



UNIVERSITY OF SWAZILAND
Faculty of Health Science

Department of Environmental Health
Sciences

Final Examination 2009

Title of paper: WATER QUALITY MANAGEMENT1

Course code: EHS 582

Time allowed: 2 hours

Marks allocation: 75 Marks

Instructions:

- 1) Read the questions and instructions carefully
- 2) Answer THREE (3) questions
- 3) Each question is weighted 25 marks
- 4) Write neatly and clearly
- 5) Begin each question on a separate sheet of paper

This paper is not to be opened until the invigilator has granted
permission

Main Examination : December 2009

EHS 582 I

Question 1.

- A) With an 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 2.

Discuss the biological water quality monitoring under the following.

- i) Monitoring with macro-invertebrates (15)
- ii) Early-warning bio-monitoring (10)

Question 3.

- 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 4.

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

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