



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences
DIPLOMA IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2010

TITLE OF PAPER	:	EXCRETA AND SEWAGE MANAGEMENT
COURSE CODE	:	EHS 204
DURATION	:	2 HOURS
MARKS	:	100 MARK
INSTRUCTIONS	:	READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
	:	ANSWER ANY FOUR 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

1. Mention five objectives of sewage treatment. (10 marks)
2. Explain five sewage treatment methods that are classified as primary treatment. (10 marks)
3. What does population equivalent in sewage treatment mean? (5 marks)

QUESTION TWO

1. Why should municipalities have to set standards for sewage discharge from industries into public sewers? (5 marks)
2. Define the term; secondary treatment in sewage treatment. (5 marks)
3. Describe the operation of activated sludge process in sewage treatment. (15 marks)

QUESTION THREE

Under normal operation sewage treatment plant where are the following sewage constituents removed?

- i. Suspended solids
- ii. BOD₅
- iii. Nutrients (3 marks)

1. What are the major bacterial activities in the following ponds in the waste stabilization ponds?
 - i. Anaerobic.
 - ii. Facultative.
 - iii. Maturation. (3 marks)
2. What are the depths of these ponds? (3 marks)
3. What is the normal cause of odour in the waste stabilization ponds, system of sewage treatment? How can this problem of odour be minimized? (10 marks)
4. Describe the algal bacteria symbiosis in sewage treatment. (6 marks)

QUESTION FOUR

1. Describe how you will test new drains before cover and use (12 marks)
2. Describe how will go about testing old drain's efficiency (13 marks)

QUESTION FIVE

1. With the use of a sketch, show a trap and the depth of a seal. Explain its purpose. (15 marks)
2. Explain five ways by which a seal can be destroyed. (10 marks)