



**UNIVERSITY OF SWAZILAND**  
Faculty of Health Sciences

**Department of Environmental Health Science**

Supplementary Examination 2016

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, 2016

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 the answer what remedial measures 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**

- i) Why do plumes of ground water that have become polluted with high levels of nutrients from nearby agricultural activities exhibit very consistent progressive change in the type of microorganisms present in their activities (15)
  
- ii) What factors control these processes (10)

**TOTAL 25 MARKS**

**QUESTION 5**

“An Environmental Health Officer is 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**

