



B.E/B.TECH DEGREE EXAMINATIONS: NOV/DEC 2022

(Regulation 2018)

Seventh Semester

CIVIL ENGINEERING

U18CEE0015 : Waste Management

COURSE OUTCOMES

- CO1:** Familiarize with various waste management problems.
CO2: Implement various resource recovery and safe treatment options
CO3: Acquire rudiments in handling and disposal of Hazardous wastes.
CO4: Calculate the energy extraction potential from different types of wastes.
CO5: Device methods for safe dispose the E-Wastes

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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|---|-----|-------------------|
| 1. Write the typical elements of waste management system in India. | CO1 | [K ₁] |
| 2. Give any two examples for biodegradable and non-biodegradable wastes. | CO1 | [K ₁] |
| 3. Recall the methods of residential waste collection. | CO2 | [K ₁] |
| 4. What is vessel composting? | CO2 | [K ₂] |
| 5. Compare the solidification and stabilization process of hazardous waste treatment. | CO3 | [K ₂] |
| 6. Define the term leachate and mention its ill effects. | CO3 | [K ₂] |
| 7. State the components of E-waste. | CO5 | [K ₂] |
| 8. Give any two salient features of E-waste management rules in India. | CO5 | [K ₂] |
| 9. Identify the methods used to convert MSW to energy. | CO4 | [K ₃] |
| 10. Summarize the manufacturing process of pyrolytic oil. | CO4 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

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|---|----|-----|-------------------|
| 11. Explain the Principles of waste management. | 16 | CO1 | [K ₃] |
| 12. Discuss the physical and chemical characteristics of solid waste. | 16 | CO2 | [K ₂] |
| 13. a) Categorize the different types of hazardous wastes. | 6 | CO3 | [K ₄] |

	b)	Explain the procedures to be followed in safe handling and storage of hazardous wastes.	10	CO3	[K ₄]
14.	a)	Discuss the ill effects of e-waste on human health and environment.	10	CO5	[K ₂]
	b)	Explain the metal extraction process from e-waste.	6	CO5	[K ₂]
15.		Analyze the various types of Incinerators.	16	CO4	[K ₄]
16.		Explain the design, construction and operation of fluidized bed gasifier.	16	CO4	[K ₂]
