



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DIPLOMA IN ENVIRONMENTAL HEALTH

FINAL EXAMINATION PAPER 2006

TITLE OF PAPER : WATER SUPPLY TECHNOLOGY

COURSE CODE : EHS 202

DURATION : 3 HOURS

MARKS : 100

INSTRUCTIONS : ANSWER ANY FIVE QUESTIONS

: EACH QUESTION CARRIES 20 MARKS.

: NO PAPER SHOULD BE BROUGHT INTO NOR
OUT OF THE EXAMINATION ROOM.

: BEGIN EACH QUESTION ON A SEPARATE
SHEET OF PAPER.

**DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS
GRANTED BY THE INVIGILATOR.**

Final Examination

QUESTION ONE.

- A) *What are the five main components/ phases of the Hydrological Cycle.* (5)
- B) Describe briefly each component/phase mentioned above. (15)

QUESTION TWO.

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

- A) Definition of Rock-Fissure spring (3)
- B) Data necessary before protection is done, and reasons why such data is Necessary. (7)
- C) Detail the protection of the spring. (10)

QUESTION THREE.

- A) What are the four disease transmission mechanism related to water supply and sanitation. (4)
- B) Discuss in details each mechanism mentioned above, giving at least two (2) diseases for each mechanism. (16)

QUESTION FOUR.

- A) Chemical coagulation in water treatment plant is accomplished by the addition Trivalent metallic chemicals, name two (2) of these. (4)
- B) Name four mechanism that occur during coagulation and flocculation. (4)
- C) Describe briefly the four mechanism during coagulation and flocculation. (12)

QUESTION FIVE.

“Filtration is one of the physical processes in a convectional water treatment plant”

- A) Compare and contract between Rapid Sand and Slow Sand filtration. (10)
- B) State advantages and disadvantages of both filters (10)

QUESTION SIX.

A) Describe the action of chlorine in water under the following:

i) Monochloramines (3)

ii) Dichloramines (3)

iii) Trichloramines/ Nitrogen Trichlorides (3)

B) With an aid of a diagram, explain the chlorine residual and break-point

Chlorination. (11)