

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS.

FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE  
OF BACHELOR OF SCIENCE

BOTA/MICB 131: GENERAL MICROBIOLOGY

STREAMS: B.Sc (BIO, NARE, FOST, BIOCHEM, BED SCI, AGRI, INDUST.CHEM)

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 10/04/2019

11.30 A.M - 1.30 P.M.

INSTRUCTIONS:

- Answer **ALL** Questions in Section A and any other **TWO** Questions in Section B
- Do not write anything on the question paper

SECTION A: [30 MARKS]

1. (a) Explain the exceptions to Robert Koch's postulates. [4 Marks]  
(b) Define the term 'coliform bacteria'. [1 Mark]
2. Identify the roles of the following microbial structures  
(i) Inclusion bodies [2 Marks]  
(ii) Fimbriae [2 Marks]  
(iii) Cell wall [1 Mark]
3. State the theory of spontaneous generation and give four arguments used to support it. [5 Marks]
4. Outline the major steps involved in viral replication. [5 Marks]
5. Describe methods used in sterilization of microbiological culture media and equipment. [5 Marks]
6. (a) Identify one useful property that makes agar valuable to microbiology. [1 Mark]  
(b) Explain the events during lag phase in batch bacterial growth culture. [4 Marks]

**SECTION B: [40 MARKS]**

- 7. Describe applications of microbiology in modern day. [20 Marks]
  - 8. Describe methods used in classification and identification of microorganism. [20 Marks]
  - 9. Discuss antimicrobial chemical agents and their mode of action in microbial control. [20 Marks]
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