMISTRY AND
BIOMEDICAL SCIENCE AND TECHNOLOGY**

BMET 350: BIOMEDICAL TECHNIQUES

STREAMS: BSC. BIOCHEMISTRY Y3 S2

TIME: 2 HOURS

DAY/DATE: THURSDAY 9/04/2020

8.30 A.M – 10.30 A.M.

INSTRUCTIONS

- Answer Question **One** and any other **Two** questions
- Do not write anything on the question paper

QUESTION ONE [30 MARKS]

- a. Describe the principle of electrophoresis. [5 Marks]
- b. Briefly describe how polyacrylamide gels are prepared. [5 Marks]
- c. What is the applied centrifugal field at a point equivalent to 5 cm from the centre of rotation and an angular velocity of 3000 rad s^{-1} ? [5 Marks]
- d. Describe the application of silver staining in protein detection following electrophoresis. [7 Marks]
- e. Describe the application of spectrophotometry and fluorimetry in continuous enzyme assays. [8 Marks]

QUESTION TWO [20 MARKS]

- a. Describe the variants of Polymerase Chain Reaction. [10 Marks]
- b. Describe how DNA cloning is achieved using the cell based approach. [10 Marks]

QUESTION THREE [20 MARKS]

- a. Describe the different types of ELISAs. [12 Marks]
- b. Outline the various applications of ELISA. [8 Marks]

QUESTION FOUR [20 MARKS]

- a. Describe the principle behind isoelectric focusing. [10 Marks]
- b. Describe how lactate dehydrogenase activity can be detected by gel electrophoresis. [10 Marks]

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