



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DIPLOMA IN ENVIRONMENTAL HEALTH SCIENCES
FINAL EXAMINATION PAPER 2005

TITLE OF PAPER : EXCRETA AND SEWAGE MANAGEMENT

COURSE CODE : EHS 204

DURATION : 3 HOURS

MARKS : 100

INSTRUCTIONS :

- READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
- ANSWER ANY FIVE QUESTIONS
- EACH QUESTION CARRIES 25 MARKS.
- WRITE NEATLY AND 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 three areas in the sewage treatment plant where sedimentation takes place and explain the quality or type of sediments. (10)
2. Mention five ways by which sludge from sewage treatment plant is suppose to be disposed off. (5)
3. Describe the activities of microbes in the domestic sewage treatment using stabilization ponds. (5)

QUESTION TWO

1. What does population equivalent in sewage treatment mean? (2)
2. Define the term primary treatment in sewage treatment. (5)
3. Explain five sewage treatment methods that are classified as primary treatment. (5)
4. Why should municipalities have to set standards for sewage discharge from industries into public sewers? (2)
5. Describe the algal bacteria symbiosis in sewage treatment. (6)

QUESTION THREE

1. With the use of a sketch, show a trap and the depth of a seal for wastewater house drainage and explain the precautions to be taken when designing a trap. (10)
2. Explain five ways by which a seal can be destroyed. (10)

QUESTION FOUR

1. Name three types of sanitary fittings. (3 marks)
2. Describe two ways by which a water closet (W/C) can be flushed. (10 marks)
3. Mention three types of urinals that can be used in male toilets. (3 marks)
4. Describe how fresh air can be circulated in the drains and sewer lines. (4 marks)

QUESTION FIVE

1. You are in charge of an area with a population of about 5 000 where there is pipe water supply but no sewerage services. Describe the method of excreta disposal you with recommend to the residents and give the reason for your choice. Description should include design and operation of the system. (10)
2. Mention five methods suitable for rural areas in Africa where water supply is scarce. (10)

QUESTION SIX

1. Mention and briefly explain five points you would consider when giving a health talk to rural communities in the lowveld of Swaziland for a campaign entitle "towards health for all by year 2020" (20)