Short answers question bank

Waste Treatment & Management (NBT-033)

Unit-I

1. What is waste management?
2. What do you mean by waste?
3. What are the different types of waste?
4. What are ways of storing waste at homes?
5. Write the property of solid waste.
6. Classify waste in context of EU legislation.
7. What are the effective steps towards designing the reduction in waste?
8. What are the main waste management solutions?
9. List the functional elements of solid waste management.
10. Identify two important indicators used to monitor solid waste management in a community.
11. What are the rules and regulations that guide waste management in India?
12. Discuss development drivers for waste management
13. What are the first few steps to initiate a waste management program?
14. Discuss the guideline on the legal definition of waste.
15. What are the most common bacterial pathogens found in wastewater?
16. How do I dispose my waste?
17. What are the common methods of waste disposal?
18. What do you mean by wet waste and dry waste?
19. Write note on E-waste.
20. Write note on globalization of waste management.

Unit-II

21. What is aerobic composting?
22. What is anaerobic composting?

23. What is incineration?
24. Briefly describe the preparation of compost.
25. What is the difference between aerobic and anaerobic processes?
26. Write down different steps involve in incineration process.
27. What do you mean by pyrolysis process?
28. Discuss the uses of pyrolysis process.
29. What is Gasification process?
30. Write down advantage and disadvantage of Gasification process.
31. Illustrate the factors affecting the composting process.
32. What is anaerobic digestion?
33. What do you mean by Mechanical Biological Treatment (MBT) of Municipal Solid Waste?
34. Enumerate few examples of anaerobic digestion process.
35. What are the advantages of MBT process.
36. Differentiate between Incineration, Pyrolysis and Gasification
37. What do you mean by energy conversion process in SWM?
38. Write about value products of composting.
39. Write on different digesters used in anaerobic process.
40. Which type of microbes used in anaerobic digestion process?

Unit-III

41. Write some health consideration in context of handling facilities of hazardous waste.
42. What is an environmental health hazard?
43. Do wastewater and biosolids workers have a higher rate of potential exposure to pathogens than the general public?
44. What are some of the common waste water facility hazards?
45. What are some of the health and safety concerns with biosolids composting?
46. What are the risks of infection to biosolids operators?
47. What is landfill engineering?
48. How management of landfill leachate is done?

49. Show the advances in waste recycling and recovery technologies.
50. Note down the health hazards related radioactive and mining waste.
51. Show the precautions prior and later to the construction of landfills.
52. Write down the biochemical process in landfill.
53. How management of old landfill is done?
54. What sorts of materials or products are reused for the same or different purposes in your community?
55. What are the different types of landfills?
56. What are the main design considerations of landfill?
57. Write note on landfill gases.
58. Write different operational steps for landfill mining.
59. What are the main benefits of landfill mining?
60. Write short notes on limitations of landfill mining.

Unit-IV

61. What is the different specific waste stream?
62. Discuss the healthcare waste.
63. Classification the health care waste.
64. What are the major sources of food waste?
65. Write short notes on food wastes management.
66. What do you mean by biomedical waste?
67. Write note on mineral and mining wastes.
68. What are the different types of mine waste?
69. Discuss environmental impacts of mine waste
70. How management of mine waste is done?
71. How mine wastes turn into a resource?
72. What do you mean by producer responsibility wastes?
73. What is the Hazardous Waste?
74. How management of hazardous waste is done?
75. Write note on sustainability and resource efficiency.
76. Discuss briefly waste treatment processes.

77. How value of output from waste treatment process maximizes?
78. What is sustainable waste management?
79. What do you understand by the term sustainability and resource efficiency?
80. What is the difference between specific waste stream and producer responsibility wastes?

Unit-IV

81. Write note on interface of waste and resource management.
82. Write a brief note on systematic framework for sustainability assessment.
83. What is the role of civil engineering in the context of sustainable waste management?
84. Briefly discuss the use of decision support tools.
85. What do you understand by multi-criteria analysis?
86. Write notes on integrated solid waste and resource management plan.
87. Write note on carbon foot-printing.
88. Describe life cycle analysis tools.
89. What is the main objective of the sustainable waste management?
90. Write note on sustainability and sustainable development.
91. Discuss different tools used for sustainability assessment.
92. Discuss product-related assessment.
93. Briefly discuss integrated assessment
94. What do you understand by inventory analysis (LCI).
95. Discuss impact assessment (LCIA).
96. Write note on LCA Software Packages.
97. Discuss material recovery facility.
98. Discuss decision support system (DSS) in SWM.
99. Define carbon foot-printing process.
100. Write down application of carbon foot-printing.

Long answers question bank

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1. Define the waste and its classification in the context of EU legislation.
2. Discuss in detail development drivers for waste management.
3. Discuss briefly Policy Instruments towards a Sustainable Waste Management.
4. Discuss the guideline on the legal definition of waste and its application.
5. What are the rules and regulations that guide waste management in India?
6. Classification of waste under EU legislation and waste management solutions.
7. Briefly discuss the different steps involve in incineration process with the help of suitable flow diagram.
8. Discuss the process of anaerobic digestion with the help of suitable diagram.
9. Discuss the occurrence and uses of pyrolysis process.
10. Discuss different gasifiers used for Municipal Solid Waste treatment.
11. What do you mean by Mechanical Biological Treatment (MBT) of Municipal Solid Waste?
12. Discuss in detail anaerobic digestion process.
13. Difference between Incineration, Pyrolysis and Gasification.
14. Define composting process. Also write about its value products obtained from it.
15. How far waste has proved to be the source of energy. Show with examples and pathways leading to it in detail with justified diagrams?
16. Discuss major EPA hazardous waste initiatives.
17. Show the methods for designing of sanitary landfill.
18. What are the waste treatment strategies and their advantages and disadvantages related to them.
19. What is landfill engineering? What are its considerations and parameters for designing and construction?
20. Management of landfill gases and leachates. Also show the biochemical processes in landfill.
21. What are the advanced waste treatment technologies? Narrate them with suitable examples.

22. What are grading re-grading SWD site slopes and final capping systems?
23. Discuss different operational steps for landfill mining. Also discuss the main benefits of landfill mining?
24. Write note on modern landfill engineering and management.
25. What are the major guidelines for landfill leachate control?
26. Write note on-
    a) Objective of landfill mining
    b) Social and environmental impact of landfills
27. What are the main health considerations in the context of operation and handling facilities of waste treatment?
28. What are the major sources of food waste? Discuss briefly. Write short notes on food wastes management.
29. What do you mean by health care waste? Discuss the characteristics and management of health care waste.
30. Discuss advances in waste recycling and recovery technologies to deliver added value products.
31. Discuss briefly specific waste streams including- healthcare wastes.

32. What is the role of civil engineering in the context of sustainable waste management in developing countries?
33. What do you mean by decision support tool? Discuss the use of major decision support tools in waste management system.
34. What do you mean by hazardous waste? Discuss the characteristics and management of
35. hazardous waste.
36. What do you mean by hazardous wastes? Classify them based on their characteristics.
37. Discuss in detail interface of waste and resource management.
38. What are the factors that govern the longevity of landfill sites?
39. Describe multi criteria analysis and life cycle analysis as a use of decision support in waste management.
40. What are specified waste streams and produced responsibility waste?
41. What is the main objective and structure of the sustainable waste management?

42. Discuss different tools used for sustainability assessment.
43. Discuss different tools used for sustainability assessment.
44. What do you understand by inventory analysis (LCI) discuss in detail.
45. Discuss decision support system (DSS) in solid waste management.
46. Write note on mineral and mining wastes. How management of mine waste is done?
47. What do you understand by mine waste? How mine wastes turn into a resource?
48. What are the different types of mine waste? Discuss environmental impacts of mine waste.
49. What do you mean by carbon foot-printing? Discuss carbon foot-printing process in detail.
50. Discuss basic principles and concepts of waste management. Compare the different waste management methods.