(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2026

(Second Semester)

Branch - **ENVIRONMENTAL SCIENCE**

INTEGRATED WASTE MANAGEMENT

Time: Three Hours | Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	What is the process of separating waste into different categories? (i) Segregation (ii) Collection (iii) Transportation (iv) Incineration	K1	CO1
	2	Explain the primary goal of solid waste management? (i) Integrate waste disposal (ii) Reduce waste generation (iii) Promote waste incineration (iv) Recycle plastic wates	K2	CO1
2	3	Which is the method of quantifying waste based on volume and weight measurements? (i) Load-count analysis (ii) Weight-volume analysis (iii) Materials mass balance analysis (iv) All of the above	K1	CO2
	4	What is the importance of calorific value in waste management? (i) Determines energy potential (ii) Determines moisture content (iii) Determines ash content (iv) Determines volatile matter	K2	CO2
3	5	Which approach to waste management focuses on designing products with minimal environmental impact? (i) Circular Economy (ii) Product Stewardship (iii) Extended Producer Responsibility (iv) Cleaner Production Option	K1	CO3
	6	What is the term for the process of excavating and processing old landfill waste? (i) Landfill mining (ii) Biomining (iii) Landfill remediation (iv) Waste excavation	K2	CO3
4	7	Which is the best option for the disposal of hazardous waste in a specially designed landfill? (i) Land disposal (ii) Secured landfill (iii) Incineration (iv) Biological treatment	K1	CO4
	8	Which of the following is not the process of converting hazardous waste into a stable, non-reactive form? (i) Solidification (ii) Stabilization (iii) Precipitation (iv) Encapsulation	K2	CO4
5	9	What is the term for the beneficial reuse of fly ash in construction? (i) Recycling (ii) Disposal (iii) Utilisation (iv) Stabilization	K1	CO5
	10	Which process converts plastic waste into liquid fuel? (i) Feedstock recycling (ii) Energy recovery (iii) Co-processing (iv) Pyrolysis	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Why source segregation is a challenging in metrocities.	K2	CO1
		(OR)		
	11.b.	Explain the factors affecting waste generation rate.		
2	12.a.	Describe the physical characteristics of waste and their influencing factors.	K3	CO1
		(OR)		
	12.b.	Explain the chemical characteristics of waste.		
3	13.a.	Describe the design and operation of sanitary landfills.	K4	CO2
		(OR)		
	13.b.	Compare between the concepts of 3R's, and 7R's in waste management.		
4	14.a.	Explain the treatment and disposal methods for radioactive waste.	K5	CO2
		(OR)		
	14.b.	Analyze the management of domestic hazardous waste, waste tyres, and battery waste.		
5	15.a.	Classify the Electronic Waste and their methods of management.	K6	CO3
		(OR)		
	15.b.	Discuss the management of plastic waste including sorting, feedstock recycling, and energy recovery.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Describe the Solid Waste Management process in India including waste generation, collection, transportation, and disposal.	K3	CO1
2	17	Discuss the importance of waste quantification and describe the methods used for quantifying waste.	K4	CO2
3	18	Discuss the concept of Zero Waste Management and its implementation.	K5	CO3
4	19	Categorize the methods of treatment for hazardous waste.	K3	CO4
5	20	Classify the biomedical wastes and their methods of handling and disposal.	K3	CO5

Z-Z-Z END