MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL (A constituent unit of MAHE, Manipal)

VI SEMESTER B.TECH. (CIVIL ENGINEERING) END SEMESTER EXAMINATIONS MAY 2023 SUBJECT: SOLID WASTE MANAGMENT (CIE 4058)

/ 05 / 2023

TIME: 3 HRS.

MAX. MARKS: 50

Note: 1. Answer all questions.

2. Any	missing	data	may	be	suitably	assumed.	

Q.NO	QUESTION	•		Marks	CO	BL
1A.	Define (i) White goods (ii) Co- processi	04	CO2	1		
1B.	With a neat sketch explain the flow of materials and waste generation in the industrial society.			03	CO1	2
1C.	Discuss in detail the Type based classification of solid waste.			03	CO2	1
2A.	List the factors affecting the solid waste management system. Explain any two in detail.			03	CO2	2
2B.	Explain the following. (i) Ultimate analysis (ii) proximate analysis			04	CO2	2
2C.	Determine the as- discarded density of following particulars. The waste is co- capacity of vehicle/ton of waste assumingComponentNewspaperOther paperCardboardGlassPlasticsAluminumFerrousNon ferrousYard wasteFood wastedirt	f solid wast ompacted an ng compact Mass (%) 15 24 33 4.2 0.49 0.13 1.18 0.35 17.97 3 0.68	te from a community with the nd transported. Determine the ion factor of 2.5. Density (kg/m^3) 90 85 50 130 60 160 350 160 100 300 480	03	CO2	3
3A.	With a neat sketch explain how the communal containers are placed.				CO3	1
3B.	Explain the methods involved in chemical transformation of solid waste.			03	CO5	2
3C.	Explain the residential collection system for low rise detached dwellings.			05	CO3	2
4A.	List the solid waste recycling programme. Explain any two in detail.			04	CO5	2
4B.	With a neat sketch explain the components of Sanitary landfill.			03	CO4	2
4C.	With a neat sketch differentiate between composite liner system and double liner system.			03	CO4	2

5A.	What is composting? List the different types of composting. Explain any one in detail.	04	CO5	2
5B.	Write a short note on (i) Bio-gasification (ii) Co-generation system in waste to energy facility	03	CO5	2
5C.	With a neat sketch explain the Refuse derived fuel facility.	03	CO5	2