



# **MAASAI MARA UNIVERSITY**

**REGULAR UNIVERSITY EXAMINATIONS**

**2023/2024 ACADEMIC YEAR**

**FOURTH YEAR SECOND SEMESTER**

**SCHOOL OF PURE APPLIED AND HEALTH  
SCIENCES**

**BACHELOR OF SCIENCE IN MICROBIOLOGY**

**COURSE CODE: MIC 4215-1**

**COURSE TITLE: WATER MICROBIOLOGY**

**DATE: 18/4/2024**

**TIME: 0830-1030 HRS**

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**Instructions**

A. Answer ALL questions in section A and any TWO in section B

B. Illustrate your answers with diagrams and give examples where appropriate.

**SECTION A: SHORT ANSWER QUESTIONS. ANSWER ALL QUESTIONS (30MARKS)**

- 1a. List any four (4) pathogenic microbes found in water. (2mks)
- b. Differentiate between grey water and black water. (1mk)
2. Describe the sources from which recreational waters gain contamination. (3mks)
3. List the groups of indicator organisms used in determination of fecal contamination of drinking water. (3mks)
4. State any six (6) functions of GIS Technology in water quality monitoring. (3mks)
- 5a). List the two (2) viruses commonly implicated in childhood diarrhoea incidents. (3mks)
- b. List any four (4) protozoa known to contaminate water sources. (3mks)
6. Name any six (6) uses of recycled water. (3mks)
7. Highlight any three (3) emerging threats to the freshwater ecosystem. (3mks)
8. Explain why cholera is a threat during humanitarian emergencies. (3mks)
9. Describe how ISO 22000 is applied in the water industry. (3mks)
10. outline the steps involved in the Multiple Tube Fermentation Technique. (3mks)

**SECTION B: ESSAY QUESTONS. ANSWER ANY TWO (2) QUESTIONS (40MKS)**

11. Discuss the existing threats to the freshwater ecosystem. (20mks)
12. Give a detailed outline of steps involved in water quality risk Assessment. (20mks)
13. Describe the stages involved in accreditation of water laboratories. (20mks)
14. Explain the impact of climate change on water quality. (20mks)

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