

The National University of Lesotho

B.Sc. Supplementary Examination

PG 3401 : Environmental Water Quality

August, 2023

Marks: 100

3 Hours

Instructions:

- Answer any **four (4)** questions.
 - Where applicable illustrate your answer with equations and diagrams
 - Each question carries 25 marks.
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Question 1

Explain what you understand by the following terms:

- (a) Eutrophication
- (b) Thermal stratification
- (c) Thermal pollution
- (d) Anaerobic oxidation
- (e) 5-day BOD

(5 each)

[25]

Question 2

With the help of a well labelled diagram, discuss the processes that take place in a stratified lake and explain how they affect the quality of water.

[25]

Question 3

Explain how the occurrence of the following hydrological cycle processes affects the water quality of a surface water body

- (i) Precipitation to the water body
- (ii) Evaporation from the water body
- (iii) Infiltration and percolation from the water body
- (iv) Overland flow and runoff to the water body
- (v) Rising of the water table to level of the water body

(5 each)

[25]

Question 4

Why is it important to monitor the quality of a water body and what precautions have to be taken in order to ensure that the monitoring process is representative of the quality of a water body?

[25]

Question 5

Compare and contrast the effects of chemical, physical and biological contamination of water.

[25]

Question 6

Discuss the breakpoint chlorination of drinking water.

[25]