



17605

11718

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All questions are **compulsory**.
 - (2) Answer **each** next main question on a **new** page.
 - (3) Illustrate your answers with **neat** sketches **wherever** necessary.
 - (4) Figures to the **right** indicate **full** marks.
 - (5) Mobile Phone, Pager and any other Electronic Communication devices are **not** permissible in Examination Hall.

Marks

1. Attempt **any ten** of the following :

(2×10=20)

- i) Define 'solid waste'.
- ii) List types of solid waste.
- iii) List various transportation equipments in solid waste management system.
- iv) List methods of collection of municipal solid waste.
- v) List the types of disposal of solid waste.
- vi) State principle of vermi composting.
- vii) State principle of composting.
- viii) Define biomedical waste. State its components.
- ix) Enlist sources of biomedical waste.
- x) State any two features of Biomedical Waste Management of Handling Rule, 1998.
- xi) Write any two precautions to be taken during handling and processing of solid waste.
- xii) Enlist any two methods of mass education in SWM.
- xiii) State any two benefit of recycling of solid waste.
- xiv) State any two steps in recycling of solid waste.

2. Attempt **any two** :

(8×2=16)

- a) List the characteristics of solid waste. Explain any two characteristics of solid waste along with solid waste management hierarchy.
- b) Define transfer station. State necessity of transfer station. State the factors affecting selection of site for transfer station.
- c) State the factors affecting composting. State the different methods of composting. Explain any one in detail with neat labelled sketch.

P.T.O.

**3. Attempt any two :****(8×2=16)**

- a) State the sources of solid waste. Write impact of solid waste on environment. State the factors affecting generation of solid waste.
- b) State the methods of storage of (MSW) municipal solid waste. State current practice of solid waste management in India in brief.
- c) State the factors affecting selection of site for land filling of solid waste. State advantages and disadvantages of landfill method.

4. Attempt any two :**(8×2=16)**

- a)
 - i) State various ways of solid waste prevention and reduction.
 - ii) Draw the organisation pattern of solid waste management.
- b) Describe pyrolysis method of incineration w.r.t. meaning, principle, merits and demerits.
- c) Define E-waste. State varieties of E-waste. Explain effects of E-waste on human health and environment.

5. Attempt any two :**(8×2=16)**

- a)
 - i) Explain use of by-product of incineration method of solid waste.
 - ii) Explain control measures taken for industrial waste.
- b) Classify biomedical waste treatment w.r.t. option, category, treatment and disposal.
- c) Explain the following :
 - i) Leachate from land filling
 - ii) Industrial waste
 - iii) Reuse of solid waste
 - iv) Purpose of recycling.

6. Attempt any two :**(8×2=16)**

- a) Explain disposal and recycling of E-waste.
 - b) Define communicable and non-communicable diseases. Discuss the importance of public involvement and participation in SWM.
 - c) State methods of collecting recyclables. Describe current status of recycling of SW in India.
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