

Total No. of Questions : 10]

SEAT No. :

P4548

[Total No. of Pages : 2

[4959] - 1185

**B.E. (Chemical Engineering) (Semester - II)**

**CHEMICAL PROCESS SAFETY**

**(2012 Pattern) (Elective - III)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates :-*

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.*
- 2) *Neat diagrams must be drawn wherever necessary.*

**Q1)** a) Define Threshold Limit Values. [4]

b) Explain safety program with a neat diagram. [6]

OR

**Q2)** a) Explain evaluation phase in Industrial hygiene. [4]

b) Estimate in detail worker exposures to toxic vapors. [6]

**Q3)** a) Explain in short Dose versus Response curves. [3]

b) Discuss in short various legislations on safety control in chemical process plants. [7]

OR

**Q4)** Explain in detail about Unconfined Vapor Cloud Explosion (UVCE) [10]

**Q5)** a) Explain pressure versus time curves for Runaway reactions. [8]

b) Describe the ventilation and sprinkler systems to prevent fires and explosions. [8]

OR

**P.T.O.**

- Q6)** a) Discuss in detail storage and handling of toxic and flammable materials. [8]  
b) Describe in brief Relief systems those are using in Chemical industry.[8]

- Q7)** a) Describe hazards Identification and state process hazards checklists.[10]  
b) Describe Review of probability theory for Risk Assessment. [8]

OR

- Q8)** a) Write a short note on Event trees and fault trees. [8]  
b) Discuss in detail the concept for preventing the fire and explosion.[10]

- Q9)** Write a short notes on : [16]  
a) Tackling of Disaster  
b) Plan for Emergency  
c) Role of a Computer in safety  
d) Hazard models and risk data

- Q10)**a) Describe in detail Safety vs Production. [8]  
b) Describe the objective and benefits of safety audits. [8]

