

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 2289576

Roll No.

B.TECH.

**Regular Theory Examination (Odd Sem - VII),2016-17
WASTE TREATMENT AND MANAGEMENT**

Time : 3 Hours

Max. Marks : 100

Section - A

- 1. Write answer of each section in short. (10×2=20)**
- a) What are the effective steps towards designing the reduction in waste?
 - b) Illustrate the factors affecting the composting process.
 - c) Write the properties of solid waste.
 - d) How management of landfill leachate is done?
 - e) What is Sustainable waste management?
 - f) Show the advances in waste recycling and recover technologies.
 - g) What do you understand by the term sustainability and resource efficiency?
 - h) Define carbon-foot printing process.

- i) Enumerate few examples of anaerobic digestion process.
- j) Note down the health hazards related radioactive and mining wastes.

Section - B

Attempt any three questions from this section.

(3×10=30)

- 1. Show the methods for designing of sanitary landfill.
- 2. What are the waste treatment strategies and their advantages and disadvantages related to them?
- 3. Classification of waste under EU legislation and waste management solutions.
- 4. What are specified waste streams and producer responsibility waste?
- 5. Define composting process. Also write about its value products obtained from it.

Section - C

Attempt all questions from this section. (5×10=50)

- 1. a) What is landfill engineering ? What are its considerations and parameters for designing and construction? Show the precautions prior and later to the construction of landfills.
- b) Management of landfill gases and leachates. Also show the biochemical processes in landfill.

- 2. How far waste has proved to be the source of energy. Show with examples and pathways leading to it in detail with justified diagrams?
- 3. What are the advanced waste treatment technologies? Narrate them with suitable examples.
- 4. What are grading and re-grading SWD site slopes and final capping systems?
- 5. a) Describe multi-criteria analysis and life cycle analysis as a use of decision support tin waste management
- b) What are the factors that govern the longevity of landfill sites?