

Code No: RR420801

Set No. 1

IV B.Tech II Semester Regular Examinations, Apr/May 2008

SAFETY AND HAZARD ANALYSIS

(Chemical Engineering)

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. What are Chemical Safety Data Sheets. How they help in prevention of accidents. [16]
2. What are the first degree hazards and second degree hazards. Explain briefly about each one of them. [16]
3. Explain the effect of Temperature on Reaction rate with suitable Charts. List out the different reasons for the existence of these charts. [16]
4. Discuss about :
 - (a) Agitation Failure Protection
 - (b) Miscellaneous Interlocks. [8+8]
5. Write about the challenges to safety management education? [16]
6. Write about a note on flammable materials measuring instruments? [16]
7. Classify different fire extinguishers used in chemical industry. [16]
8. What is the importance of Hazard analysis and explain hazard analysis. [16]

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1. What are the controls that the Chemical Shipper has to follow to prevent hazards to common population. [16]
2. What are various hazards and the lines of defense. [16]
3. Discuss about the Hazards of Heat Transfer Operation. [16]
4. Discuss about :
 - (a) The Pneumatic Controller
 - (b) The Potentiometer Controllerfor safe operation in industry. [8+8]
5. Write about the importance of supervision in process industry? [16]
6. Write about the precautionary measurements to be considered for flammable materials? [16]
7. Define personnel protection equipment (PPE)? Discuss the place of PPE in general. [16]
8. What do you mean by Fault Tree Analysis and explain in detail. [16]

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1. Explain safety of worker in industry and describe about the personal protective equipments used in process industries. [16]
2. Explain how adequate roadways are very important to safety in plant layout. [16]
3. Discuss the Hazards of Pumps, Compressors and agitators. [16]
4. Discuss the following with reference to Design of Vessels for safe operation.
 - (a) Pressure and Temperature
 - (b) Minimum Plate Thickness
 - (c) External Pressure or Vacuum. [6+5+5]
5. Write about the challenges to safety management education? [16]
6. Discuss about cost analysis for flammable materials? [16]
7. Mention general limitations on the conditions for which gas masks are suitable. [16]
8. Define Safety effectiveness and Explain in detail. [16]

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1. Explain about the procedure to be followed before a chemical is purchased in quantity. [16]
2. Discuss about the various factors to be considered for the site selection of an industry. [16]
3. Discuss about the Hazards of Heat Transfer Operation. [16]
4. Discuss the following with reference to Design of Vessels for safe operation.
 - (a) Pressure and Temperature
 - (b) Minimum Plate Thickness
 - (c) External Pressure or Vacuum. [6+5+5]
5. Describe the significance of Boilers and pressure vessels safety and training? [16]
6. Write about handling of flammable materials in a process industry? [16]
7. What do you mean of First-Aid Fire extinguishers. [16]
8. Define Safety effectiveness and Explain in detail. [16]
