

Chapter 17 - Waste Generation and Management

1. Waste Generation:

Waste is generated from various human activities and can be categorized based on its sources:

a) Sources of Waste:

- **Domestic Waste:** Includes paper, glass, plastic, rags, kitchen waste, etc.
 - **Industrial Waste:** Generated from mining, cement factories, oil refineries, and construction units.
 - **Agricultural Waste:** Comprises plant remains, animal waste, and processing waste from farms.
 - **Commercial Waste:** Produced by offices, shops, and institutions, including paper and packaging material.
 - **Municipal Sewage:** Includes degradable and non-degradable waste from households and offices.
 - **E-Waste:** Refers to discarded electronic devices like computers, phones, and TVs. It contains toxic substances and needs special disposal methods.
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2. Waste Management:

Managing waste is crucial to maintaining a healthy environment. Various methods are employed to ensure safe disposal and reduce pollution:

a) Methods of Safe Disposal:

- **Segregation:** Sorting waste into biodegradable and non-biodegradable categories at the household level.
- **Dumping:** Controlled disposal in designated landfills.
- **Composting:** Converting biodegradable waste into manure through natural decomposition.
- **Drainage:** Proper channeling of liquid waste to prevent contamination.
- **Treatment of Effluents:** Industrial effluents are treated before being discharged to reduce pollution.
- **Incineration:** Burning waste at high temperatures to reduce volume and destroy harmful substances.
- **Scrubbers and Electrostatic Precipitators:** Devices used to remove pollutants from industrial emissions.

3. Role of Households:

- **Segregation at Source:** Households should separate biodegradable waste (like garden waste) for composting and non-biodegradable waste for recycling.
 - **Sewage Treatment Plants:** Treat domestic sewage before releasing it into water bodies to prevent pollution.
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Key Points:

- Waste management is essential to reduce environmental hazards.
- Segregating waste at the source is the first step toward effective waste management.
- Modern technologies like scrubbers and precipitators help control industrial emissions.

