

22605

12526

3 Hours / 70 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 FIVE of the following :** **10**
- a) State any four chemical characteristics of municipal solid waste.
 - b) Enlist the tools and equipment used in collection of solid waste.
 - c) State the methods of storage of household waste.
 - d) Enlist sources of Biomedical waste.
 - e) State the characteristics of Hazardous waste.
 - f) Enlist varieties of industrial waste.
 - g) State the importance of legal aspect in solid waste management.

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- 2. Attempt any THREE of the following : 12**
- a) State the impact of improper solid waste management on environment.
 - b) Explain the role of rag pickers in solid waste management.
 - c) Define transfer station. And also state criteria for location of transfer station.
 - d) Define pyrolysis. State the products of incineration process with their use.
- 3. Attempt any THREE of the following : 12**
- a) Explain the difference collection methods of solid waste.
 - b) Draw organization pattern of solid waste management.
 - c) Enlist two advantages and two disadvantages of incineration process.
 - d) Explain step by step process of vermicomposting.
- 4. Attempt any THREE of the following : 12**
- a) Enlist the names of any four transport vehicles with their capacities for transporting municipal waste.
 - b) State the importance of public participation in solid waste management.
 - c) Explain various control measures for industrial waste.
 - d) Explain 3R principle for disposal of E-waste.
 - e) Explain salient features of plastic Waste Management Rule-2016.

5. Attempt any TWO of the following : 12

- a) Differentiate between Indore and Bangalore method of composting.
- b) Explain segregation of biomedical waste as per biomedical waste Management Rule-2016
- c) Discuss the origin and ill effects of following E-waste constituents on human health.
 - i) Cadmium
 - ii) Lead
 - iii) Mercury
 - iv) Hexavalent chromium
 - v) Brominated flame retardants (BFR)
 - vi) Plastic compounds

6. Attempt any TWO of the following : 12

- a) State various method of land filling. Explain any one method with neat sketch.
 - b) Define biomedical waste and Explain the classification of Bio-medical waste.
 - c) Describe methods of recycling of industrial waste.
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