

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

# GUJARAT TECHNOLOGICAL UNIVERSITY

M.E –II<sup>st</sup> SEMESTER–EXAMINATION – JULY- 2012

**Subject code: 1721704**

**Date: 10/07/2012**

**Subject Name: Solid Waste Management**

**Time: 10:30 am – 13:00 pm**

**Total Marks: 70**

## Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

**Q.1 (a)** State various types of solid waste. In detail discuss the solid waste scenario in India. Mention appropriate statistics. **07**

**(b)** Explain the meaning of 'physical composition of solid waste'. Why moisture content of solid waste is an important measure? **07**

**Q.2 (a)** Critically discuss health risks related to inadequate management of solid waste. **07**

**(b)** What are the different factors that affect the solid waste generation rate? Discuss each in brief. **07**

**OR**

**(b)** Explain the importance of Storage of waste at source. Discuss the types/characteristics of storage bins. **07**

**Q.3 (a)** What are transfer stations? What are the types of the same? Explain anyone type with compaction unit. Draw diagrams if necessary. **07**

**(b)** Explain 'density separation' and 'densification'. **07**

**OR**

**Q.3 (a)** Explain the importance of source segregation of solid waste in SWM. How does it help in recycling? **07**

**(b)** What is magnetic separation? Explain Eddy current separator with diagram. **07**

**Q.4 (a)** List various combustion systems, and discuss anyone in detail with neat figure. **07**

**(b)** Short note with figure – Pyrolysis. **07**

**OR**

**Q.4 (a)** Short note with figure – Fluidized Bed combustion. **07**

**Q.4 (b)** Short note – Heat Recovery Systems. **07**

**Q.5 (a)** Discuss the landfill method as a method of disposal of solid waste. **07**

**(b)** What are the different reactions that occur in a landfill? Discuss each one in brief. Use diagrams if necessary. **07**

**OR**

**Q.5 (a)** What is composting? Discuss the advantages of the same with reference to SWM. **07**

**(b)** Explain the scenario of legislations about the management of solid waste in India. Discuss Hazardous Wastes (Management and Handling) Rules, 1989 in the context. **07**

\*\*\*\*\*