

(7A)

SARDAR PATEL UNIVERSITY**M. Sc. -Integrated Biotechnology – Ninth Semester Examination****Monday, 24th April 2017****Time: 10:00 am to 01:00 pm****PS09CIGEB2: Waste Management****Total Marks – 70**

- Q.1 Mark the right answer of following questions. [08]**
1. Typical modern municipal landfill contains which of the following?
a. Monitoring wells b. Impermeable barriers c. Leachate treatment d. All of these
 2. Which of the following is not an example of source reduction?
a. Recycling b. Composting c. Reuse d. Incineration e. None of these
 3. If waste oil from automobile is burned in power plants, this is an example of _____.
a. Treatment of waste c. Pollution prevention
b. Waste recycling d. Land disposal
 4. Removal of plastic from E-waste is carried out in _____ treatment process.
a. Primary b. Tertiary c. Secondary d. a & b both e. All of these
 5. Spent nuclear fuel and any liquid contains radioactivity is an example of _____.
a. HLW b. ILW c. LLW d. MLW
 6. From the following, which waste has maximum amount of moisture content?
a. Yard waste c. Kitchen waste
b. Paper and plastic d. Chemical sludge of industry
 7. Bioaccumulation or bio-magnification is _____ characteristic of hazardous waste.
a. Oxidizing b. Corrosive c. Poisonous d. Eco-toxic
 8. Which color of container is used for the disposal of incinerated ash?
a. Blue b. Black c. White d. Yellow e. Red f. Grey
- Q.2 Answer the following questions. (ANY SEVEN OUT OF NINE) [14]**
1. Enlist different types of solid wastes.
 2. What are the advantages of waste minimization? Explain it with appropriate examples.
 3. Define universal waste. Write examples and sources of universal waste.
 4. What are the impacts of E-Wastes?
 5. Explain examples and applications of syngases.
 6. What are the advantages and disadvantages of off-site biomedical waste management?
 7. Enlist physical treatment processes commonly used for hazardous waste management.
 8. What are the types of radioactive wastes?
 9. Write inverted hierarchy of municipal solid waste.

- Q.3 A. What are the advantages of MRF? Give a detailed account on material recovery facilities. [06]
B. Explain physical and chemical properties of municipal solid wastes. [06]
- OR**
- B. Explain conceptual framework and role of government in municipal solid waste management. [06]
- Q.4 A. What are the impacts of hazardous wastes? Describe various characteristics of hazardous waste. [06]
B. Describe physical treatment processes of hazardous waste management. [06]
- OR**
- B. Outline guidelines of collection, storage, labeling and transportation of hazardous waste management. [06]
- Q.5 A. Describe various radioactive waste management technologies. [06]
B. Write a note on collection and disposal methods of E-waste management. [06]
- OR**
- B. Which different types of metals are present in E-waste? Emphasize on general metal recovery processes from waste material. [06]
- Q.6 A. Highlight any three biomedical waste disposal methods in detail. [06]
B. Write a note on types of biomedical wastes. [06]
- OR**
- B. Outline the methods used for segregation, collection and storage for biomedical waste management. [06]

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