



UNIVERSITY OF SWAZILAND

Faculty of Health Sciences

Department of Environmental Health Science

Supplementary 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

Supplementary Examination: July, 2015

EHM 205

QUESTION 1.

There are three main sources of water for public supply!

- i) Describe how water is obtained from each source? (15)
- ii) Comment on the advantages and disadvantages of each water source in terms of capital cost reliability of supply and environmental impact. (10)

TOTAL 25 MARKS

QUESTION 2.

A water supply for a small village under your area of jurisdiction is obtained from a protected point spring. At 9:00 am you are advised that a number of people in the village have become ill overnight and that the water coming out of the standpipes “has a funny smell”

As an Environmental Health Officer of the area, discuss how to mitigate the situation.

25 MARKS

QUESTION 3.

Water Quality problems in springs associated with resource, protection, distribution and plumbing are many and varied. With specific reference to the following, outline the problems that exist for statutory agencies of water supplies.

- i) Water resources and nitrate (15)
- ii) Distribution and carbonates (10)

NB: Within your answer suggest remedial measures that may be introduced to ensure that water from protected springs comply with the appropriate standards as laid down under the Swaziland Water Act, 2003, Water Quality Standards

TOTAL 25 MARKS

QUESTION 4.

You are appointed as an Environmental Health Officer in charge of a rural area (in the Low-veld) with a population of 2 000 people. A water scheme is planned for the area with water from underground as a source.

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

TOTAL 25 MARKS

QUESTION 5.

“As an Environmental Health Officer you are required to collect water samples from a standpipe for bacteriological and chemical analysis”

- i) What are the apparatus required to undertake this task (10)
- ii) How should sampling be carried out in each case? (15)

TOTAL 25 MARKS