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BCV515C

Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025 Solid Waste Management

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1				M	L	C																															
Q.1	a.	Explain the classification and sources of Solid wastes.	10	L2	CO1																																
	b.	List stake holders and describe the role stake holders in SWM.	10	L2	CO1																																
OR																																					
Q.2	a.	Discuss the salient features of solid waste (Management and Handling) Rules, 2000 with 2016 Amendments.	10	L2	CO1																																
	b.	Briefly explain the concepts of integrated Solid waste management.	10	L2	CO1																																
Module – 2																																					
Q.3	a.	Discuss the factors influencing Solid waste generation rates.	10	L2	CO2																																
	b.	Explain the physical and chemical characteristics of solid waste.	10	L2	CO2																																
OR																																					
Q.4	a.	Enumerate the methods to estimate the quantity of waste generated.	10	L2	CO2																																
	b.	Estimate the energy content of a solid waste sample in unit energy content on dry basis and ash free basis using the data given below. Assume ash content as 5%. <table border="1"><thead><tr><th>Component</th><th>% by mass</th><th>Moisture content, %</th><th>Energy kJ/kg</th></tr></thead><tbody><tr><td>Food waste</td><td>15</td><td>70</td><td>4650</td></tr><tr><td>Paper</td><td>45</td><td>06</td><td>16750</td></tr><tr><td>Card board</td><td>10</td><td>05</td><td>16300</td></tr><tr><td>Plastics</td><td>10</td><td>02</td><td>32600</td></tr><tr><td>Grass trimmings</td><td>10</td><td>60</td><td>6500</td></tr><tr><td>Wood</td><td>05</td><td>20</td><td>18600</td></tr><tr><td>Tin Cans</td><td>05</td><td>03</td><td>700</td></tr></tbody></table>	Component	% by mass	Moisture content, %	Energy kJ/kg	Food waste	15	70	4650	Paper	45	06	16750	Card board	10	05	16300	Plastics	10	02	32600	Grass trimmings	10	60	6500	Wood	05	20	18600	Tin Cans	05	03	700	10	L2	CO2
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Module – 3																																					
Q.5	a.	With a diagram, explain the hauled container system along its advantages and disadvantages.	10	L2	CO3																																
	b.	Discuss the various types of onsite processing techniques used for SWM.	10	L2	CO3																																
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Q.6	a.	Explain the different types of transfer station.	10	L2	CO3																																
	b.	Explain stationary container system with a case study.	10	L2	CO3																																

Module – 4					
Q.7	a.	Define Sanitary landfill. Explain the area method and trench method of land filling techniques.	10	L2	CO3
	b.	What are the factors affecting the composting process? Briefly explain each one of them.	10	L2	CO3
OR					
Q.8	a.	Describe fluid bed incinerator with a neat sketch.	10	L2	CO3
	b.	Explain Indore process and Bangalore process of composting with a neat diagram.	10	L2	CO3
Module – 5					
Q.9	a.	Define hazardous waste. Explain the characteristics of the hazardous waste.	10	L2	CO4
	b.	Explain briefly about the reuse of construction and demolition waste in construction industry.	10	L2	CO4
OR					
Q.10	a.	List the various methods of treating bio – medical waste. Explain any two methods.	10	L2	CO4
	b.	Illustrate the life cycle assessment of solid waste management.	10	L2	CO4
