**UNIVERSITY OF KABIANGA**

**UNIVERSITY EXAMINATIONS**

**2015/2016 ACADEMIC YEAR**

**SECOND YEAR SECOND SEMESTER EXAMINATION**

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

**COURSE CODE: MIC 211**

**COURSE TITLE: MICROBIAL ECOLOGY**

**DATE: 4/4/2016**

**TIME: 9.00 A.M- 12.00 NOON**

**INSTRUCTIONS TO CANDIDATES:**

Answer **ALL** Questions in **section A** and any other **THREE** in **section B**.

Illustrate answers with appropriate diagrams where necessary.

**SECTION A (28 MARKS): ATTEMPT ALL QUESTIONS**

1. Define the following terms as used in microbial ecology: (4 marks)

a. Ecosystem

b. Anthropogenic factor

c. Enriched media

d. Biofilm

2. a. Define the term 'rhizosphere'. (2 marks)

b. Explain the difference between rhizosphere and mycorrhizia. (2 marks)

3. Discuss the importance of soil as a microbe ecosystem. (4 marks)

4. Describe the role of microbial selection within a habitat. (4 marks)

5. Describe any **four** environmental factors and their effect on microbial populations. (4 marks)

6. With examples discuss the significance of antibiotic production by microorganisms in nature. (4 marks)

7. Briefly explain the importance of microbial dispersal. (4 marks)

**SECTION B (42 MARKS): CHOOSE ANY THREE QUESTIONS**

8. Write brief notes on microorganisms and the current environmental problems. (14 marks)

9. Describe the types of organisms' interaction present in nature. (14 marks)

10. Discuss the methods of studying microbial ecosystems. (14 marks)

11. Using appropriate illustrations trace the sequence of events in the nitrogen cycle and giving a list of microorganisms that play a key role in this cycle.