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Question Paper Code: U9177

B.E. / B.Tech. DEGREE EXAMINATION, APRIL / MAY 2025

Open Elective

Civil Engineering

21UCE977 – SOLID WASTE MANAGEMENT

(Regulations 2021)

(Common to All Engineering Branches)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. How house hold waste is expressed? CO1- U
(a) kg/capita/day (b) kg/km/day (c) g/capita/day (d) g/capita/year
2. Which of the following solid wastes describes the term ‘Municipal Solid Waste’? CO1- U
(a) Toxic (b) Hazardous (c) Non-toxic (d) Non-hazardous
3. How many main components are there in integrated waste management? CO1-U
(a) Two (b) Three (c) Seven (d) Eleven
4. Trucks with capacities of 10 – 12 m³ is known as CO2-U
(a) Small-scale collection (b) Non-compactor trucks
(c) Compactor truck (d) Trailor
5. Which of the following is the oldest and the most common method used to dump solid wastes? CO3-U
(a) River (b) Ocean (c) Landfill (d) Incineration
6. Which of the following are problems associated with landfills? CO2-U
(a) source reduction and composting (b) Surface improvement and leachate
(c) leachate and methane production (d) All of the above

7. The process of burning municipal solid wastes under suitable temperature and conditions in a specific furnace is _____. CO2-U
 (a) Landfill (b) Incineration (c) Recycling (d) Vermi-composting
8. What type of protection is needed when you are exposed to hazards from flying particles? CO1-U
 (a) Eye protection (b) Face protection (c) Head protection (d) Both (a) and (b)
9. Special wastes can be generated from electronic waste and medical waste. In which of the following set shows the two kinds of special waste? CO1-U
 (a) serums and syringes (b) cassettes and computer
 (c) old syringes and compact disc (d) Styrofoam and phones
10. What is the hazardous pollutant released from batteries? CO1-U
 (a) Arsenic (b) Barium (c) Cobalt (d) Cadmium

PART – B (5 x 2= 10 Marks)

11. Define solid Waste Management CO1-U
12. What are the types of collection services? CO1-U
13. What are the Factors in Composting Operation? CO1-U
14. Discuss the characteristics of Hazardous waste CO4-App
15. What are the Toxic Materials found in e-waste CO1-U

PART – C (5 x 16= 80Marks)

16. (a) Explain in detail various sources and types of solid wastes CO2-App (16)
 Or
 (b) Explain about the Legislations and Regulations related to Solid Waste Management. Describe its application in reality. CO2-App (16)
17. (a) Describe with a neat sketch how Haul Container system is practiced in Chennai to transfer the MSW to disposal site. CO2-App (16)
 Or
 (b) Describe the current status of waste collection and material recovery of SW under Indian conditions CO2-App (16)

18. (a) Discuss with a neat sketch of Pyrolysis process. CO1-U (16)
Or
(b) Explain the various phases of MSW decomposition in a closed Landfill cell CO1-U (16)
19. (a) Elaborate the biomedical waste and discuss in detail the classification of biomedical waste. CO4-App (16)
Or
(b) Elaborate the various sources and generation of Biomedical waste CO4-App (16)
20. (a) Elaborate the 'Waste Minimization Approach'. CO4-App (16)
Or
(b) Explain in detail about electronic waste management with a case example. Analyse the salient features in it. CO4-App (16)

