

Basavarajeswari Group of Institutions  
**BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
 (Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code 

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First Semester B.E. Degree Examinations, March/April 2024

**WASTE MANAGEMENT**

Duration: 3 hrs

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
 2. Missing data, if any, may be suitably assumed*

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO:PI)</u>
<b><u>MODULE – 1</u></b>			
1.	a. Classify solid wastes based on sources and Types. Explain in brief the sources of solid wastes.	08	(2: 1: 1.2.1)
	b. List and explain factors affecting solid waste management.	06	(2: 1: 1.2.1)
	c. Define ESTs and mention the benefits of ESTs.	06	(2: 1: 1.2.1)
<b>OR</b>			
2.	a. With a neat flow diagram, explain the functional elements of solid waste management.	08	(2: 1: 1.2.1)
	b. Explain how maximizing Environmentally sound waste Reuse and Recycling is beneficial under ESSWM.	06	(2: 1: 1.2.1)
	c. Write a short note on the progress of Municipal Solid Waste Management in India.	06	(2: 1: 1.2.1)
<b><u>MODULE – 2</u></b>			
3.	a. Define Waste Stream Assessment. Also, mention the importance of waste stream assessment.	06	(2: 2: 1.2.1)
	b. Illustrate the waste generation and Composition.	06	(2: 2: 1.2.1)
	c. Explain the Physical Characteristics of Waste.	08	(2: 2: 1.2.1)
<b>OR</b>			
4.	a. Explain the Public health and Environmental Effects due to improper management and handling of wastes.	08	(2: 2: 1.2.1)
	b. Briefly explain the chemical Characteristic of Wastes.	06	(2: 2: 1.2.1)
	c. Briefly illustrate a case study of status of waste generation of an Indian city.	06	(2: 2: 1.2.1)
<b><u>MODULE – 3</u></b>			
5.	a. Explain the waste collection components that influence the waste collection system.	06	(2: 3: 1.2.1)
	b. Briefly analyze the waste storage containers with advantages and disadvantages.	08	(2: 3: 1.2.1)
	c. What are the activities involved in Implementing of collection & transfer system.	06	(2: 3: 1.2.1)

**OR**

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| <b>6.</b> | <b>a.</b> What are the various formulae used during the design of a waste collection system.   | <b>08</b> | (2: 3: 1.2.1) |
|           | <b>b.</b> Explain the various aspects to be considered while selecting the site for waste disposal.  | <b>06</b> | (2: 3: 1.2.1) |
|           | <b>c.</b> Explain the factors that affect the production of leachate and landfill gas. Also, discuss the major hazards due to landfill gas emission. | <b>06</b> | (2: 3: 1.2.1) |

**MODULE – 4**

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| <b>7.</b> | <b>a.</b> Explain the purpose of waste processing.   | <b>06</b> | (2: 4: 1.2.1) |
|           | <b>b.</b> Explain how size reduction equipment is selected. With neat sketches explain the two frequently used size reduction equipment's. | <b>10</b> | (2: 4: 1.2.1) |
|           | <b>c.</b> What are the benefits of volume reduction or compaction?   | <b>04</b> | (2: 4: 1.2.1) |

**OR**

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| <b>8.</b> | <b>a.</b> Explain the basic purpose, monitoring and Evaluation of Source reduction.                    | <b>10</b> | (2: 4: 1.2.1) |
|           | <b>b.</b> Explain the Economic, Environmental and health, and social significance of source reduction. | <b>10</b> | (2: 4: 1.2.1) |

**MODULE – 5**

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| <b>9.</b> | <b>a.</b> Classify and explain the hazardous wastes.  | <b>10</b> | (2: 5: 1.2.1) |
|           | <b>b.</b> Explain (i) Thermal treatment, and (ii) Biological treatment of hazardous wastes. | <b>10</b> | (2: 5: 1.2.1) |

**OR**

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| <b>10.</b> | <b>a.</b> Write short note on the following relating to Hazardous waste management<br>(i) Pollution Prevention and Waste Minimization.<br>(ii) Laws, regulations and standards in India<br>(iii) Existing Regulations.<br>(iv) Current Scenario and Ground Reality. | <b>20</b> | (2: 5: 1.2.1) |
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