

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE**

CHAL 451: ENVIRONMENTAL TECHNOLOGY AND HEALTH

STREAMS: BSc

TIME: 2 HOURS

DAY/DATE: TUESDAY 19/12/2023

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS:

- **Answer question one and any other two questions**

QUESTION ONE (30 MARKS)

- Explain the term environmental health (2 marks)
- Discuss hazards caused by solvents (3 marks)
- Briefly discuss the following common occupational lung diseases:
 - Pneumoconiosis (2 marks)
 - Silicosis (2 marks)
- Explain the term risk assessment (2 marks)
 - List three health impacts of the environmental health risk assessment (EHRA) (3marks)
- Discuss two stages of the environmental health risk assessment (4 marks)
- Differentiate between:
 - Hazard and Risk (2 marks)
 - Harm and damage (2 marks)
- Give three main objectives in ecotoxicology (3 marks)
- Explain the following terms
 - Toxic dose low (TDLO) (2 marks)
 - Toxic concentration low (TCLO) (2 marks)

QUESTION TWO (20 MARKS)

- a) Briefly discuss three disciplines of environmental health (6 marks)
- b) Discuss the two common types of fume fevers (4 marks)
- c) Explain the term occupational exposure standards (2 marks)
- d) Discuss the following environmental diseases:
 - i. Asbestosis (3 marks)
 - ii. Fluorosis (3 marks)
- e) Give two sources of toxicity information (2 marks)

QUESTION THREE (20 MARKS)

- a) Discuss two emerging issues in environmental health (4 marks)
- b) Explain the terms:
 - i. Ecotoxicology (2 marks)
 - ii. Lethal Dose low (2 marks)
 - iii. Lethal Concentration Low (2 marks)
- c) Discuss three factors influencing toxicity (6 marks)
- d) Explain the following terms
 - i. Primary irritants (2 marks)
 - ii. Photosensitizers (2 marks)

QUESTION FOUR (20 MARKS)

- a) Differentiate between:
 - i. Necrosis producers and fibrosis producers (2 marks)
 - ii. Individual and population assessment (2 marks)
 - iii. Qualitative and quantitative risk assessment (2 marks)
 - iv. Genotoxic and epigenetic (2 marks)
 - b) Discuss three criteria for evaluating risk assessment methods (3 marks)
 - c) Discuss two routes of chemical exposure to the body (4 marks)
 - d) Write the scheme for the biotransformation of ethanol in the liver (2 marks)
 - e) Discuss the term mutagens using a suitable example (3 marks)
-