



**UNIVERSITY OF SWAZILAND**  
Faculty of Health Science

Department of Environmental Health  
Sciences

**Main Examination 2009**

Title of paper: RURAL WATER SUPPLY TECHNOLOGY

Course code: EHS 212

Time allowed: 2 hours

Marks allocation: 100 Marks

Instructions:

- 1) Read the questions and instructions carefully
- 2) Answer ALL questions
- 3) Each question is weighted 25 marks
- 4) Write neatly and clearly
- 5) Begin each question on a separate sheet of paper

This paper is not to be opened until the invigilator has granted  
permission

Main Examination : December 2009

EHS 212

QUESTION 1.

You are appointed as an Environmental Health Officer in charge of a rural area ( in the Low-veld Lavumisa Area) with a population of 2 000 inhabitant. A water supply scheme is planned for the area with water from underground and is **very hard water**.

- a) Give your suggestions on how the construction of the scheme should be organized and carried out. (10)
- b) What steps would you take to ensure its potability and fitness for human consumption ? (5)
- c) What role would each family play to ensure clean domestic water supply to the household? (5)
- d) State two (2) factors likely to contaminate the underground water supplies. (5)

QUESTION 2.

With an aid of a diagram, describe spring protection under the following headings:

- a) Definition of Seepage Spring. (3)
- b) Data necessary before protection is done, and the reasons why such data is necessary. (7)
- c) Protection details of the spring. (15)

QUESTION 3.

Physical water quality parameters define those characteristics of water that respond to the senses of sight, touch, taste and smell:

Discuss the sources and impacts of taste and odors in water supplies. (25)

QUESTION 4.

As an Environmental Health Officer, you are required to collect water samples from a **dam** for **bacteriological** and **chemical** analyses. What apparatus would you take with you and how would you proceed sampling in each case. (25)