



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DEGREE IN ENVIRONMENTAL HEALTH

FINAL EXAMINATION PAPER 2007/2008

Title of paper	:	WATER QUALITY MANAGEMENT I
COURSE CODE	:	EHS 582
DURATION	:	2 HOURS
MARKS	:	100
INSTRUCTIONS	:	READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
	:	ANSWER ANY FOUR QUESTIONS
	:	EACH QUESTION CARRIES 25 MARKS
	:	WRITE NEATLY & CLEARLY
	:	NO PAPER SHOULD BE BROUGHT INTO NOR OUT OF THE EXAMINATION ROOM
	:	BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER

DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR.

Question 1.

Write brief notes on the following water pollution parameters, stating how they have impact on water quality.

i) Nutrients (10)

ii) Micro- pollutants (organics) (15)

Question 2.

A) With the aid of a diagram, discuss stratification process in a reservoir and how it affects water quality. (15)

B) Discuss the Nutrients (Nitrogen and Phosphorus) as limiting factors for algae growth. (10)

Question 3.

Discuss the biological water quality monitoring under the following.

i) Monitoring with macro-invertebrates (10)

ii) Early-warning bio-monitoring (15)

Question 4.

i) With an aid of a sketch, describe the transport process of groundwater contamination, illustrating a typical plume pollutants. (15)

ii) Explain three (3) reactions that can occur due to contamination of groundwater and give examples. (10)

Question 5.

The so called Vollenweider Model is commonly used for prediction of eutrophication in Lakes and Reservoirs.

Describe this model by means of a graph and discuss what assumptions are made in developing this model. (25)