



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

Department of Environmental Health
Science

Main Examination 2012

Title of paper: WATER QUALITY MANAGEMENT II

Course code: EHS 583

Time allowed: 2 HOURS

Marks allocation: 100 Marks

Instructions:

- 1) Answer **Four (4)** questions
- 2) Each question is weighted 25 marks
- 3) Write neatly and clearly
- 4) Begin each question in a separate sheet of paper

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

Main Examination: May 2012

EHS 583 II

Question 1.

There are different approaches to Water Pollution Control, describe the following approaches

- i) The Pollution Prevention Approach. (15)
- ii) The Carrying Capacity Concept Approach. (10)

Question 2.

Discuss the public health environmental impacts of the following pollutants in water

- i) Eutrophication. (10)
- ii) Disinfection by-products (15)

Question 3.

The use of wastewater for agriculture is a very old practice and land disposal was the first wastewater treatment system.

- i) What are the limiting factors for the rate of application for the wastewater? (15)
- ii) Give and explain two (2) categories of risks associated with the re-use of wastewater for agriculture. (10)

Question 4.

In the new Swaziland Water Act, 2003, The Department of Water Affairs have since been established. As a Director of the new Department under this Act:

How would you develop a Capacity Building for a Water Pollution Control in the Department? (25)

Question 5.

With regard to Water Qualities Prediction and Simulation approach adopted, water quality models can also be classified as mathematical model representation.

- i) Describe and give the differences between empirical and deterministic models. **(15)**
- ii) You are given the Streeter-Phelps equation and its integration. Analyse the Different processes involved and draw the corresponding curves. **(5)**
- iii) Name and explain the parameters involved. **(5)**