

BIOC 335

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF BACHELOR OF SCIENCE  
IN BIOCHEMISTRY

**BIOC 335: ANTIBIOTICS**

**STREAMS: BIOCHEMISTRY Y3 S2 BSc.**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 20/04/2020**

**8.30 A.M – 10.30 A.M.**

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**INSTRUCTIONS**

- Answer All questions in Section A and any Two in Section B
- Do not write anything on the question paper

**QUESTION ONE [30 MARKS]**

- Explain the difference between bacteriostatic and bactericidal antibiotics. [5 Marks]
- The correct use of antibiotics can prevent the increase in antibiotic resistance. Describe prudent use of antibiotics. [5 Marks]
- Explain why antibiotics are not effective against viruses. [4 Marks]
- Bacteriostatic antibiotics slow the growth of bacteria by interfering with processes the bacteria need to multiply. Describe these processes. [6 Marks]
- Describe the mechanism of action of  $\beta$ -lactam antibiotics. [10 Marks]

**QUESTION TWO [20 MARKS]**

- a. Using specific examples, describe how antibiotics inhibit protein synthesis in bacteria. [10 Marks]
- b. Describe how antibiotic inactivation by group transfer occurs. [[10 Marks]

**QUESTION THREE [20 MARKS]**

- a. Describe how dissemination of multiple drug resistance occurs during horizontal gene transfer. [10 Marks]
- b. Describe the various families of bacterial drug efflux transporters. [10 Marks]

**QUESTION FOUR [20 MARKS]**

- a. Describe the mode of action of bacitracin and explain why it is exclusively used in topical formulations. [8 Marks]
- b. Describe how broader spectrum of activity is achieved by carbapenem thienamycin. [12 Marks]