



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

Department of Environmental Health Science

Main Examination 2013

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 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: November, 2013

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 what you would do 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 you organize the community and carry out the construction of the scheme? (10)
- ii) What steps would you take to ensure its potability and fitness 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 likely 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 apparatus would you take with you to undertake this task (10)
- ii) How would you proceed with sampling in each case? (15)

TOTAL 25 MARKS