



**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

PROGRAMME: BSC ABE 4
BSC FSNT 4

COURSE CODE: ABE 405

TITLE OF PAPER: SANITATION AND WASTE MANAGEMENT

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: NONE

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO
OTHER QUESTIONS.

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN
GRANTED BY THE CHIEF INVIGILATOR**

SECTION A. COMPULSORY QUESTION**Question One**

a. Discuss the roles played by the following stakeholders in an integrated waste management system;

- | | | |
|------|------------------------------|----|
| i. | National government | /5 |
| ii. | Municipality | /5 |
| iii. | Residential waste generators | /5 |
| iv. | Industries | /5 |

20 marks

b. Describe the characteristics of special waste.

10 marks

c. Describe any two systems of recovering costs for a waste management system.

10 marks

SECTION B. ANSWER ANY TWO QUESTIONS**Question Two**

a. Describe the recommended methods for treating and disposing clinical waste.

10 marks

b. Describe what any two strategies that are used by municipalities to minimise generation and improve treatment and disposal of household waste.

10 marks

c. Describe the health and environmental risks associated with solid waste if poorly managed.

10 marks

Question Three

1. Discuss the factors considered when designing a waste management system in relation to the following;
 - i. The size of waste /5
 - ii. Site of waste disposal /5
 - iii. Public awareness /10 marks **20 marks**
2. Describe three environmental conditions you would consider before the construction of a septic tank. **10 marks**

Question Four

- a. Describe the stages involved in waste management hierarchy. **10 marks**
- b. Explain the meaning of the following terms as used in sanitation and waste Management, give examples where applicable;
 - i. Sanitation ponds /5
 - ii. On-site sanitation /5
 - iii. A leach-field /5
 - iv. Environmental sanitation /5 **20 marks**