UNIT I

Syllabus :

Definition of solid waste.

Meaning of different solid waste-Domestic waste, commercial waste. Industrial waste, market waste, agricultural waste, biomedical waste, E-waste, hazardous waste, institutional waste, etc.

Sources of solid waste.

Classification of solid waste-hazardous and non-hazardous waste.

Physical and Chemical characteristics of municipal solid waste.

Impact of solid waste on environment.

Solid waste management techniques-solid waste management Hierarchy, waste prevention and waste reduction techniques.

Factors affecting the solid waste generation.

UNIT II

Syllabus :

Storage of solid waste.

Collection methods of solid waste

Tools and Equipments - Litter Bin, Broom, Shovels, Handcarts, Mechanical road sweepers, Community Bin like movable and stationary Bin.

Transportation of municipal waste.

Transportation vehicles with their capacity working - Animal carts, Auto vehicles, Tractors or Trailers, Trucks, Dumper, Compactor vehicles. Transfer station- meaning, necessity, location.

Role of rag pickers and their utility for society.

Organization pattern of solid waste management system, Practices according to population of the town or city.

UNIT III

Syllabus :

Concept of Composting of waste

Principles of composting process

Factors affecting on composting process

Methods of composting

(A) Manual Composting : Bangalore method, Indore Method

(B) Mechanical Composting : Dano Process

(C) Vermicomposting : Concept

Land filling technique ,Factors to be considered for site Selection

Land filling methods-Area method, Trench method and Ramp method

Leachate and its control Biogas from landfill

Advantages and Disadvantages of landfill method

Recycling of municipal solid waste

Incineration of waste

Introduction of incineration process.

Types of incinerators – Flash, Multiple chamber incinerators

Products of incineration process with their use.

Pyrolysis of waste - Definition, methods

Products of incineration process

Advantages and Disadvantages of incineration process.

UNIT IV

Syllabus :

Biomedical Waste Management

Definition of Biomedical Waste

Sources and generation of Biomedical Waste

Classification of Biomedical Waste

Management technologies

Health Aspects and Public Involvement in Solid Waste Management

Health aspect during handling and processing.

Health problem during time of segregation, recovery, recycling and reuse of solid waste.

Public Involvement and participation in Solid waste management Practices.

UNIT V

Syllabus :

Industrial waste management
Variety of industrial waste
Collection and disposal of industrial waste
Control measures for industrial waste
Recycling of industrial waste
E-waste management
Definition of E-waste
Varieties of E-waste
Dangers of E-waste
Recycling of E-waste
Disposal of E-waste

UNIT VI

Syllabus :

Legal Aspects :

Legal aspects- present scenario

Municipal Solid Waste Management Rules, 2016

Biomedical Waste Management Rules, 2016

E- Waste Management Rules, 2016

Construction and demolition Waste Management Rules, 2016

Hazardous and other wastes Management Rules, 2016

Plastic Waste Management Rules, 2016

Role of Central Pollution Control Board and Maharashtra Pollution Control Board in management of solid waste from various sources.

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