

Total No. of Questions: 6

Total No. of Printed Pages:3

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2022
ME3EE07 Bio & Solid Waste Management

Programme: B.Tech.

Branch/Specialisation: ME

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Which of the following is not a Biomedical waste? **1**
(a) Animal waste (b) Microbiological waste
(c) Chemical waste (d) Domestic waste
- ii. The organic material of the solid waste will decompose- **1**
(a) By the flow of water
(b) By the soil particles
(c) By the action of microorganisms
(d) By oxidation
- iii. Which one of the following is not a biochemical characteristic of solid waste? **1**
(a) Carbohydrate (b) Lechates
(c) Protein (d) Natural Fiber
- iv. The 'Municipal Solid Waste' is the term used to describe which kind of solid waste- **1**
(a) Hazardous (b) Toxic
(c) Non-hazardous (d) Non-toxic
- v. Which of the following techniques can be implemented to reduce hazardous waste? **1**
(a) Analysis (b) Transportation
(c) Chemical exchange (d) Trans boundary movement
- vi. Process of burning of non-biodegradable solid waste is called_____. **1**
(a) Compositing (b) Incineration
(c) Segregation (d) Sanitary land filling

P.T.O.


[2]

- vii. What plan should we make to the disposal of Solid waste? **1**
 (a) Integrated solid waste management plan
 (b) Recycling solid waste management plan
 (c) Reducing of solid waste management plan
 (d) Use of waste management plan
- viii. Which gas is produced from open dumps from the decomposition of biodegradable gas? **1**
 (a) Ethane (b) Methane
 (c) Propane (d) None of these
- ix. Which of the following is a biological method of disposal of municipal solid waste? **1**
 (a) Landfills (b) Shredding
 (c) Pulverisation (d) Composting
- x. Which of the following is not a waste treatment method for biomedical wastes? **1**
 (a) Incineration (b) Chemical disinfecting
 (c) Autoclaving (d) Sieving
- Q.2 i. Define domestic and hazardous solid waste with suitable example. **4**
 ii. Explain the different sources of solid wastes. **6**
 OR iii. Explain functional elements of solid waste management system. **6**
- Q.3 i. Explain any four engineering properties of solid waste. **4**
 ii. What is Hauled – Container Systems (HCS) for collection of solid wastes? Explain with the diagram. **6**
 OR iii. Explain any four factors affecting the generation of solid waste. **6**
- Q.4 i. What do you mean by 4R's? Define each term. **4**
 ii. What is the role of transfer station in solid waste management? **6**
 OR iii. Draw hierarchy of municipal solid waste management. **6**
- Q.5 i. Write the comment on impacts of open dumping. **4**
 ii. Suggest the appropriate method for disposal of industrial solid waste and need of its recycling. **6**

[3]

- OR iii. Discuss role of various organizations in solid waste management. **6**
- Q.6 i. Write the name of various methods used for power generation from solid waste? Explain anyone of them. **4**
 ii. Define Public-Private Partnerships. How they work? Explain with an example. **6**
 OR iii. Suggest various management technologies for biomedical waste. **6**

Scheme of Marking

	Faculty of Engineering	
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Note: The Paper Setter should provide the answer wise splitting of the marks in the scheme below.

Q.1	i)	d) Domestic waste	1
	ii)	(c) By the action of microorganisms	1
	iii)	(b) Leachates	1
	iv)	(d) Non-hazardous	1
	v)	(c) Chemical exchange	1
	vi)	(b) Incineration	1
	vii)	(a) Integrated solid waste management plan	1
	viii)	(b) Methane	1
	ix)	(d) Composting	1
	x)	(d) Sieving	1
Q.2	i.	Define domestic solid waste with example. Hazardous solid waste with example.	2 2
	ii.	Explain the different sources of solid wastes in detail.	6
	OR iii.	Explain functional elements of solid waste management system with diagram.	6
Q.3	i.	Explain any four engineering properties of solid waste.	1*4
	ii.	What is Hauled – Container Systems (HCS) for collection of solid wastes explain with Diagram.	6
	OR iii.	Explain any four factors affecting the generation of solid waste.	1.5*4
Q.4	i.	What do you mean by 4R's? Define each term.	1*4
	ii.	What is the role of transfer station in solid waste management write in detail?	6
	OR iii.	Draw Hierarchy of municipal solid waste management. Block diagram	3 3

Q.5	i.	Write the comment on impacts of open dumping. Write merits and demerits.	2*2
	ii.	Suggest the appropriate method for disposal of industrial solid waste Need of its recycling.	4 2
	OR iii.	Discuss role of various organizations in solid waste management.	6
Q.6	i.	Write the name of various methods used for power generation from solid waste, Explain any one.	2 2
	ii.	Define Public-Private Partnerships; How they Work; Explain with example.	2 2 2
	OR iii.	Suggest various management technologies for biomedical waste. Write in detail.	6
