



# CATHOLIC UNIVERSITY OF EASTERN AFRICA

**A. M. E. C. E. A**

P.O. Box 62157

00200 Nairobi - KENYA

**SPECIAL/SUPPLEMENTARY EXAMINATION** Telephone: 891601-6

**JANUARY – APRIL 2020 TRIMESTER**

**FACULTY OF SCIENCE**

**DEPARTMENT OF NATURAL SCIENCE (CHEMISTRY)**

**REGULAR PROGRAMME**

**CHEM 310: ENVIRONMENTAL CHEMISTRY**

**Date: APRIL 2020**

**Duration: 2 Hours**

**INSTRUCTIONS: Answer Question ONE and ANY OTHER TWO Questions**

Q1. a) i) What unique role does water's existence in the three physical states play in the environment. (4

marks)

ii) Explain the environmental importance of the organometallic compounds in water bodies. (6

marks)

b) Describe the sources of soil pollution (10 marks)

c) Explain the biochemical effects of Oxides of Sulphur (SO<sub>x</sub>), Nitrogen (NO<sub>x</sub>) and Carbon monoxide. (10 marks)

Q2. The environmental devastation caused by an oil spill is not new to the public. Given that the density of petroleum-based oil is approximately 0.9 g/mL and the density of water is 1.0 g/mL, discuss the implications on aquatic and terrestrial life and clean-up operations.

**(20 marks)**

- Q3. Discuss the evolution and progress being made in devising environmentally safe methods for storing radioactive wastes **(20 marks)**
- Q4. Discuss the impact of energy on the economic growth of any country **(20 marks)**
- Q5. Discuss the mechanisms and the effects of ozone layer depletion **(20 marks)**

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