

MIC 211



OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS

2018 /2019 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER REGULAR EXAMINATION

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

COURSE CODE: MIC 211

COURSE TITLE: MICROBIAL ECOLOGY

DATE: 15TH APRIL, 2019

TIME: 9.00 AM – 12.00 PM

INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF 3 PRINTED PAGES

PLEASE TURN OVER



MIC 211: MICROBIAL ECOLOGY

STREAM: BSc in Microbiology

DURATION: 3 HOURS

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) Distinguish between autogenic succession and allogenic succession. (4 Marks)
- b) Outline two steps involved in microbial attachment. (4 Marks)
- c) Describe the structure of an ecosystem (4 Marks)

Question Two

- a) Define the term zonation. (2 Marks)
- b) Give an account of four biotic factors that influence the distribution of organisms. (4 Marks)
- c) Describe the symbiotic relationship in a mycorrhiza. (3 Marks)
- d) Write short notes on the following terms:-
 - i. Biotic component of the ecosystem (2 Marks)
 - ii. Biosphere (1 Mark)

SECTION B (36 MARKS)

Question Three

- a) Highlight two distinct characteristics of an ecosystem. (4 Marks)
- b) Describe four negative forms of microbial interactions found in the ecosystem. (8 Marks)

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Question Four

- a) Discuss the effects that solute concentration has on micro-organisms. (6 Marks)
- b) Explain how cells have adapted to different solute concentration in the environment. (6 Marks)

Question Five

- a) Explain four roles of micro-organisms in the soil. (8 Marks)
- b) Highlight the different types of ocean ecosystems. (4 Marks)

Question Six

Explain:-

- i. Ecological Niche (3 Marks)
- ii. Autochthonous microbes (3 Marks)
- iii. Zymogenous microbes (3 Marks)
- iv. Allochthonous microbes (3 Marks)

Question Seven

- a) Define the term psychrotrophs. (2 Marks)
- b) Explain the outcome of succession in an ecosystem (10 Marks)

