

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN  
BOTA 335: ADVANCED MICROBIOLOGY**

**STREAMS:**

**TIME: 2 HOURS**

**DAY/DATE: THURSDAY 08/07/2021**

**11.30 A.M – 1.30 P.M**

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**INSTRUCTIONS:**

- (i) Answer all questions in section A and any other two in section B
- (ii) Do not write anything on the question paper
- (iii) Use illustrations where appropriate to enhance your answer

**SECTION A: (30 Marks)**

1. (a) Define the following terms. [3 marks]
  - (i) Fermentation
  - (ii) Bacteriophages
  - (iii) Binary fission(b) Give four functions of bacterial plasmid. [2 marks]
2. Discuss five factors that affect microbial growth in food. [5 marks]
3. Discuss three mechanisms in which bacteria carry out DNA transfer to bring variations. [5 marks]
4. Discuss antimicrobial substance in food that helps to ensure food safety. [5 marks]
5. (a) Describe the roles of different types of RNAs involved in protein synthesis. [2 marks]  
(b) List the types of genetic mutations in microorganisms. [3 marks]

6. Outline five economic importance of algae in the ecosystem. [5 marks]

**SECTION B**

7. Discuss different types of vaccines used against microbial infections. [20 marks]
8. Discuss the roles of microorganisms in biogeochemical cycles. [20 marks]
9. Describe sewage treatment using microorganism. [20 marks]
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