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(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

(Main CAMPUSES)

**UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR**

FOR THE MASTER OF PUBLIC HEALTH

COURSE CODE:PHC 816

COURSE TITLE: TOXICOLOGY AND ENVIRONMENTAL HEALTH

DATE: 26/04/2022

TIME: 9.00-12.00Noon

INSTRUCTIONS TO CANDIDATES:

General Instructions

1. Write your University Registration Number on every booklet that you use.
2. Answer any four (4) questions.
3. Each question contains a total of 25 marks.
4. The time allowed for this Paper is **Three (3)** hours.
5. Observe carefully further instructions on the cover of Answer Booklets.

Answer Question 1 and any other four (4) questions in this section

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)

2.

- a) Define risk assessment in toxicology and describe the FOUR (4) risk assessment processes (10 marks)
- b) Giving examples of previously recorded disasters, briefly describe 5 health risks of chemical disasters (10 Marks).
- c) Name and describe Four ways by which humans are get exposed to toxic chemicals (5 Marks)

3. 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) Briefly describe the health effects mercury on humans (5 marks)
- c) Name and describe modes of action of Four classes of insecticides commonly used for arthropod control (10 marks).

4. 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.