



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC AND COMMUNITY HEALTH

SECOND YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (PUBLIC HEALTH)

HPH-212: CONSERVANCY AND DRAINAGE

DATE: 27/5/2022

TIME: 8.30-10.30 AM

INSTRUCTIONS:

This paper consists of two sections A and B

SECTION A

Specific Instructions

- This section has one question
- The question is compulsory
- The question is 30 marks

QUESTION ONE (30 MARKS)

- a) Define the following terms (3 marks)
- Conservancy systems
 - Natural leaders
 - Sanitation
- b) Highlight the disadvantages of Community Led Total Sanitation (CLTS) (3 marks)
- c) Using a diagram, describe the channels of disease transmission from excreta to humans. (3 marks)
- d) Highlight the importance of community involvement in designing and selecting appropriate excreta disposal system. (4 marks)
- e) A public health officer designed a pit latrine for a family of five members intended to last for 16 years. The pit was 1 metre wide and 1.5 metres long and digging was in progress. Given solids accumulation rate ($0.05\text{m}^3/\text{year}$), Determine;
- The effective volume of the pit
 - Desired depth (5 marks)
- Assume the pit is 0.5m full to the brim.

- f) Explain four (4) reasons why it is important to recycle human wastes (4 marks)
- g) State five (5) disadvantages of a bucket latrine as a means of excreta disposal (5 marks)
- h) Enumerate the factors you will consider in order to make a conservancy method acceptable to the community (3 marks)

SECTION B:

Specific Instructions

- **This Sections has four (4) questions**
- **Answer any two (2) questions**
- **Each question is 20 marks**

QUESTION TWO (20 MARKS)

- a) Discuss the importance of effective human waste management system in developing countries (10 marks)
- b) A community has invited you to advise them on the construction of a pit latrine. In your presentation, discuss the factors that they will consider when siting the pit latrine.(10 marks)

QUESTION THREE (20 MARKS)

- a) A campsite management has approached you to advise them on how to develop and use a trench latrine. Using a well labelled diagram, explain the features and functioning of a deep trench latrine including advantages and disadvantages. (15 marks)
- b) Explain the importance of learning conservancy to a public health officer. (5 marks)

QUESTION FOUR (20 MARKS)

- a) Explain the principles of ecological sanitation (eco-san). (10 marks)
- b) With the aid of a well labelled diagram, explain the operation of a VIP (ventilated improved pit) latrine (10 marks)

QUESTION FIVE (20 MARKS)

- a) You are a program officer working with an NGO in Northern Kenya. You are expected to construct pit latrines for use by the community, discuss the factors that would determine the provision and use of latrines by the community (10 marks)
- b) Discuss the burdens associated with inadequate water, sanitation and hygiene (WASH) facilities within a community (10 marks)