

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE IN BIOMEDICAL TECHNOLOGY**

BMET 335: APPLIED MICROBIOLOGY

STREAMS: BSC (BMET) (Y3S2)

TIME: 2 HOURS

DAY/DATE: FRIDAY 09/7/2021

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS

- i. Answer Question One and any other Two Questions**
- ii. Do not write on the question paper**

QUESTION ONE (30 MARKS)

- a. What are the various adaptations that microorganisms undergo in order to survive in their ecologies? (8 marks)
- b. Microorganisms have mutuality relationship with animals. Give any 5 examples. (5 marks)
- c. Discuss briefly the various microorganisms found in soil. (6 marks)
- d. Elucidate the challenges encountered in using microorganism in bioremediation. (5 marks)
- e. What are the disadvantages of using microbial pesticides? (6 marks)

QUESTION TWO (20 MARKS)

- a. Discuss in details the use of biopesticides and their advantages (10 marks)
- b. Discuss in detail the role of micro organisms in the following biogeochemical cycles.
 - i. Carbon cycle (4 marks)
 - ii. Sulphur cycle (3 marks)
 - iii. Iron cycle (3 marks)

QUESTION THREE (20 MARKS)

- a. Genetically modified microorganisms have applications in several fields. Discuss in detail under the following areas of application.
- i. Agro alimentary (4 marks)
 - ii. Environment (3 marks)
 - iii. Medicine (3 marks)
- b. Discuss the process of cheese production using micro organisms. (10 marks)

QUESTION FOUR (20 MARKS)

- a. There are several risks associated with use of genetically modified micro organisms. Elucidate. (10 marks)
- b. Discuss the use of *Bacillus thuringiensis* and *Bacillus sphaericus* in agriculture (10 marks)
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