

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF COMMERCE

BCOM 307: ANTIBIOTICS

STREAMS: BCOM Y3S2

TIME: 2 HOURS

DAY/DATE: MONDAY 9/04/2018

8.30 A.M - 10.30 A.M.

INSTRUCTIONS:

- Answer Question ONE and any other TWO Questions.
- Do not write anything on the question paper.

QUESTION ONE [30 MARKS]

- (a) Explain the difference between bacteriostatic and bactericidal antibiotics. [5 Marks]
- (b) Explain why antibiotics are not effective against viruses. [4 Marks]
- (c) Bacterial resistance to antibiotics can arise due to mutations in the bacterial DNA.
Explain how these mutations can affect antibiotic action. [5 Marks]
- (d) Using relevant drug examples, describe the process affected by bacteriostatic antibiotics. [6 Marks]
- (e) Describe the genetic mechanism of antibiotic resistance transfer employed by bacteria. [10 Marks]

QUESTION TWO [20 MARKS]

- (a) Describe how broader spectrum of activity is achieved by carbapenem thienamycin. [10 Marks]
- (b) Describe how bacteria mediates antibiotic inactivation by group transfer. [10 Marks]

QUESTION THREE [20 MARKS]

(a) Describe the mechanism of action of β -lactam antibiotics. [10 Marks]

(b) Using relevant structural illustrations and examples, describe how penicillin improvements have overcome acid instability. [10 Marks]

QUESTION FOUR [20 MARKS]

(a) Describe the various families of bacterial drug efflux transporter. [10 Marks]

(b) Using specific examples, describe how antibiotics inhibit protein synthesis in bacteria. [10 Marks]

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