



UNIVERSITY OF SWAZILAND

Faculty of Health Sciences

Department of Environmental Health Science

Main Examination 2015

BSc. in Environmental Health Science

Title of paper: RURAL WATER SUPPLY TECHNOLOGY

Course code: EHM 205

Time allowed: 2 HOURS

Marks allocation: 100 Marks

Instructions:

- 1) Answer **ANY FOUR** questions
- 2) Each question carries **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: December 2015

EHM 205

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)