



UNIVERSITY EXAMINATIONS

SECOND SEMESTER 2023/2024 ACADEMIC YEAR

**FIRST YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE**

ENSC 124: ENVIRONMENTAL MICROBIOLOGY

STREAM: R

TIME: 2 HRS

DAY: WEDNESDAY [8.30A.M – 10.30A.M] DATE: 10/04/2024

THIS QUESTION PAPER CONSISTS OF TWO (2) PAGES

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INSTRUCTIONS: ANSWER QUESTIONS ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- i. Define the following terms; **(10 Marks)**
 - a) Bio augmentation
 - b) Mycology
 - c) Biofilm
 - d) Immunology
 - e) Mordant
- ii. Identify and briefly explain the **TWO** importance(s) of Koch's postulates in relation to environmental microbiology **(4 Marks)**
- iii. State two characteristics of helical viruses **(2 Marks)**
- iv. What is the purpose of counterstain in acid-fast stain? **(2 Marks)**
- v. State **THREE** distinguishing characteristics of class *Ascomycetes* **(3 Marks)**
- vi. Compare and contrast eukaryotic and prokaryotic cells **(4 Marks)**
- vii. By use of a diagram, explain the stages involved in a normal growth curve of bacteria **(5 Marks)**

QUESTION TWO (20 Marks)

Giving examples, discuss **FIVE** different types of culture media **(20 Marks)**

QUESTION THREE (20 Marks)

Elucidate on **FIVE** physical methods of microbial control **(20 Marks)**

QUESTION FOUR (20 Marks)

Discuss the steps involved in the lytic cycle during the multiplication of bacteriophages in viruses **(20 Marks)**

QUESTION FIVE (20 Marks)

Expound on different methods of feeding by the protozoa **(20 Marks)**

