



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

Department of Environmental Health Science

Supplementary Examination 2013

Diploma 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 **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

QUESTION 1.

With an aid of a diagram, describe the Hydrological Cycle, paying attention to the five (5) main components or phases. **(25)**

QUESTION 2.

Total dissolved solids are chemical parameters of concern in water supply. Describe these parameters under the following:

- a) Sources of pollution. **(10)**
- b) Impacts on water quality. **(10)**
- c) How would you measure them in water supplies? **(5)**

QUESTION 3.

Describe groundwater sources and their development methods **(25)**

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 inhabitants. A water scheme is planned for the area with water from underground as a source.

- a) How would you organize and carry out the construction of the scheme? (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 households? (5)
- d) State two (2) factors likely to contaminate the ground water supply. (5)

QUESTION 5.

- a) Describe the use of *Escherichia coli* and total coliform counts as indicators of contamination of water by pathogenic organisms. (15)
 - b) Give a brief explanation for both:
 - i) Advantages (5)
 - ii) Disadvantages (5)
- involved in using these organisms as indicators.