



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

Department of BUILDING & Civil engineering

UNIVERSITY EXAMINATION FOR:

BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING

TCV 4410 SOLID WASTE MANAGEMENT & TREATMENT

END OF SEMESTER EXAMINATION

SERIES: JANUARY 2025

TIME: 2 HOURS

PAPER A

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **five** questions.

Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

QUESTION ONE (COMPULSORY) 20 Marks

- a) State six factors that influence the composition and rate of solid waste generation (6 marks)
- b) Sketch and label the solid waste hierarchy model (4 marks)
- c) Outline the landfill treatment (6 marks)
- d) State four factors to consider when selecting site for landfill (4 marks)

ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION TWO (20 Marks)

- a) Explain the process of leachate collection and control (10 marks)
- b) State four disadvantages of open dumping (4 marks)
- c) Explain the incineration process of treating solid waste (6 marks)

QUESTION THREE (20 Marks)

- a) Explain the following types of incinerators
 - i) Fixed grate
 - ii) Rotary kiln
 - iii) Fluidized (12 marks)

- b) State the roles of environmental officer at the main dump site (6marks)
(2 marks)
- c) Name the hazardous waste in solid waste management (2 marks)

QUESTION FOUR (20 Marks)

- a) Describe solid waste transfer station (10 marks)
- b) Explain solid waste and communicable diseases relation (10 marks)

QUESTION FIVE (20 Marks)

- a) State four goals of municipal solid waste management (MSWM) (4 marks)
- b) State the potential dangers of hazardous solid waste (4 marks)
- c) Outline the importance of involving stake holders in solid waste management
(8 marks)
- d) State four constraints in solid waste management (4 marks)