

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – WINTER 2012****Subject code: 1723005****Date: 02-01-2013****Subject Name: Environment and Safety Management****Time: 10.30 am – 01.00 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) What are the ways to treat the hazardous waste? Discuss the construction and working of Thermal Incinerator. **07**
- (b) Discuss with detailed diagram the method of collecting samples for determining emissions of Nitrogen oxides from stationary source. **07**
- Q.2** (a) What are the factors to be considered while collecting the vent stream from safety devices? Discuss the construction and working of horizontal blow down tank. **07**
- (b) Discuss Emergency flare system to tackle release from safety devices. Narrate its advantages. **07**
- OR**
- (b) Give types of Cyclone Separator for Emergency Relief Device Effluent collection and explain with the help of a neat figure. **07**
- Q.3** (a) With the help of diagram explain working of rupture disc. **07**
- (b) List out the steps for determining the relief vent diameter for two-phase flow during runaway reaction. **07**
- OR**
- Q.3** (a) What is e-waste? Give types of e-Waste. List various sources of e-Waste and discuss damage caused by e-waste. **07**
- (b) Explain hydrometallurgical treatment process for extraction of metals from PCB's using green leachants. **07**
- Q.4** (a) What are preconditions for repair of Pressure Vessel and how it is done in SMPV rules? What are special precautions to be taken against accidents during repair in SMPV rules? **07**
- (b) What are Filling , Manufacture , import, delivery and dispatch (unloading) in SMPV rules? **07**
- OR**
- Q.4** (a) List out the methodology from Pre-audit to final documentation for Environment Audit of a Chemical manufacturing unit. **07**
- (b) Give an overview of six basic tank designs for storage and handling of organic liquids. **07**
- Q.5** (a) Discuss the selection criteria for storage and handling of hazardous material in underground tanks. **07**
- (b) Discuss construction and working of incinerators used for solid hazardous waste. **07**
- OR**
- Q.5** (a) With neat diagram discuss construction and working of landfill site. **07**
- (b) Derive equation for volume determination of Sanitary Landfill Site. **07**
