

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

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

BMET 335: APPLIED MICROBIOLOGY

STREAMS: BSC (BIOMED) Y3S1

TIME: 2 HOURS

DAY/DATE: MONDAY 04/12/2018

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

- **Answer Question One and any other Two Questions**

QUESTION ONE (30 MARKS)

- Briefly describe two techniques used in microbiology laboratory to observe bacterial growth. [2 marks]
- Briefly describe the biochemical oxygen demand (BOD) and explain the main objectives of tertiary treatment in relation to secondary treatment of water. [5 marks]
- Describe the microbial pathogens found in soil. [4 marks]
- Briefly discuss the meaning of the term 'food intoxication; as used in microbiological studies. [3 marks]
- Briefly discuss use of micro-organisms in environmental control. [4 marks]
- Outline four characteristics of yeasts. [4 marks]
- Discuss two common water microbes. [2 marks]
- Outline four types of microbial communities found in marine environments. [4 marks]
- Describe the term co-metabolism as used in soil microbiological studies. [2 marks]

QUESTION TWO (20 MARKS)

- (a) Basing your argument on the Koch postulates, what is the purpose of culturing bacteria invitro. [10 marks]
- (b) Giving procedures involved, discuss four types of fermented foods. [10 marks]

QUESTION THREE (20 MARKS)

Bacteria, fungi and other microalgae are historically being exploited in a number of human activities. Discuss the statement. [20 marks]

QUESTION FOUR (20 MARKS)

- (a) Briefly describe the term 'secondary treatment of sewage' and carefully outline steps followed in a typical sewerage treatment plant. [12 marks]
 - (b) Giving examples of bacterial species involved, differentiate between Nitrification and denitrification. [8 marks]
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