

IV B.Tech II Semester Regular Examinations, Apr/May 2006
SAFETY AND HAZARD ANALYSIS
(Chemical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Explain how safety is dynamic force, both for individual, his employer and society. [16]
2. Explain with a neat sketch the “in line“ arrangement of processing equipment. [16]
3. Discuss about the Hazards of Heat Transfer Operation. [16]
4. Discuss about different Fabrication methods of Pressure Vessel. [16]
5. Write about worker education for safe control of a chemical process? [16]
6. Write about a note on flammable materials measuring instruments? [16]
7. Define personnel protection equipment (PPE)? Discuss the place of PPE in general. [16]
8. Write about HAZOP and HAZAN in detail with examples. [16]

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1. Explain how the companys image and stability is a hallmark of a successful business. [16]
2. What are main features of “in line” arrangement of processing equipment. Explain in detail. [16]
3. Discuss the Hazards of Operations involving Simultaneous Heat and mass transfer. [16]
4. Discuss about different Fabrication methods of Pressure Vessel. [16]
5. Discuss about the essence of safety education? [16]
6. Write about locations and storage of flammable materials? [16]
7. What is meant by Flash Point, Fire Point and Spontaneous Combustion? [16]
8. Comment on “Risk analysis as tool in Safety Management“ in a process industry. [16]

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1. Explain about emergency action to be taken in case of accident during transportation of hazardous material. [16]
2. Which are items, for which peripheral location is most desirable. Explain your answer with suitable reasoning. [16]
3. Discuss the Hazards of Operations involving Simultaneous Heat and mass transfer. [16]
4. Discuss about different Fabrication methods of Pressure Vessel. [16]
5. Write about industrial safety training and education? [16]
6. What are the testing methods for identifying flammable materials? [16]
7. What are the different types of eye protection equipment? [16]
8. What is the importance of Hazard analysis and explain hazard analysis. [16]

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1. Define safety. Explain how the safety of workers insures economic development of an industry. [16]
2. What are problems inherent in the location and allocations of space for tankage. Explain. [16]
3. (a) Consider an Exothermic Chemical Reaction. Obtain an Expression for Maximum Stable Temperature Differential.
(b) What are the different methods of controlling Exothermic Reactions ?
(c) List out the different Unit Operations used in Industrial Practice. [6+6+4]
4. (a) Describe about the safety aspects considered during design of high presure chemical reactions.
(b) Why safety aspects are to be considered during design stage? [8+8]
5. Discuss about the essence of safety education? [16]
6. Write about handling of flammable materials in a process industry? [16]
7. What are the points to be considered in installing fire extinguishers in a CPI?[16]
8. Write about Failure Mode and Effect analysis and give suitable examples. [16]
