

PSG COLLEGE OF ARTS AND SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2023
(Second Semester)

Branch – ENVIRONMENTAL SCIENCE

INTEGRATED WASTE MANAGEMENT

Time: Three Hours

Maximum: 50 Marks

SECTION – A (5 Marks)

Answer ALL Questions

ALL Questions carry EQUAL marks (5 x 1 = 5)

- Which integrated waste management is reduced on an individual level?
(i) Burning (ii) Disposal (iii) Recycling (iv) Source reduction
- Why recycling of metal is more cost effective?
(i) Extraction of metal increases (ii) Increases operating cost
(iii) Reduces operating cost (iv) Reduces odor
- Why is it difficult to recycle plastics?
(i) It is very hard (ii) It comes in different sizes
(iii) It is adhesive (iv) It contains different types of polymer resins
- Which of the following techniques can be implemented to reduce hazardous waste?
(i) Chemical exchange (ii) Transportation
(iii) Trans boundary movement (iv) Analysis
- What is the hazardous pollutant released from circuit boards?
(i) Arsenic (ii) Lead (iii) Barium (iv) Copper

SECTION – B (15 Marks)

Answer ALL Questions

ALL Questions carry EQUAL marks (5 x 3 = 15)

- a. Explain the composition of municipal solid waste.
OR
b. Discuss the significance of source segregation.
- a. Explain the physical characteristics of municipal solid waste.
OR
b. Illustrate the load count analysis for solid waste quantification.
- a. Differentiate between recycling and refurbishing with examples.
OR
b. State the advantages and disadvantages of Extended Producer's Responsibility (EPR).

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9. a. Outline the characteristics of hazardous waste.
OR
b. Differentiate between waste minimization and pollution prevention.
10. a. Classify the different categories of e-waste.
OR
b. Illustrate the social entrepreneurial opportunities and challenges.

SECTION – C (30 Marks)

Answer ALL Questions

ALL Questions carry EQUAL marks (5 x 6 = 30)

11. a. Critically analyze the various functional elements of solid waste management.
OR
b. Explain factors affecting the generation rate of solid waste.
12. a. Elucidate the chemical characteristics of municipal solid wastes.
OR
b. Describe the waste management recovery process with a case study.
13. a. Explain the different methods of composting.
OR
b. Evaluate the available options for landfill remediation.
14. a. Compare the solidification and incineration methods for treatment of hazardous waste.
OR
b. Enumerate the landfill liner and cover criteria for hazardous waste disposal prescribed by CPCB.
15. a. Plastic waste is a growing menace, and a wasted opportunity - Justify.
OR
b. Evaluate the various opportunities for utilization of fly ash for sustainable environment management.

Z-Z-Z

END