



MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES

DEPARTMENT OF HEALTH SCIENCES

THIRD YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (PUBLIC HEALTH)

HPH305: SOLID WASTE MANAGEMENT

DATE:

TIME:

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) | Explain three main goals of solid waste management | (3 marks) |
| b) | Highlight five (5) advantages of recycling solid wastes | (5 marks) |
| c) | Explain waste characterization as it applies to solid wastes | (4 marks) |
| d) | Identify four (4) factors that affect the frequency of waste collection | (2 marks) |
| e) | Explain the importance of integrated solid waste management | (3 marks) |

- f) Giving examples, explain four characteristics of hazardous wastes (4 marks)
- g) Explain the role of community involvement in solid waste management (4 marks)
- h) Highlight four (4) advantages of solid waste refuse analysis (2 marks)
- i) Explain three challenges to solid waste management in Kenya (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 environmental and health implications of poor landfill design with reference to the Love Canal (USA) incident (10 marks)
- b) Discuss sustainable solid waste management strategies in Kenya (10 marks)

QUESTION THREE (20 MARKS)

- a) Discuss the following solid waste management systems highlighting their merits and demerits (10 marks)
 - i. Incineration
 - ii. Composting
- b) Discuss the health risks facing the informal workers in the solid waste management sector (10 marks)

QUESTION FOUR (20 MARKS)

- a) “Solid wastes are a resource”. Discuss using examples (10 marks)
- b) As a public health officer in charge of solid waste management in Machakos University, you have been tasked with developing a solid waste management plan. Discuss the considerations and major parameters that you must consider during the design of an efficient solid waste management program (10 marks)

QUESTION FIVE (20 MARKS)

- a) Discuss the environmental health risks associated with improper disposal of electronic wastes in Kenya (10 marks)
- b) Using a diagram, explain the hierarchy of solid waste management giving relevant examples in each case (10 marks)