

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – I • EXAMINATION – WINTER 2012****Subject code: 711803N****Date: 12-01-2013****Subject Name: Municipal and Hazardous Solid Waste Management****Time: 02.30 pm – 05.00 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) Explain need of integrated Municipal solid waste. **07**
(b) Explain the four R in solid waste. **07**

- Q.2** (a) Describe the action plan for effective disposal of MSW for Residential Area and Vegetable & Fruit Market **07**
(b) What are the functional elements of MSW & give key point of each element? **07**

OR

- (b) Explain recycling of hazardous waste with examples. **07**

- Q.3** (a) Enlist various reagents and chemicals used for stabilization of hazardous waste and explain its working mechanisms with sketch. **07**
(b) Enlist various reagents and chemicals used for solidification of hazardous waste and explain its working mechanisms with sketch. **07**

OR

- Q.3** (a) Draw the flow diagram for any one system for processing and recovery of solid waste and explain it in detail. **07**
(b) Explain Incineration with reference to processing of municipal solid waste. **07**

- Q.4** (a) Write a short note on any one method for solid waste estimation. **07**
(b) Explain the components of municipal solid waste **07**

OR

- Q.4** (a) Write a short note on need of transfer and transport in the management of municipal solid waste. **07**

- Q.4** (b) Write a note on phased operation of secured landfill **07**

- Q.5** (a) Explain double liner system for secured landfill with sketches. **07**
(b) Write a note on knock down criteria for selection of hazardous landfill site. **07**

OR

- Q.5** (a) What is biomedical waste ? Explain transportation of biomedical waste in detail. **07**
(b) Write a short note on “Application of GIS in Solid Waste Management”. **07**
