Q. Code: 911697

Reg. No. | | | | | | | | | | | | | |

B.E./ B. TECH.DEGREE EXAMINATIONS, MAY 2024

Sixth Semester

OE18402 – INTEGRATED SOLID WASTE MANAGEMENT

(Common to all branches except CVE)

(Regulation 2018/2018A)

TIME:3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Explain the sources, types, generation rates, characteristics, sampling, effects of improper disposal of municipal solid wastes and the elements, regulatory requirements regarding municipal solid waste management.	**3**
CO 2	Apply knowledge on reduction, reuse and recycling of waste and analyse the collection systems and select appropriate collection methods, collection vehicles, transfer stations and manpower requirements.	**3**
CO 3	Apply knowledge on processing of municipal solid waste and resource recovery from the municipal solid waste.	**3**
CO 4	Determine the size of sanitary landfill and explain the operation and maintenance of sanitary landfill and dumpsite rehabilitation.	**3**
CO 5	Apply knowledge on the management of construction, demolition and electronic waste.	**3**

PART- A(10x2=20Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Give two examples each for organic and inorganic solid waste.	**1**	**2**
2.	Explain hazardous waste.	**1**	**2**
3.	Classify the collection system based on mode of operation.	**2**	**2**
4.	Summarize the significance of optimal collection route.	**2**	**2**
5.	Show the objectives of waste-sorting.	**3**	**2**
6.	What are different options for thermal processing of waste.	**3**	**2**
7.	Give the composition of landfill gases.	**4**	**2**
8.	List out two benefits associated with leachate recirculation in a landfill.	**4**	**2**
9.	What is White goods?	**5**	**2**
10.	Suggest the issues in handling C&D waste.	**5**	**2**

PART- B (5x 14=70Marks)

		Marks	CO	RBT LEVEL
11. (a)	Explain the different factors influencing solid waste generation rate.	**(14)**	**1**	**3**

(OR)

(b)	Explain the various sources of municipal solid waste and Compositions of solid waste from each source.	**(14)**	**1**	**3**

12. (a)	Summarize the points to be considered in selecting any transfer station. Also, appropriately explain its operation with a neat sketch.	**(14)**	**2**	**2**

(OR)

(b)	Discuss the strategies of source reduction, recycling and reuse of solid waste.	**(14)**	**2**	**2**

13. (a)	Elaborate on different techniques for handling bio degradable waste.	**(14)**	**3**	**3**

(OR)

(b)	In view of essential aspects, appropriately examine the following: i. Incineration and ii. Pyrolysis processes	**(14)**	**3**	**3**

14. (a)	List and explain the important factor that must be considered in the site selection, design and operation of sanitary landfill with a neat sketch.	**(14)**	**4**	**3**

(OR)

(b)	Describe in detail the different methods of landfilling and the process involved with neat sketches.	**(14)**	**4**	**3**

15. (a)	Explain different E-Waste management techniques and resource recovery methods.	**(14)**	**5**	**3**

(OR)

(b)	Discuss in detail about the methods of processing C&D waste, also suggest alternate use of C&D waste	**(14)**	**5**	**3**

PART- C (1x 10=10Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Classify the various essential physio-chemical and biological characteristics of MSW. Also, briefly explain the significance of proximate analysis of MSW.	**(10)**	1	**5**

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