



# **MAASAI MARA UNIVERSITY**

**REGULAR UNIVERSITY EXAMINATIONS  
2017/2018 ACADEMIC YEAR  
SECOND YEAR END OF SECOND SEMESTER  
EXAMINATIONS**

**SCHOOL OF SCIENCE AND INFORMATION SCIENCES  
FOR DEGREE OF BACHELOR OF SCIENCE**

**COURSE CODE: MIC 2205  
COURSE TITLE: MICROBIAL ECOLOGY**

**DATE: 3<sup>RD</sup> MAY 2018**

**TIME: 0830 - 1030 HRS**

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**INSTRUCTIONS TO CANDIDATES**

Answer ANY TEN questions

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1. Discuss the importance of quorum sensing to microbial communities **(7 marks)**
2. Using examples, describe any relationships among microbes where some are unaffected **(7marks)**
3. Discuss the role played by microorganisms in the following aspects:
  - a) Organic matter decomposition **(4 marks)**
  - b) Bioremediation **(3 marks)**
4. Describe the influence of the root to the abundance and diversity of different microorganisms **(7 marks)**
5. Describe the roles of major microbial populations in the soil **(7 marks)**
6. Distinguish biofilms from microbial mats **(7 marks)**
7. List 7 properties of ideal indicator organisms for water pollution **(7 marks)**
8. Briefly describe the following water borne pathogens: **(7 marks)**
  - a) *Shigella*
  - b) Hepatitis A
  - c) Giardia
9. Discuss any 2 antagonistic relationships that exist among microorganisms **(7 marks)**
10. Discuss the cause, symptoms and prevention of cholera **(7 marks)**
11. Discuss the advantages and disadvantages of normal human flora **(7 marks)**
12. Explain the three microbial guilds found in the nitrogen cycle **(7 marks)**
13. Discuss the primary and secondary steps used in municipal water treatment **(7 marks)**
14. List 7 conditions necessary for rhizosphere microorganism colonization **(7 marks)**
15. Describe aquatic microorganisms under the following subtopics:
  - a) Planktons **(4 marks)**
  - b) Benthos **(3 marks)**

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