

Paper 1



TECHNICAL UNIVERSITY OF MOMBASA
SCHOOL OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENT AND HEALTH SCIENCES
UNIVERSITY EXAMINATION FOR:
DEGREE OF BACHELOR OF SCIENCE IN ENVIRONMENTAL HEALTH
BSEH 21S Y4S2

AEH 4403: ENVIRONMENTAL TOXICOLOGY

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2024

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination

-Answer Booklet, Examination pass and student ID

This paper consists of FIVE questions

Mobile phones are not allowed in the examination room

Do not write on the question paper

SECTION A (Answer all the questions)

QUESTION ONE (20 Marks)

- Briefly define the terms toxins, toxicants and toxicology **(3 marks)**.
- Briefly explain the terms exposure dose, absorbed dose and administered dose **(6 marks)**.
- What do you understand by multidisciplinary nature of Environmental Toxicology **(4 marks)**
- Most hazardous substances exhibit a "dose-response relationship." What does this mean? **(2 marks)**

- e) What are the major organs involved in excretion of toxins from the body
(4marks)
- f) Name the more likely routes by which direct human exposure to toxic materials may occur **(2 marks)**
- g) Using relevant examples, distinguish between organ toxicant and systemic toxicant **(4 Marks)**
- h) List any three advantages of synthetic pyrethroids **(3 marks)**
- i) Outline any **FOUR** toxicants encountered by public health officers in their line of duty **(2 marks)**

SECTION B (Answer only TWO questions)

QUESTION TWO (20 Marks)

- a) Briefly discuss the following branches of toxicology **(12 marks)**
 - i. Mechanistic
 - ii. Forensic
 - iii. Clinical
 - iv. Regulatory
- b) Describe main contributions of the following people in the field of toxicology
(8 marks)
 - i. M J B (Mattie Josesph Benaventura) Orfila (1787-1853)
 - ii. Percival Pott (1775)
 - iii. Hohenheim-Paracelsus (1493-1541)

QUESTION THREE (20 Marks)

Discuss different factors that influence toxicity effects of chemicals to humans **(20 marks)**

QUESTION FOUR (20 Marks)

- a) Briefly explain the importance of Environmental Toxicology **(5 marks)**

- b) For each of the following chemicals (natural or synthetic) listed below, indicate what harm they cause and under what circumstances; compare this harm with any benefits of which you are aware **(15 marks)**
- i. Common salt (Sodium chloride)
 - ii. Clostridium botulinum
 - iii. Aspirin
 - iv. Asbestos
 - v. Organophosphorus pesticide

QUESTION FIVE (20 Marks)

Discuss various measures one would take to control pesticide residues in foods **(20 marks)**