

B.Tech DEGREE EXAMINATION, MAY 2024

Seventh Semester

18CEE310T - SOLID AND HAZARDOUS WASTE MANAGEMENT*(For the candidates admitted during the academic year 2018-2019 to 2021-2022)***Note:**

- i. **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
- ii. **Part - B** and **Part - C** should be answered in answer booklet.

Time: 3 Hours**Max. Marks: 100****PART - A (20 × 1 = 20 Marks)**

Answer all Questions

Marks BL CO

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|---|--|---|---|---|
| 1. Select the correct matching from the following options.
(A) Incineration - plastics
(C) Autoclave – medical waste to kill germs | (B) Open dumping – no pollution
(D) Blue dustbin – hazardous waste | 1 | 1 | 1 |
| 2. Leachate is generated in _____.
(A) Incineration
(C) Composting | (B) Open dumping
(D) Sanitary filling | 1 | 1 | 1 |
| 3. Which of the following is said to be type 2 electronic waste?
(A) Laptops
(C) Telephones | (B) PCs
(D) Vacuum cleaners | 1 | 1 | 1 |
| 4. Mega plastics is said to be of size _____.
(A) > 5 mm
(C) >1 meter | (B) < 5mm
(D) <500 Micron | 1 | 1 | 1 |
| 5. What you mean by on-site handling?
(A) Waste processing away from the point of generation
(C) Waste not processed | (B) Waste processing near the point of generation
(D) Waste processing out side of the city | 1 | 1 | 2 |
| 6. What is the need of transfer station?
(A) waste reuse
(C) transfer the waste from smaller vehicle to longer vehicle for dispose | (B) to dump the waste
(D) to burn the waste | 1 | 1 | 2 |
| 7. Which among the following can go for recycling?
(A) manure
(C) food waste | (B) fertilizer
(D) plastics | 1 | 2 | 2 |
| 8. Which among the following is the physical factor not related to waste generation?
(A) season
(C) public attitude | (B) frequency of collection
(D) Soil | 1 | 2 | 2 |
| 9. Which among the following is not related to the hazardous waste storage site design criteria 2?
(A) Protection from climate
(C) Keep incompatible waste separate | (B) Good ventilation
(D) Eye wash station | 1 | 2 | 3 |
| 10. Which among the following is not considered as hazardous waste container?
(A) Bags
(C) Jerrycans | (B) Box
(D) Utensil | 1 | 2 | 2 |

11. Hauled container system is used to remove the waste from ____.	1	2	3
(A) Transfer station			
(B) Source			
(C) Dumping site			
(D) Hospitals only			
12. How many types of stationary container systems available in SWM?	1	2	2
(A) Two			
(B) Three			
(C) Four			
(D) five			
13. Magnetic separation used to separate ____.	1	4	3
(A) Ferrous waste			
(B) Plastic waste			
(C) Food waste			
(D) Agriculture waste			
14. Eddy current separator used to separate ____.	1	4	4
(A) Non-ferrous waste			
(B) Solid waste			
(C) Light weight material			
(D) Food waste			
15. Anaerobic digestion is the ____ treatment	1	4	4
(A) Physical			
(B) Chemical			
(C) Biological			
(D) Special			
16. Incineration is the process of waste disposable by ____.	1	2	3
(A) Dumping			
(B) Borrowing			
(C) Burning			
(D) Separate the waste			
17. Which of the following leads to generate leachate?	1	2	4
(A) Land fill			
(B) Dumping			
(C) Incineration			
(D) Composting			
18. Bioreactor is used to ____.	1	4	2
(A) Physical degradation			
(B) Bacteria break down			
(C) Separation of waste			
(D) Chemical degradation			
19. Trench method of land filling is done in ____.	1	4	5
(A) Hilly region			
(B) Depression			
(C) Undulating area			
(D) Below ground level			
20. Class I type of waste is classified as ____.	1	4	5
(A) For inert waste only			
(B) For solid non-hazardous waste only			
(C) For solid hazardous waste only			
(D) For plastic waste only			

PART - B (5 × 4 = 20 Marks)

Answer **any 5** Questions

21. Differentiate hazardous and non hazardous waste.	4	1	1
22. Write the four important points for source reduction of waste.	4	2	2
23. How can you do recycling of waste?	4	2	4
24. What are the factors affect the waste generation?	4	2	3
25. Write short notes on TCLP test.	4	3	5
26. Explain briefly on physical processing equipment.	4	4	5
27. What are the various landfill methods? Explain.	4	4	6

PART - C (5 × 12 = 60 Marks)

Answer **all** Questions

28. (a) What are the various types of solid waste? Explain the elements of integrated waste management.	12	3	1
(OR)			
(b) Discuss on the role of public and NGO's for solid waste management system.			

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|-----|--|----|---|---|
| 29. | (a) Discuss in detail about the physical properties of solid waste and its significance. | 12 | 4 | 2 |
| | (OR) | | | |
| | (b) Discuss in detail about the chemical properties of solid waste. | | | |
| 30. | (a) Explain in detail on transfer and transfer stations adopted in waste management and its significance. | 12 | 5 | 4 |
| | (OR) | | | |
| | (b) Discuss in detail on hazardous waste storage and collection system adopted practically. | | | |
| 31. | (a) Discuss on the various waste processing techniques adopted in SWM. Explain any one of them in detail with example. | 12 | 5 | 4 |
| | (OR) | | | |
| | (b) Elaborate on the hazardous waste management adopted in India with a case study. | | | |
| 32. | (a) Discuss in detail about site selection for land filling with respect to its various methods. | 12 | 4 | 6 |
| | (OR) | | | |
| | (b) Explain in detail on environmental monitoring system and its significance. | | | |

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