

Y/D/TY


VIT
 Vellore Institute of Technology

 Course: BCLE215L
 Class NBR(s): 3729 / 3730
 Time: Three Hours

Final Assessment Test – April 2025
 - Waste Management

Slot: C1+TC1

Max. Marks: 100

- KEEPING MOBILE PHONE/ANY ELECTRONIC GADGETS, EVEN IN 'OFF' POSITION IS TREATED AS EXAM MALPRACTICE
- DON'T WRITE ANYTHING ON THE QUESTION PAPER
- Answer ALL Questions
(10 X 10 = 100 Marks)

1. Elaborate your understanding of the linear economy in waste management.
2. Discuss the functional elements of the solid waste management system.
3. a) A residential area of 1500 houses has an average of four residents per house. [5]
The following observations were made at the disposal site for one week to estimate the quantity of solid waste generated.

Type of Vehicle	Number of Trips	Volume (m^3)	Specific Weight (kg/m^3)
I	10	15	300
II	8	2	150
III	25	0.5	100

- Determine the unit rate of solid waste generation.
- b) A colony with a population of 65,000 generates solid waste at 2 kg/capita/day. [5]
The compacted specific weight of solid wastes in landfills is $650 kg/m^3$, and the average depth of compacted solid wastes in landfills is 5 m. Determine the required landfill area.

4. Categorize and classify the waste generated from Health Care Facilities.
5. Explain the classification of radioactive wastes based on various factors.
6. What are the different applications of recycling and reuse of scrap tires?
7. Tabulate the illustrative principles of circular design principle objectives.
8. Brief any five SDGs' contributions towards sustainable waste management and circular economy.
- 9.a) Discuss the various water reuse categories and their typical applications with appropriate examples.

OR

- 9.b) Define the term "self-purification" of streams and discuss the factors that affect the self-purification of streams.
- 10.a) Discuss the different properties that decide the hazardousness of waste.

OR

- 10.b) Briefly describe the common chemical processes used in hazardous waste treatment.

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