



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF HEALTH SCIENCES**  
**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE**  
**PUBLIC HEALTH**  
**3<sup>RD</sup> YEAR 1<sup>ST</sup> SEMESTER 2024/2025 ACADEMIC YEAR**  
**MAIN CAMPUS**

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**COURSE CODE:**

**HCB 1305**

**COURSE TITLE:**

**LIQUID WASTE MANAGEMENT**

**EXAM VENUE: LAB 11**

**STREAM: BSc Public/ Comm. Hlth & Dev**

**DATE: 13/1/25**

**EXAM SESSION: 9-11.00 AM**

**TIME: 2.00 HOURS**

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**Instructions:**

- 1. Answer all the questions in Section A and 2 questions in Section B.**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

**Section A: ANSWER ALL QUESTIONS(30 marks).**

1. Describe any FOUR characteristics of wastewater (4 marks)
2. Describe any four sanitary fittings commonly used in houses (4 marks).
3. List any THREE drain tests (3 marks)
4. Explain the function of an inspection chamber (3 Marks)
5. Name Four Acts of parliament that play a role in regulating Drainage construction in Kenya (4 Marks)
6. Explain when the following drain materials will be the most appropriate choice.(4 marks)
  - a) Cast iron
  - b) Polyvinyl chloride (PVC)
7. Explain the difference between Biochemical Oxygen demand from chemical oxygen demand (4 marks)
8. What is the standard test for efficiency of waste water treatment system (2 marks)
9. Name two waste water treatment methods (2 marks)

**Section B: ANSWER ANY TWO QUESTIONS(40 Marks)**

1. County Governments (Local Authorities) supply domestic water and also ensure waste water is managed appropriately. Discuss why the obligation of liquid waste management is given to the County Governments by Law.(20 Marks)
2. There are mainly two types of waste water drainage systems (One pipe and two pipe system).Explain the differences in the two systems providing the advantages and disadvantages of each system(20 marks)
3. A septic Tank is one of the oldest and simplest waste treatment plant. Explain the design principles and the optimal construction and operation of A septic Tank (20 marks)
4. (a). Describe appurtenances in waste water management (10 marks)  
(b). Explain the standard regulations for the use of appurtenances (10 marks)
5. (a). Describe any two drain tests conducted on drainage system explaining what determines the choice of the test (10 marks)  
  
(b). With the aid of a sketch diagram explain the operations of oxidation ponds as a waste treatment method (10 marks)