



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

DEGREE IN ENVIRONMENTAL HEALTH SCIENCE

RE-SIT EXAMINATION 2017

TITLE OF PAPER	:	RURAL WATER SUPPLY
COURSE CODE	:	EHS 211
DURATION	:	2 HOURS
MARKS	:	100
INSTRUCTIONS	:	READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
	:	ANSWER <u>ANY FOUR</u> QUESTIONS
	:	EACH QUESTION <u>CARRIES 25</u> 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

List and explain five (5) reasons of importance for Environmental Health Officers to study Water Supply and Sanitation

25 MARKS

QUESTION 2

With an aid of a diagram, describe the hydrological cycle under the following:

- i) Evapotranspiration (5)
- ii) Condensation (5)
- iii) Precipitation (5)
- iv) Infiltration and Percolation (5)
- v) Surface run-offs (5)

TOTAL 25 MARKS

QUESTION 3

Nitrogen and Phosphorus are nutrient parameters of concern in water supply. Describe these nutrients under the following:

- i) Their sources (10)
- ii) Impacts in water quality (10)
- iii) How they are measured in water (5)

TOTAL 25 MARKS

QUESTION 4

As an Environmental Health Officer, you have been requested by the Matsapha Town Council to design a sampling and analysis programme for Little Usuthu (Lusushwana) River as it passes through Matsapha Industrial Area.

- i) What are the steps that should be taken to design a sampling and analysis programme (10)
- ii) What are the factors that should be controlled when samples are to be taken? (10)
- iii) How will the general “activity” of aquatic bacteria be measured? (5)

TOTAL 25 MARKS

QUESTION 5

As an Environmental Health Officer in charge of a rural area in the Lubombo region with a population of 2000 inhabitant, a water supply scheme is planned for the area with groundwater as a source.

- i) How would the construction of the scheme be organized and carried out? (10)
- ii) What steps are taken to ensure its portability and fitness for human consumption? (5)
- iii) What role would each family play to ensure clean domestic water supply to the community? (5)
- iv) State two (2) factors that are likely to contaminate the groundwater water supply (5)

TOTAL 25 MARKS