



UNIVERSITY OF SWAZILAND
Faculty of Health Science

Department of Environmental Health
Sciences

Final Examination 2009

Title of paper: URBAN WATER TREATMENT TECHNOLOGY

Course code: EHS 213

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

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

Main Examination: May 2009

EHS 213.

QUESTION 1.

a) Preliminary Settling tank is one of the important components in a Convectional Water Treatment plant, explain why is it important and when is it needed in a treatment plant (10)

b) Water standards are very important in water supply! Support this statement. (15)

QUESTION 2.

a) Aluminium Sulphate is a coagulant used in water treatment. Compare its properties and that of Ferric Chloride, and which one would you recommend and Why? (15)

b) What are the properties of chlorine and what are the advantages over ultra-violet as a disinfectant. (10)

QUESTION 3.

“Activated Carbon is one the materials used in a convectional water treatment plant”

Describe in details the properties of this chemical, also state for what purpose is it used for in water treatment and how is it removed from water. (25)

QUESTION 4.

“Disinfection is the chemical process which kills micro-organisms in a convectional water treatment plant” using chlorine as a disinfectant!

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

i) Monochloramines (5)

ii) Dichloramines (5)

iii) Trichloramines (5)

b) With an aid of a diagram, describe the chlorine residual and break-point Chlorination. (10)