

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
ECOT AND AGED**

BOTA/MICB 131: GENERAL MICROBIOLOGY

STREAMS:

TIME: 2 HOURS

DAY/DATE: THURSDAY 13/12/2018

8.30 A.M – 10 .30 A.M

INSTRUCTIONS

- **Answer all the questions in section A and only one question in section B**

SECTION A: 50 MARKS(ANSWER ALL THE QUESTIONS IN THIS SECTION)

1. (a) Describe John Needham experiment to support spontaneous generation theory.

[3

marks]

(b) Discuss importance of microbiology in food and dairy technology. [3 marks]

(c) Explain why *Bacillus anthracis* is used in bioterrorism. [1 mark]

(d) Distinguish various types of flagella in bacteria. [3 marks]

2. (a) Describe three modes, in which fungi acquire their nutrients. [3 marks]

(b) State the causative agents of the following:

(i) Amoebic dysentery..... [1 mark]

(ii) Malaria[1mark]

(iii) Nagana in cattle [1 mark]

(c) With the help of a diagram illustrate how loop dilution technique is used in culturing of microorganisms.

[4 marks]

3. (a) Describe two types of viral capsids based on arrangement of capsomeres. [2 marks]
- (b) Explain why inoculated culture in petridishes are inverted during incubation. [1 mark]
- (c) Describe any different three forms of thallus structure in algae occurs. [3 marks]
- (d) Describe four methods used in sterilization of media and equipment's. [4 marks]
4. (a) Describe five general phases in the life cycle of animal viruses during multiplication. [5 marks]
- (b) Distinguish between ectomycorrhizal and endomycorrhiza. [2 marks]
- (c) Describe three qualities of an ideal indicator organism during sanitary analysis of water. [3 marks]
5. (a) Describe two types of microscopes classified based on ultraviolet rays as source of illumination. [2 marks]
- (b) Explain three factors that slow down microbial growth in stationary phase in a batch culture system. [3 marks]
- (c) Explain the mode of action of the following chemical agents of microbial control.
- (i) Aldehydes [2 marks]
- (ii) Alcohols [2 marks]
- (d) Define the term bioremediation. [1 mark]

SECTION B (20MARKS) ANSWER ONLY ONE QUESTION

6. Discuss micro organisms on the following headings;
- (i) Use of heat as physical agent of microbial control. [10 marks]
- (ii) Five factors that contribute to re-emergence and emergence of infectious diseases. [10 marks]
7. Citing examples, discuss various biotechnology products from microbes. [20 marks]
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