**Safety\_QB**

**Unit1**

1. Detail the importance of safety consciousness in chemical process industries.
2. Write any four probable causes of accidents in industries.
3. Explain the elements of safety organisation.
4. Discuss on OSHA.
5. Explain on Bhopal gas tragedy.
6. What is a Safety committee? Explain the various activities. Explain its functions and benefits.
7. Explain the roles and purposes of safety committee.
8. Discuss the various communication types followed in industries.
9. Explain the principle, requirements and objectives of Safety Policy. Discuss how the safety policies in an organization can be developed?
10. Explain on safety education and training.

**Unit2**

1. In toxicology, what is LD 50 and LC 50?
2. Identify any four critical reasons in which accident occurs in a pressure vessel.
3. Write any two chemical reaction hazards of process industries.
4. What is environmental impact assessment? What are the important factors it should address?
5. Explain ergonomics.
6. Classify the various hazardous chemicals and explain how will you identify, assess and control chemical hazards in industries.
7. Explain the classification of hazardous/dangerous chemicals in detail with suitable examples.
8. Explain the safe storage and handling methods of hazardous chemicals.
9. Discuss the high pressure and high temperature problems and risks in chemical industries and their safety protocols to be followed.
10. Explain the transportation methods of hazardous chemicals. Discuss the importance of Emergency Information Panel during transportation.
11. Explain the routes of entry of chemicals into our body?
12. Explain the safety protocols followed during site selection and site layout for chemical process industries.
13. Describe the various safeguarding methods carried out in process industries.
14. Explain a detailed note on onsite and offsite emergency preparedness plans followed in industries.
15. Explain the classification of hazardous chemicals in detail. Discuss the storage methods of any two classes.
16. Write the important safety considerations followed for pressure vessels and heat equipment.

**Unit3**

1. Write down the steps followed in accident investigation.
2. Explain the accident causation theories for the prevention of accidents.
3. Explain multiple causation accident causation theory.
4. Differentiate fire triangle and fire tetrahedron with a neat model diagram.
5. Investigate on Bhopal gas tragedy.
6. What is Job Safety Analysis (JSA)? Explain its process for a suitable job description or job sheet.
7. Elaborate the various fire protection systems used in industries.
8. For an industrial accident, how will do the accident investigation analysis? Discuss in detail.
9. A manufacturing company produces plastic articles and employs 500 working people.
   * + 1. The data recorded for an accident in a particular year given:
       2. Average hours worked by the workers - 3000.
       3. Days lost due to accidents – 480
       4. Calculate frequency rate, incidence rate and severity rate.
10. Discuss the various safety performance parameters.
11. Explain on various fire extinguishers.
12. Explain the classification of fires with examples.
13. What is a fire triangle and fire tetrahedron and how do you use it? Show with a neat representation.
14. Classify fires with examples.
15. Explain any one fire extinguisher used in industries.
16. Explain the classification, costs and basic principles of accident prevention.

**Unit4**

1. Classify the hazard identification techniques and describe the principle of Failure mode and Effects analysis in safety engineering.
2. Discuss the main objectives of safety audit carried out in industries.
3. Explain the concept of Fault tree analysis with example.
4. Explain the principles of HAZOP study process with any chemical process.
5. What is risk assessment? Discuss the various steps involved during risk assessment process with a schematic diagram.
6. Explain the procedure for calculating the Dow fire and Explosion index with a neat block diagram.
7. Discuss on risk analysis.

**Unit5**

1. List out the various PPEs used in process industries. Describe its function on the hazardous environment.
2. Explain the occupational health hazards with types and examples.
3. Discuss on housekeeping followed in industries.
4. Explain on respiratory PPEs.
5. Discuss on factories act enacted for safety and health.
6. Explain on workmen’s compensation act.
7. Describe any two important safety acts followed in industries.