



# **MAASAI MARA UNIVERSITY**

**REGULAR UNIVERSITY EXAMINATIONS**

**2023/2024 ACADEMIC YEAR**

***FIRST YEARSECOND SEMESTER***

**SCHOOL OF PURE, APPLIED AND  
HEALTH SCIENCES**

**MASTER OF SCIENCE IN CHEMISTRY**

**COURSE CODE: CHE 8208**

**COURSE TITLE:ENVIRONMENTAL CHEMISTRY**

**DATE: 22nd May 2024**

**TIME: 0230-0430HRS**

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**INSTRUCTIONS TO CANDIDATES**

1. Answer any **THREE** questions.

*This paper consists of **TWO** printed pages. Please turn over.*

### QUESTION ONE

- a) Water pollution is contamination of water bodies by discharge of pollutants directly or indirectly into water bodies without adequate treatment to remove harmful compounds.
- i) Explain the TWO main ways of measuring the quality of water. **(4 marks)**
  - ii) Discuss any FIVE causes of water pollution. **(10 marks)**
  - iii) Discuss THREE ways in which water pollution can be controlled. **(6 marks)**

### QUESTION TWO

- a) Air pollution refers to the release of pollutants into the air that are detrimental to human health and the planet as a whole.
- i) Discuss the various types of air pollutants categorizing the primary and secondary pollutants. **(10 marks)**
  - ii) By using examples, discuss the various sources of air pollution. **(5 marks)**
  - iii) Citing the relevant pollutants, discuss the various harmful effects of air pollutants. **(5 marks)**

### QUESTION THREE

- a) The planet contains many gases which surface a layer and prevents unwanted radiations to reach the surface. The greenhouse gas absorbs and emits these radiations within the range which ultimately causes greenhouse effect.
- i) List any FIVE common greenhouse gases in the earth's atmosphere. **(5 marks)**
  - ii) Discuss the consequences of global warming. **(10 marks)**
  - iii) Explain how global warming can be controlled. **(5 marks)**

### QUESTION FOUR

- a) Acid rain refers to a mixture of deposited material both wet and dry coming from the atmosphere containing more than normal amounts of nitric and sulfuric acid.
- i) Discuss the TWO major forms in which acid deposition occurs to form acid rain. **(4 marks)**
  - ii) State and explain any FIVE significant effects of acid rain on the world environment and public health. **(10 marks)**
  - iii) Hence or otherwise, enumerate any THREE remedies of acid rain. **(6 marks)**

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