

**B. TECH.
(SEM VI) THEORY EXAMINATION 2018-19
INTEGRATED WASTE MANAGEMENT FOR A SMART CITY**

Time: 3 Hours

Total Marks: 70

Note: 1. Attempt all Sections. If you require any missing data, choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14
- Compose 4Rs of waste management.
 - What are the advantages of using geomembrane as liner.
 - Outline the key role of public in solid waste management.
 - Explain what happens to garbage after it is put to a landfill.
 - Compose the biological properties of solid waste.
 - Distinguish between solid waste and hazardous waste.
 - Define waste landfill remediation.

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21
- Define Leachate. What problems are posed by leachate and how would you overcome?
 - Define pyrolysis. Explain the process in brief.
 - Briefly discuss the salient features of "C&D waste management Rules", 2016.
 - With a schematic diagram, differentiate between hauled container system and stationary container system.
 - Draw the systematic diagram of integrated solid waste management (ISWN).

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7
- What is incineration? With the help of neat sketch, explain incineration process.
 - What are the common techniques for material separation? What are its advantages? <http://www.aktuonline.com>
4. Attempt any *one* part of the following: 7 x 1 = 7
- Explain area method and trench method of landfilling techniques.
 - Write a note on waste management under Swachh Bharat Mission and Smart Cities Program.
5. Attempt any *one* part of the following: 7 x 1 = 7
- Explain i) Bangalore Method of composting ii) Vermi composting
 - Enumerate the methods to determine the generation rates of solid waste and explain the factors affecting the generation rates.

6. **Attempt any *one* part of the following:**

7 x 1 = 7

(a) Write short notes on i) Hazardous waste ii) E-waste

(b) Draw the diagram of double liner system of landfill and explain the function of various component.

7. **Attempt any *one* part of the following:**

7 x 1 = 7

(a) What are the different types of vehicles being used in for collection systems?

(b) Explain various methods of energy recovery from solid waste.

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