



GRETSA UNIVERSITY - THIKA

UNIVERSITY EXAMINATIONS JANUARY – APRIL 2019 SEMESTER

CERTIFICATE IN ENVIRONMENTAL HEALTH

COURSE CODE: CIEH 055

COURSE TITLE: DRAINAGE AND HEALTH

DATE: 11 APRIL 2019

TIME: 3.00 PM – 5.00 PM

INSTRUCTIONS TO CANDIDATES

- A. SECTION A IS **COMPULSORY**.
- B. SECTION B: ANSWER ANY OTHER **THREE** QUESTIONS.
- C. **DO NOT** WRITE ANYTHING ON THIS QUESTION PAPER AS IT WILL BE AN EXAM IRREGULARITY.
- D. ALL ROUGH WORK SHOULD BE AT THE BACK OF YOUR ANSWER BOOKLET AND CROSSED OUT.

CAUTION: *All exam rooms are under CCTV surveillance during the examination period.*

SECTION A: COMPULSORY

MULTIPLE CHOICE QUESTIONS [1-5]

[ONE MARK EACH]

1. One of the following is not a role of the vent and the fly screen of a VIP latrine
 - A. They control odor
 - B. They exclude flies
 - C. They trap flies
 - D. Aesthetic value

2. A is a pipe or opening that brings outside air into the plumbing system and equalizes the pressure on both sides of a trap to prevent trap seal loss. Arson
 - E. Trap
 - F. Vent
 - G. Fly screen
 - H. Fitting

3. So when choosing a latrine we must consider the following apart from:
 - A. Are people washers or wipers?
 - B. climate
 - C. Type of soil.
 - D. Age of buildings around
 - E. Materials and skills available locally.

4. Which of the following is not a disease caused by poor excreta disposal
 - A. Cholera
 - B. Typhoid and para-typhoid fevers
 - C. Hepatitis C
 - D. Infant diarrheas

5. One of the following is not an excreta borne disease transmission route
 - A. Via water, milk and food.
 - B. Flies and other insects.
 - C. Blood
 - D. Direct contact with faeces.

SHORT ANSWER QUESTIONS: ANSWER ALL QUESTIONS IN THIS SECTION

1. Define the following terminologies [5 marks]
 - i. Drainage
 - ii. Conservancy
 - iii. Plumbing
 - iv. Sanitation
 - v. Night soil
2. Outline four main components of a ventilated improved pit latrine [4 marks]
3. Outline four reasons that would lead to water seal loss of a fixture [4 marks]
4. Briefly explain four types of traps [4 marks]
5. Briefly explain factors important to consider while conserving excreta [4 marks]
6. Outline three disadvantages of traditional pit latrines [3 marks]
7. Outline three constraints of using VIP latrines [3 marks]
8. Elucidate four factors necessary for excreta borne disease transmission [4 marks]
9. Briefly explain four categories of diseases caused by poor excreta disposal [4 marks]

SECTION B**[CHOOSE ANY THREE QUESTIONS]**

1.

A sound drainage system is very important when it comes to proper liquid waste management. In regard to this:

- a) Explain five principles of a sound drainage system [10 marks]
- b) Explain three major categories of drainage systems together with their advantages and disadvantages [10 marks]

2.

Excreta play a major role in the spread of diseases

- a) Explain five benefits of proper excreta disposal [10 marks]
- b) Explain five factors considered when selecting a method of excreta disposal [10marks]

3.

- a) Explain the procedure of upgrading an ordinary pit latrine into a VIP [12 marks]
- b) Explain four major factors to consider before one upgrades a particular pit latrine [8marks]

4.

Bucket latrines are still found in many towns and cities in Africa, Latin America and Asia,

- a) Explain five methods used for disposing the bucket contents [10 marks]
- b) Explain two major ways of collecting the night soil [4 marks]
- c) Explain the three major components of a bucket latrine [6 marks]