



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR
FOURTH YEAR SECOND SEMESTER EXAMINATION
FOR
THE DEGREE OF BACHELOR OF SCIENCE ENVIRONMENTAL
STUDIES (BIOLOGY AND HEALTH)**

COURSE CODE: EBH 4241

COURSE TITLE: ENVIRONMENTAL MICROBIOLOGY

DATE: 14/10/2021

TIME: 1100-1300HRS

Instructions to Candidates

Answer ALL questions in section A and any other TWO questions in section B. Illustrate your answers with diagrams and give examples where appropriate.

SECTION A: ANSWER ALL QUESTIONS (30MKS)

1. Define the following terms (3mks)
 - a) Decimal reduction time
 - b) Thermal death time
 - c) Thermal death point
2. Illustrate the bacterial growth curve. (3mks)
3. Categorize bacteria based on the optimum temperature range. (3mks)
4. Illustrate any three (3) forms of bacterial spores. (3mks)
- 5a) Define bacteriophages. (½ mk)
- b) Make a well labelled diagram of a bacteriophage. (2.5mk)
6. Describe the effect of oxygen on bacterial growth. (3mks)
7. List three (3) ways in which the human immune system responds to bacterial infections. (3mks)
8. Propose three (3) ways in which microbes can be used in industrial processes (3mks)
9. Illustrate bacterial classification by cell morphology. (3mks)
10. Differentiate between innate and acquired immunity. (3mks)

SECTION B: ANSWER ANY TWO (2) QUESTIONS 40MKS

11. Discuss the mode of action of chemical agents used in control of microorganisms . (20mks)
12. Explain the procedure of the Gram stain technique. (20mks)
13. Describe modes of transmission of bacterial infection. (20mks)
14. Discuss the role of non living reservoirs in the transmission of bacterial diseases. (20mks)

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