MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR
FOURTH YEAR SECOND SEMESTER

SCHOOL OF PURE APPLIED AND HEALTH SCIENCES
BACHELOR OF SCIENCE IN CHEMISTRY

COURSE CODE: CHE 4136-1

COURSE TITLE: ENVIRONMENTAL CHEMISTRY

DATE: 15/12/2023 **TIME: 1100-1300 HRS**

INSTRUCTIONS TO CANDIDATES

1. Answer Question **ONE** and any other **TWO** questions.
2. All Examination Rules Apply.

SECTION A

QUESTION ONE (20MKS)

a) Describe the components of the environment **(2mks)**

b) Using chemical equations, distinguish primary from secondary pollutants **(4mks)**

c) Distinguish pollution from contamination **(2mks)**

d) Describe how acid rain is formed and explain clearly its effects on the environment **(5mks)**

e) Stratospheric pollution depletes ozone. Explain **(4mks)**

f) Explain the physical parameter of water pollution **(3mks)**

SECTION B

Answer any TWO questions from this section, each question carries 15 marks

QUESTION TWO (15MKS)

a) Explain primary treatment of sewage **(5mks)**

b) State two effects of depletion of ozone **(2mks)**

c) Explain the two classifications of anthropogenic pollutants **(4mks)**

d) Explain the environmental effects of two gases one produced by incomplete combustion of carbon and the other by the complete combustion of the same material **(4mks)**

QUESTION THREE (15MKS)

a) State two effects of acid rain **(2mks)**

b) Explain one way of controlling photochemical smog **(2mks)**

c) State the origin any two greenhouse gases **(2mks)**

g) Explain the causes and effects of global warming **(5mks)**

d) Explain the effects of aerobic and anaerobic bacteria as pollutants **(2mks)**

e) Explain eutrophication **(2mks)**

QUESTION FOUR (15MKS)

a) Explain any two effects of soil pollution **(4mks)**

b) Explain clearly the formation of ozone in the atmosphere **(4)**

c) State the methods of solid waste disposal **(4mks)**

d) Explain how the analysis of SO_2 in air can be done **(3mks)**

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