



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DIPLOMA IN ENVIRONMENTAL HEALTH

FINAL EXAMINATION PAPER 2007/2008

TITLE OF PAPER	:	SEWAGE TREATMENT
COURSE CODE	:	EHS 204
DURATION	:	2 HOURS
MARKS	:	75
INSTRUCTIONS	:	READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
	:	ANSWER ANY THREE (3) QUESTIONS
	:	EACH QUESTION CARRIES 25 MARKS
	:	WRITE NEATLY & CLEARLY
	:	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

QUESTION ONE

- A) What makes biological treatment the most favored method for waste water treatment? [5]
- B) When does the need for constructing foundations arise in an ordinary drainage construction project? [5]
- C) Mention the three disadvantages associated with the use of concrete pipes in a drainage system. [6]
- D) Differentiate between BOD and COD [6]
- E) Give an example where the knowledge of drainage can be useful to the work of an Environmental Health Officer. [3]

QUESTION TWO

- A) Draw a rough sketch to show the linkages that exist in a drainage system up to a soakage pit and a sewage treatment plant respectively [10]
- B) Why is drain ventilation important? [5]
- C) You are assigned as an EHO the Ngwenya new industrial site where there is a textile firm employing a total compliment of 400 men. How many WCs and Urinals would you recommend for this firm? [6]
- D) You are asked to describe about the characteristics of sewage to an educated audience. What convincing points would you discuss to ensure that your audience on this subject is left more knowledgeable at the end of your presentation? [4]

QUESTION THREE

- A) The water borne method of excreta disposal is often divided into primary and secondary treatment. Give examples of both and state reasons why they are referred as such [4]
- B) Comment on the two types of drain testing methods? [5]
- C) List the three categories of drainage fittings and discuss one of them in details. [6]
- D) Differentiate between aerobic, facultative and anaerobic modes of waste water decomposition in waste stabilization ponds. Draw up a sketch of the stabilization ponds and indicate which pond operates in the anaerobic modes. [10]

QUESTION FOUR

- A) With the aid of a sketch define the following
- a) Soakaway
 - b) Separate systems
 - c) Combined system
 - d) Manhole
 - e) Inspection chamber [15]
- B) What is a sanitary fitting? And give three different types of sanitary fittings [6]
- C) Give four requirements of a good design of a sanitary fitting [4]