

Exam Date & Time: 10-Jul-2023 (02:30 PM - 05:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

VI Semester Make up Examination
SOLID AND HAZARDOUS WASTE MANAGEMENT (CHE 4058)
SOLID AND HAZARDOUS WASTE MANAGEMENT [CHE 4058]

Marks: 50

Duration: 180 mins.

Descriptive Questions

Answer all the questions.

Section Duration: 180 mins

- 1) Explain about the designs of larger transfer stations. Also mention the advantages and disadvantages of each design. (5)
 - A)
 - B) What are the differences between Murf and Full stream processing? Which of these method is economically viable? (2)
 - C) Discuss about various gas cleaning equipment installed in an incinerator. (3)
- 2) Given that 100 ton/h of solid waste is applied to a rotary screen for the removal of glass prior to shredding. Determine the recovery efficiency and effectiveness of the screen based on the following experimental data:
 - A) The percentage of glass in the solid waste = 10% (5)
Total weight of material in underflow = 15 ton/h
Weight of glass in screen underflow = 9.1 ton/h
 - B) Write a short note on various methods of landfilling. (3)
 - C) Write a shot note on the composition of leachate and mention different treatment methods available for the treatment of leachate. (2)
- 3) Discuss about the different phases in the landfill gas production with schematics of variation in gas composition. (4)
 - A)
 - B) Discuss about the recycling of paper with a schematic diagram. (3)
 - C) What is life cycle assessment (LCA)? Explain the application of LCA in solid waste (3)

management with an example?

- 4)

Explain about the mass burn incineration technology with a neat sketch.

(5)
- A)
- B)

Explain the working of hydropulper with a neat sketch.

(3)
- C)

Suggest a suitable composting technology to handle a homogeneous industrial sludge. Also discuss about the merits and demerits of suggested technology.

(2)
- 5)

What are the different types of plastics used commercially? Which types of plastics contribute to recycling market and how are they recycled?

(5)
- A)
- B)

Write short notes on any three physico-chemical treatment methods for the processing of hazardous wastes.

(3)
- C)

Write a short note on any four thermal disposal options available for solid wastes.

(2)

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