

UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

**FOURTH YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF BIOMEDICAL SCIENCE AND
TECHNOLOGY**

BMED 413: ENVIRONMENTAL TOXICOLOGY

STREAM: R

TIME: 2 HRS

DAY:

DATE:

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

SECTION A (40 MARKS)

- **Attempt all questions**
- **Each question 5 marks**

QUESTION ONE

Outline the importance of managing chemicals in both developed and developing countries. **(5 Marks)**

QUESTION TWO

Explain the concept of a target organ in toxicology. **(5 Marks)**

QUESTION THREE

Give a brief account of the main routes of exposure for environmental toxicants to enter the body **(5 Marks)**

QUESTION FOUR

Compare and contrast the health concerns and primary toxicants associated with "Sick-Building Syndrome" and classic episodes of community air pollution. **(5 Marks)**

QUESTION FIVE

Write short notes on common sources of poisoning. **(5 Marks)**

QUESTION SIX

Outline key populations that are at increased risk from environmental toxicants. **(5 Marks)**

QUESTION SEVEN

Identify key differences between bioaccumulation and biomagnification. **(5 Marks)**

QUESTION EIGHT

Differentiate between detoxification and bioactivation.

(5 Marks)

SECTION B

- **Attempt any Two questions**
- **Each Question 15 marks**

QUESTION NINE

Using the liver and the nervous system as examples, describe how different toxicants can cause specific damage at the organ level.

(15 Marks)

QUESTION TEN

Describe how genetic diversity within a population can be affected by chronic exposure to environmental toxicants, using specific example from aquatic ecosystems.

(15 Marks)

QUESTION ELEVEN

Beyond knowledge of toxicants themselves, describe other skills and understandings, which are crucial for a toxicologist to effectively protect public and environmental health.

(15 Marks)