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QUALIFICATION : **BACHELOR of SCIENCE**	
QUALIFICATION CODE: **08BOSH**	LEVEL: **8**
COURSE: **ENVIRONMENTAL POLLUTION, MONITORING & REMEDIATION**	COURSE CODE: **EPM821S**
DATE: **NOVEMBER 2023**	SESSION: **1**
DURATION: **3 HOURS**	MARKS: **100**

FIRST OPPORTUNITY: QUESTION PAPER

EXAMINER: *Dr. Mpingana N. Akawa*

MODERATOR: *Prof. James Abah*

INSTRUCTIONS

1. Start each question on a new page
2. Please write neatly and legibly.
3. Do not use the left side margin of the exam paper. This must be allowed for the examiner.
4. No books, notes and other additional aids are allowed.
5. Mark all answers clearly with their respective question numbers.

PERMISSIBLE MATERIALS

1. Non-Programmable Calculator

ATTACHEMENTS

This Question Paper consists of 2 pages including this front page

QUESTION 1 [20]

a) List the four activities identified as priorities for the improvement of Environmental Impact Assessment (EIA) systems. (4)

b) Discuss the near-term and long-term approaches for the mitigation of climate change. (6)

c) Briefly explain each step involved in the management of hazardous, in order of priority. (10)

QUESTION 2 [20]

a) Differentiate between the following terms. (6)

i. External and internal treatments

ii. Sodic and saline soils

iii. Bioaccumulation and Biomagnification

b) Define residence time and explain its importance in water pollution studies. (4)

c) Explain how the hydrologic (water) cycle contributes to groundwater pollution and discuss the prevention measures for groundwater pollution. (10)

QUESTION 3 [20]

a) With the aid of chemical reactions, explain how acid mine drainage (AMD) is formed. (10)

b) Discuss the ecological impact of acid mine drainage. (5)

c) Explain how AMD can be prevented. (5)

QUESTION 4 [20]

4.1 Discuss the concept of risk and explain how it is determined. (6)

4.2 Discuss how risk has been mitigated using the following approaches:

a) Command and Control approach (7)

b) The green, self-sustaining approach (7)

QUESTION 5 [20]

Discuss at least 5 principles of Green Chemistry that are of particular relevance to either biofuels, renewable energy, chemical synthesis or nuclear energy.

END OF QUESTION PAPER