

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – 4 EXAMINATION – WINTER 2017

Subject Code: 3340505**Date: 15-11-2017****Subject Name: Safety & Hazard Management in Chemical Industry****Time: 02:30 pm to 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.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

- Q.1** Answer any seven out of ten. **14**
1. Define fire & fire extinguisher.
 2. Enlist various hazards.
 3. Draw a suitability chart for fire class and fire extinguishers.
 4. Write full name of OHSAS and FMEA.
 5. Write the principle of foam type fire extinguisher.
 6. Define: Risk and Hazard.
 7. Write any four hazardous properties of caustic soda.
 8. What is Biological hazard?
 9. Enlist various methods for Risk Assessment.
 10. What is the importance of color code?
- Q.2** (a) Define: Accident, Hazard and Safety. **03**
- OR
- (a) Write the importance of Industrial safety. **03**
- (b) Explain OHSAS-18001. **03**
- OR
- (b) Explain in brief : Indian Standards for safety & health **03**
- (c) Explain classification of chemical hazards and control methods used for them. **04**
- OR
- (c) Explain Radiation hazards. **04**
- (d) Discuss: Chemicals as a cause of occupational diseases and poisoning **04**
- OR
- (d) Explain preventive measures of diseases due to chemical effect. **04**
- Q.3** (a) Explain about Ventilation and Lighting as engineering control methods for hazard reduction. **03**
- OR
- (a) Write hazardous characteristics of Chlorine. **03**
- (b) Explain: ETA with example. **03**
- OR
- (b) Explain: FTA with example. **03**
- (c) Explain in detail various classes of Fire. **04**
- OR
- (c) Define fire hazard. Explain the methods to prevent fire hazards. **04**
- (d) Explain construction and working of DCP fire extinguisher. **04**

- OR
- (d) Explain construction and working of soda acid fire extinguisher. **04**
- Q.4** (a) Write hazardous properties of Ammonia **03**
- OR
- (a) Write hazardous properties of Hydrochloric acid. **03**
- (b) Write the scope and methodology of HAZOP. **04**
- OR
- (b) Explain in detail: HAZAN **04**
- (c) Explain fire triangle with causes of fire hazards in detail. **07**
- Q.5** (a) Explain: Storage and Transportation of hazardous chemicals. **04**
- (b) Differentiate Respiratory and Non-respiratory personal protective devices with examples. **04**
- (c) Explain: Color codes for pipelines. **03**
- (d) Justify the sentence: "Safety is the collective responsibility" **03**

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