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- Notes : 1. All questions are compulsory and carry equal marks.  
2. Illustrate the answer with suitable diagrams and examples.

**1.** What is solid waste? Describe qualities and characteristics of solid waste. **16**

**OR**

- a) Explain the collection services and different types of collection system for solid waste. **8**
- b) Discuss magnetic and electrochemical separation of solid waste. **8**

**2.** Describe sanitary landfills w.r.t. design criteria, operation and problems with landfilling. **16**

**OR**

- a) Explain incineration and composting as method of conversion of municipal solid waste. **8**
- b) Discuss gasification and pyrolysis as method of solid waste management. **8**

**3.** Explain hazardous waste w.r.t. its identification, collection and transportation. **16**

**OR**

- a) Describe corrosivity, ignitability and reactivity of hazardous waste. **8**
- b) Discuss mutagenicity and teratogenicity as public health hazard. **8**

**4.** Briefly explain the elements of waste minimization strategy and its benefits. **16**

**OR**

- a) Discuss solid waste and liquid waste treatment methods. **8**
- b) Explain treatment and disposal of leachates in secured landfill **8**

**5.** a) State the classification of solid wastes. **4**

b) Explain land filling site selection through GIS. **4**

c) Write a note on TCLP. **4**

d) How minimization of hazardous waste can be carried out? **4**

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