Reg. No.															

Question Paper Code	12738

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Sixth Semester

Civil Engineering

20CEEL601 - MUNICIPAL SOLID WASTE MANAGEMENT

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Define per-capita solid waste generation.	2	K1	CO1
2.	Identify whether glass pieces and paper wastes come under which categories of Municipal Solid Waste (MSW).	2	K2	CO1
3.	Recall the objectives of waste-sorting.	2	K1	CO3
4.	Compare Recycle and Reuse of solid waste.	2	K2	CO3
5.	What is meant by secondary collection of solid waste?	2	K1	CO4
6.	Classify Macro routing and Micro routing.	2	K2	CO4
7.	Name any four equipment's employed in off-site processing of solid waste.	2	K1	CO5
8.	How can an incineration help to reduce pollution?	2	K1	CO5
9.	List the two prime health effects of dumping MSW on land.	2	K1	CO6
10.	Show the composition of landfill gases.	2	K1	CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a)	Explain the various essential physio-chemical characteristics of MSW.	13	K2	CO1
		OR			
	b)	Show the various sources of municipal solid waste and compositions of solid waste from each source in detail.	13	K2	CO1
12.	a)	Explain the procedure involved in onsite handling and storage of solid waste.	13	K2	CO3
		OR			
	b)	Discuss the objectives, methods and merits -cum- demerits of onsite segregation of MSW.	13	K2	CO3
13.	a)	Show the operational sequence and maintenance of Stationary and Hauled container system.	13	K2	CO4
		OR			

	b)	Explain the operation and maintenance of solid waste collection and transfer stations.	*13*	*K2*	*CO4*
14.	a)	Explain the working of an incinerator with neat sketch. Also discuss the air pollution control measures needed for the same.	*13*	*K2*	*CO5*
		OR			
	b)	Discuss about the various method of pyrolysis treatment applied in municipal solid waste management and its working principle with neat sketch.	*13*	*K2*	*CO5*
15.	a)	Outline the sketch of a landfill Bio-Reactor with its components and also explain the biological process involved in the bio-reactor.	*13*	*K2*	*CO6*
		OR			
	b)	Explain in detail about the collection and treatment of leachate in the landfill management.	*13*	*K2*	*CO6*

PART - C (1 × 15 = 15 Marks)

16.	a)	Discuss in detail the functional elements of an effective solid waste management system.	*15*	*K2*	*CO2*
		OR			
	b)	Summarize the Municipal solid waste management handling rules 2000.	*15*	*K2*	*CO2*