

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF  
SCIENCE IN MICROBIOLOGY AND BIOTECHNOLOGY**

**BOTA 131: GENERAL MICROBIOLOGY**

**STREAMS: BSc.**

**TIME: 2 HOURS**

**DAY/DATE: FRIDAY 20/12/2024**

**11.30 A.M. – 1.30 P.M.**

**INSTRUCTIONS:**

**Section A. Answer all the questions**

1. a) Give the roles of a cell membrane of bacteria (3 marks)  
b) Name two types of spherical bacteria (2 marks)
2. a) Describe the types of asexual spores in fungi (3 marks)  
b) Illustrate septate and aseptate fungal morphology (2 marks)
3. a) Draw a well-labelled diagram of a bacteriophage (3 marks)  
b) Name two factors used in viral classification (2 marks)
4. a) Explain the principle of autoclaving as a method of sterilization of microbiological media and equipment (3 marks)  
b) Name two methods used in the cultivation of microorganisms in the laboratory (2 marks)
5. Name characteristics of a bacterial population growing in a batch culture system during their Log phase (5 marks)
6. a) List examples of symbiotic nitrogen fixers (3 marks)

b) State the roles of mycorrhizal fungi (2 marks)

**Section B. Answer two questions**

7. Discuss five chemical classes used to control microorganisms (20 marks)

8. Describe five biotechnology products obtained from microorganisms through fermentation (20 marks)

9. Discuss the factors which have contributed to the emergence and re-emergence of infectious diseases (20 marks)

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