

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E –IIst SEMESTER–EXAMINATION – JULY- 2012

Subject code: 1723005

Date: 12/07/2012

Subject Name: Environment and Safety 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) Explain the construction and working of Conventional and Balanced Bellows Safety Relief valves with the help of neat figure. **07**

(b) List out and explain in brief various treatment and disposal methods for e-waste. **07**

Q.2 (a) What is Environment Audit? What are the objectives of Environment Audit? **07**

(b) Discuss the method of determining emissions of sulfur dioxide from stationary sources (EPA method 6). **07**

OR

(b) Discuss the method of determining emissions of nitrogen oxides from stationary sources (EPA method 3A). **07**

Q.3 (a) Give the comparison between Environment Audit and Finance Audit. **07**

(b) List out the steps for determining the relief vent diameter for two-phase flow during runaway reaction. **07**

OR

Q.3 (a) List out the steps for design of an interlock system for liquid samples. **07**

(b) Discuss the selection criteria for storage and handling of hazardous material in underground tanks. **07**

Q.4 (a) List out and explain in brief the selection criteria for flame arresters. **07**

(b) Explain Environment Audit methodology. **07**

OR

Q.4 (a) Derive equation for volume determination of a sanitary landfill site. **07**

Q.4 (b) Explain design of high pressure tanks for storage of organic liquids. **07**

Q.5 (a) Explain the working of ‘Detonation Arresters’ with the help of neat sketch. **07**

(b) List out the steps for design of a gas incinerator. **07**

OR

Q.5 (a) Explain the following instrument systems for safe design and operation for storage and handling of highly toxic hazardous materials: **07**

(i) Pressure gauges

(ii) Temperature controller

(b) What are SMPV Rules? What is exempted in SMPV Rules? What are the restrictions on Filling, Manufacture and Import in SMPV Rules? **07**
