



(University of Choice)
**MASINDE MULIRO UNIVERSITY OF SCIENCE AND
TECHNOLOGY
(MMUST)
(MAIN CAMPUS)**

**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

FIRST YEAR SECOND SEMESTER EXAMINATIONS

FOR THE DEGREE OF MASTER OF PUBLIC HEALTH

COURSE CODE: PHC 816

COURSE TITLE: TOXICOLOGY AND ENVIRONMENTAL HEALTH

DATE: 25TH APRIL 2023

TIME: 2.00PM- 5.00PM

General Instructions

- 1) Write your University Registration Number on every booklet that you use.
- 2) Do not write your name on any papers you use.
- 3) Answer any four questions.
- 4) Each question contains a total of 25 marks.
- 5) The time allowed for this Paper is **Three (3) hours**.

1. A new land parcel has been identified for irrigation and settlement scheme in North Eastern Kenya. The government through its relevant ministry proposes to settle at least 20, 000 people in the new scheme.

- a) Outline the steps you would follow to do an environmental impact assessment of the new settlement (10 marks).
- b) Outline the basic necessities for this settlement to function optimally considering environmental and health matters (10 Marks).
- c) Describe 5 reasons for conducting environmental impact assessment (5 marks)

Q2. a) Define insecticides and pesticides (7 Marks).

b). Giving examples, list and describe FOUR health risks of chemical disasters (10marks).

c) Briefly describe the mode of action of the following insecticides:

- I. Organophosphates (2 Marks)
- II. Organochlorines (2 Marks)
- III. Carbamates (2 Marks)
- IV. Pyrethroids (2 Marks)

Q3. It is suspected that toxic effluent emanating from surrounding factories around Kisumu city end up in Lake.

- a) List and describe and 5 toxic chemicals that are likely discharged in to the lake and state how they would affect both biotic life and the health of populations in this region and beyond.(10 Marks).
- b) Discuss the health effects of mercury on humans (15 marks)

Q4. a) Giving examples of the most recent disasters explain how you can control exposure to an imminent or real hazard when it occurs (10 marks)

b) You are called upon to mitigate an incident that threatens the safety of drinking and recreational water supply. Explain the possible tasks you could perform to avert such crises (10 marks).

c) A new maize flour has been introduced in to the market but is suspected to carry potentially toxic substances. Explain how you would measure the toxicity of the suspected substance.(5 marks)

5. a) Define Carcinogenesis (5 marks)

b) Discuss two major chemical causes of human cancer and justify why you chose them (20 marks).

