

17605

11920

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) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

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- (a) Define (a) Solid waste (b) Hazardous waste
- (b) Explain health problems associated with handling and processing of solid waste.
- (c) Explain any four characteristics of Hazardous waste.
- (d) Explain equipments used for collection and transportation of solid waste.
- (e) Describe Pyrolysis process of waste treatment and its advantages.
- (f) Define 'E-waste' and enlist its sources.
- (g) Describe control measures of industrial waste.

2. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) State factors affecting generation of solid waste.
- (b) Enlist collection methods of municipal solid waste and explain any one.
- (c) Define composting and describe principle of composting process.
- (d) State the benefits of recycling of Industrial waste.
- (e) State steps in recycling of solid waste and explain any one.
- (f) Explain health problems during reuse, recovery and recycling of solid waste.

3. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) Explain solid waste management hierarchy.
- (b) Draw organisation pattern of solid waste management.
- (c) Enlist factors affecting composting and explain any two of them.
- (d) Explain disposal methods of Industrial waste.
- (e) Describe incineration and explain any one of its type.
- (f) Explain disposal methods of 'E-waste'.

4. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) Describe any one Indore or Bangalore method from manual composting process.
- (b) Describe situation of solid waste recycling in India.
- (c) Describe collection of biomedical waste by type of waste and colour code used for collection of bags.
- (d) Describe impact of solid waste on environment.
- (e) State factors affecting selection of site for transfer station.
- (f) Describe leachate and its control in landfills.

5. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) Explain vermi composting process and state its concept.
- (b) State various methods of storage of municipal solid waste.
- (c) Enlist methods of disposal of biomedical waste and explain any one.
- (d) Describe purpose of recycling.
- (e) Explain public involvement and participation in solid waste management in India.
- (f) Explain meaning of commercial waste, institutional waste, agricultural waste and domestic waste.

6. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) Define transfer station and state necessity of transfer station.
 - (b) Describe by products from incineration process and state their uses.
 - (c) Explain methods in collection of recyclables.
 - (d) Define biomedical waste and list its sources of generations.
 - (e) Enlist methods of landfills for solid waste and explain any one.
 - (f) Explain various varieties of E-waste.
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