

THE NATIONAL UNIVERSITY OF LESOTHO

BSc. ENVIRONMENTAL HEALTH

1st SEMESTER EXAM – JANUARY, 2024

ENVIRONMENTAL POLLUTION AND CONTROL (EHS3204)

DURATION: 3 HRS

MARKS: 100

INSTRUCTIONS:

Answer **ALL** the questions

Section A

Describe the following terms as used in Environmental Pollution and Control. **[30]**

- a. Environmental Media
- b. Air Pollution
- c. Conservative pollutant
- d. Point sources of pollution
- e. Denitrification
- f. Mass balance
- g. Traffic Noise Index
- h. Soil contamination
- i. Gas chromatography
- j. Photochemical smog

Section B

Question 1

- a. State any three sources of organic pollutants in water **[3]**
- b. Name and describe three categories of toxins produced by Freshwater BGA. **[6]**
- c. Describe noise pollution and its adverse effects onto humans. **[10]**

Question 2

- a. Describe properties of soil as an environmental media, which may affect dispersion of pollutants and how they help to disperse pollutants. **[10]**
- b. A non-reactive contaminant has been spilled on soil in the proximity of a water body (about 20m). It has to be established how long it would take the contaminant to reach the water body.

Using the following: **Darcy's flux** as 8 cm/day; **Porosity** of saturated soil as 0.4, calculate the time it would take for the contaminant to travel the mentioned distance. **[6]**

- c. With the help of well-labeled diagrams, provide hypothetical plumes that show how one-time source of contamination in soil differs from a continuous source. **[8]**

Section C

Question 1

State any five natural sources of air pollution **[5]**

Question 2

To what extent do you think Lesotho contributes to greenhouse effect and climate change? **[10]**

Question 3

Explain how the following are used to control air pollution from stationary sources. **[12]**

- a. Catalytic incinerators
- b. Biofilters
- c. Absorbers