



"Investing in Africa's future"

**COLLEGE OF HEALTH AGRICULTURE AND NATURAL
SCIENCES**

NESN 308 INTEGRATED SOLID WASTE MANAGEMENT

END OF SECOND SEMESTER EXAMINATION

APRIL 2026

LECTURER: MS M. C. KUREHWATIRA

DURATION: 3 HRS

INSTRUCTIONS

Answer all questions in Section A and any **three** from Section B

Section A carries **40 marks** and each question in section B carries **60 marks**.

SECTION A: Answer **all** questions from this section.

Question 1

Rapid urban growth in African capitals is outpacing the capacity of municipal waste management systems. Collection is irregular, and landfills are quickly filling up.

- a) Discuss the challenges communities face due to insufficient waste infrastructure. [20]
- b) Suggest sustainable solutions to address waste management gaps. [10]
- c) Identify limitations or barriers that may prevent the implementation of these solutions.

[10]

[40]

]

SECTION B: Answer any **three** (3) questions from this section.

Question 2

With the aid of a labelled illustration, describe all the functional elements of solid waste management, making reference to an urban area of your choice. [20]

Question 3

With the aid of a well labelled flow diagram, give a detailed description of the Life Cycle Assessment process. [20]

Question 4

Give a detailed description of the Waste Hierarchy and its significance in Integrated Solid Waste Management. [20]

Question 5

Africa University is aiming to implement Cleaner Production strategies across campus. You have been appointed as a consultant to evaluate opportunities and challenges.

- a) Discuss the benefits the university would gain from implementing Cleaner Production strategies. [8]
- b) Describe four potential Cleaner Production interventions applicable to campus waste streams. [12]

Question 6

Critically evaluate the application of circular economy principles in managing campus waste. Use examples from at least two waste streams. [20]

END OF QUESTION PAPER!!!