

630/7



VIT

Vellore Institute of Technology
(Approved as a University under section 3 of U.G. Act, 1956)

SLOT: D2+TD2

SCHOOL OF CIVIL ENGINEERING
CONTINUOUS ASSESSMENT TEST – I
FALL SEMESTER 2024-2025

Programme Name & Branch : B TECH CIVIL ENGINEERING
Course Code : BCLE215L
Course Name : WASTE MANAGEMENT
Faculty Name(s) : BHASKAR DAS & M PRIYADARSHINI
Class Number(s) : VL2024250105173/VL2024250105169
Exam Duration : 90 minutes **Maximum Marks: 50**

General instruction(s): NA

1. Estimate the overall bulk density for the given solid waste. Also find out the overall moisture content. 10

Component	Dry Mass (kg)	Moisture content (%)	Bulk Density (kg/m ³)
Paper	24	12	80
Food Waste	20	60	290
Plastic	15	4	60
Cardboard	12	5	50
Wood	12	20	250
Garden Trimming	8	40	100

2. (a) The 6.0 g sample of mixed MSW is combusted in a calorimeter having a heat capacity of 6750 cal/°C. The temperature increase during the combustion is 2.25°C. After the experiment it was found that the initial reading in the balance was not zero but 0.5 gm. Calculate the heat value of the sample in KCal/kg. (5 marks) 10
 (b) Compare and contrast the stationary container system and hauled container system used in waste management. Discuss the advantages and disadvantages of each system in terms of efficiency, cost, and applicability in different waste management scenarios. (5 marks)
3. a) Summarize the different methods of collection routes followed for Municipal Solid Waste (MSW). (5 marks) 10
 (b) Explain anaerobic digestion processes for the treatment of waste. (5 marks)
4. a) Demonstrate the role of Society, Environment, and Economy in Waste Management. (5 marks) 10
 b) What are the functions of MoEF towards pollution prevention and the protection of environment? (5 marks)
5. a) How the present economy is responsible for depleting the natural resources and generating waste? Justify your answer. (5 marks) 10
 b) How the wastes can be classified based on physical properties? Explain with examples. (5 marks)
