

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII(OLD) • EXAMINATION – WINTER 2017****Subject Code: 173502****Date: 18/11/2017****Subject Name: Safety & Hygiene in Chemical Industries****Time: 10:30 AM to 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 modes of entry of toxic chemicals into human body and ways of inhibiting each of them? **07**  
(b) Distinguish Pluff and Plume Model of dispersion. **07**
- Q.2** (a) Explain Bhopal disaster with reasons of its occurrence and suggests ways to prevent such disaster? **07**  
(b) How to construct a flammability diagram? **07**
- OR**
- (b) Discuss Dow fire and explosion index (DF&EI). **07**
- Q.3** (a) Discuss detonation and deflagration in details with neat and clean diagram. **07**  
(b) Explain Dose vs Response curve in details. **07**
- OR**
- Q.3** (a) List out the methods used for qualitative risk analysis? Explain HAZOP in detail. **07**  
(b) Write a brief note on Material safety Data sheet (MSDS). **07**
- Q.4** (a) What are the different pressure relief devices? Explain any two with neat sketch. **07**  
(b) Explain various fire and explosion characteristics of materials. **07**
- OR**
- Q.4** (a) What do you mean by Isopleths? Explain steps to determine isopleths with neat and clean diagram. **07**  
(b) Write a brief note about Threshold limit value (TLV). **07**
- Q.5** (a) What is the significance of ERPG? Give stepwise method to determine Chemical Exposure Index? **07**  
(b) Write a brief note on the release mitigation procedure and release mitigation approaches? **07**
- OR**
- Q.5** (a) What is dense gas? Discuss Britter and McQuaid dense gas dispersion model. **07**  
(b) Describe various methods used for accident and loss measurement. **07**

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