



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 - Meru-Kenya.
Tel: +254(0) 799 529 958, +254(0) 799 529 959, +254 (0)712 524 293
Website: www.must.ac.ke Email: info@mucst.ac.ke

UNIVERSITY EXAMINATIONS 2023/2024

FOURTH YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN PUBLIC HEALTH

HPP 3414: ENVIRONMENTAL POLLUTION

DATE: JANUARY 2025

TIME: 2 HOURS

INSTRUCTIONS: Answer Question ONE and any other TWO questions.

QUESTION ONE (30 MARKS)

a) Define the following terms: (10 Marks)

- Environmental Risk Assessment and Biomonitoring
- Delayed and Immediate Toxicity
- Point sources and Non-point sources of pollution
- Local effects and Systemic effects
- Effective Concentration 50% and Lethal Dose 50%

b) Define bioaccumulation, and why is it an environmental concern (3 Marks)

c) Explain the different types of Dose-Response Relationships that occur in a community (4 Marks)

d) Explain the effects of pollution on Terrestrial Ecosystems (4 Marks)

e) Explain the role that toxicokinetics play in understanding the effects of chemical exposure on human health (6 Marks)



MUST is ISO 9001:2015 and



ISO/IEC 27001:2013 CERTIFIED

f) Explain how micro-organisms serve as bioindicators of water quality, and what specific types of micro-organisms are commonly used for this purpose (3 Marks)

QUESTION TWO (20 MARKS)

Describe the concept of risk assessment in toxicology and describe the steps involved in a quantitative risk assessment process (20 Marks)

QUESTION THREE (20 MARKS)

Discuss the factors that influence toxicity of a substance to an organism. (20 Marks)

QUESTION FOUR (20 MARKS)

Discuss the primary phases of toxicokinetics of toxicants in an organism's system. (20 Marks)



MUST is ISO 9001:2015 and



ISO/IEC 27001:2013 CERTIFIED