UNIVERSITY OF SWAZILAND
Faculty of Health Sciences
Department of Environmental Health Science

DEGREE IN WATER RESOURCES AND ENVIRONMENTAL HEALTH MANAGEMENT

MAIN EXAMINATION PAPER DECEMBER, 2018

TITLE OF PAPER	:	WATER QUALITY MANEGEMNT II
COURSE CODE	:	EHS / EHM 421
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 OR 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

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

i) Pollution Prevention (PP) approach **(10)**

ii) Carrying Capacity Concept (CCC) approach **(15)**

TOTAL 25 MARKS

Question 2

What are the environmental impacts of the following pollutants?

i) Oil Pollution **(10)**

ii) Toxic Pollution **(15)**

TOTAL 25 MARKS

Question 3

Discuss the Environmental impacts of the following in water, regarding pollution

i) Re-use of sewage for agricultural purpose. **(10)**

ii) Disinfection by-products **(15)**

TOTAL 25 MARKS

Question 4

Describe the Public Health impact of the following, regarding pollutants:

i) Water and Diseases **(5)**

ii) Water-borne mechanism **(5)**

iii) Water-based mechanism **(5)**

iv) Water-washed mechanism **(5)**

v) Water-related mechanism **(5)**

TOTAL 25 MARKS

Question 5

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

i) What ware the limiting factors for the rate of application for the wastewater **(6)**

ii) Give and explain two (2) categories of risks associated with re-use of wastewater for agriculture. **(4)**

B) With regard to the mathematical approach adopted, water quality models can be classified into three types:.

Under each of the following models discuss how it can be used in predction and simulation of Water Quality.

i) Empirical or Statistical model **(5)**

ii) Stochastic model **(5)**

iii) Deterministic model **(5)**

TOTAL 25 MARKS