

MIC 214



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OFFICE OF THE DEPUTY PRINCIPAL  
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

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## UNIVERSITY EXAMINATIONS

### 2018 /2019 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER REGULAR EXAMINATION

**FOR THE DEGREE OF BACHELOR OF SCIENCE  
IN MICROBIOLOGY**

**COURSE CODE: MIC 214**

**COURSE TITLE: SYSTEMATIC MICROBIOLOGY**

**DATE: 23<sup>RD</sup> APRIL, 2019**

**TIME: 9.00 AM – 12.00 PM**

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### INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

**THIS PAPER CONSISTS OF 3 PRINTED PAGES**

**PLEASE TURN OVER**

MIC 214: SYSTEMATIC MICROBIOLOGY

STREAM: BSc in Microbiology

DURATION: 3 Hours

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**INSTRUCTIONS TO CANDIDATES**

- i. Answer **ALL** questions from section A and any **THREE** from section B.
  - ii. Diagrams should be used whenever they serve to illustrate the answer.
  - iii. Do not write on the question paper.
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**SECTION A (24 MARKS)**

**Question One**

- a) Differentiate the following terms;
  - i. Systematics and taxonomy (2 Marks)
  - ii. Species, clone and strain (3 Marks)
- b) Mention three domains of life as introduced by Carl Woese *et al.* (3 Marks)
- c) Compare the basic structure of Gram-positive and Gram-negative bacteria (4 Marks)

**Question Two**

- a) Explain the application of phenotypes in taxonomy and systematics (4 Marks)
- b) Explain DNA hybridization as a molecular method of bacterial classification (4 Marks)
- c) Differentiate between simple staining and differential staining methods (4 Marks)

**SECTION B (36 MARKS)**

**Question Three**

Explain using diagrams the various morphological shapes of bacterial species (12 Marks)

**Question Four**

- a). Highlight the differences between prokaryotic cell and eukaryotic cell (8 Marks)
- b) Write short notes on binary fission (4 Marks)

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**Question Five**

Describe using diagram, the generalized anatomy of bacterial cells. (12Marks)

**Question Six**

Discuss the phenetic classification of microorganisms (12 Marks)

**Question Seven**

a). Write short notes on the following

i. Ribotyping; (4 Marks)

ii. Nucleic acid base composition (2 Marks)

b). Explain Polymerase Chain Reaction as a modern technique in the identification of microbes.

(6 Marks)



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