

## Scheme - I

### Sample Question Paper

**Program Name** : Diploma in Chemical Engineering  
**Program Code** : CH  
**Semester** : Fourth  
**Course Title** : Industrial Safety and Maintenance  
**Marks** : 70

**22408**

**Time: 3 Hrs.**

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#### Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

#### **Q.1) Attempt any FIVE of the following.**

**10 Marks**

- a) Define safety planning.
- b) Write sources and protection of Noise hazards.
- c) Give any two benefits of safety audit.
- d) Give any two causes of accidents in chemical industry.
- e) List out accidents investigation techniques .(any two)
- f) Give the methods of control of hazards in fertilizer plants. (any two)
- g) List the causes of equipment break down. (any two)

#### **Q.2) Attempt any THREE of the following.**

**12 Marks**

- a) Give the fundamental steps in an accidental investigation .
- b) Describe the accident investigation process with purpose.
- c) Explain features of accident reports .
- d) Describe the safety measures taken in chemical industry.

#### **Q.3) Attempt any THREE of the following.**

**12 Marks**

- a) Explain the objectives of safety audit.
- b) Give procedure for start up of plant.
- c) Describe the prevention methods of hazards in Insecticide plants.

d) Give the major steps of a quantitative risk analysis.

**Q.4) Attempt any THREE of the following.**

**12 Marks**

- a) Give the objectives of strategic planning.
- b) Differentiate between qualitative and quantitative risk analysis.
- c) Give controlling methods for toxic chemical hazards in industry.
- d) Explain the objectives of predictive maintenance in industry.
- e) List out sources of radioactive hazards with one example of each.

**Q.5) Attempt any TWO of the following.**

**12 Marks**

- a) Explain the need of safety planning in industry.
- b) Write salient features of Factory Act 1948(any four).
- c) Describe the sampling technique for petro chemical industry.

**Q.6) Attempt any TWO of the following.**

**12 Marks**

- a) Give the need of precaution to be taken against Electrical hazards . Explain it in details.
- b) Apply On-Line maintenance Technique for Rotameter.
- c) “Shut down maintenance for sugar industry is preferred ”justify your answer.

## Scheme - I

### Sample Test Paper - I

**Program Name** : Diploma in Chemical Engineering  
**Program Code** : CH  
**Semester** : Fourth  
**Course Title** : Industrial safety and maintenance  
**Marks** : 20

**22408**

**Time: 1 Hour**

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#### Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

#### Q.1 Attempt any FOUR.

**08 Marks**

- a) List types of hazards.
- b) Define an accident.
- c) Give the safety policy for industry.
- d) Give the advantages of fault tree analysis. (any two)
- e) Give the objectives of safety planning.

#### Q.2 Attempt any THREE.

**12 Marks**

- a) Describe the procedure of safety audit.
- b) Explain event tree analysis method in details.
- c) Describe incident and accident in industry with one example.
- d) Write the procedure for accident investigation with example.

## Scheme - I

### Sample Test Paper - II

**Program Name** : Diploma in Chemical Engineering  
**Program Code** : CH  
**Semester** : Fourth  
**Course Title** : Industrial safety and maintenance  
**Marks** : 20

**22408**

**Time: 1 Hour.**

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#### **Instructions:**

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

#### **Q.1 Attempt any FOUR.**

**08 Marks**

- a) Give the fundamental steps in an accidental investigation.(Any two)
- b) List the types of investigations.(Any two)
- c) Differentiate between preventive and predictive maintenance.
- d) Give the causes of Bhopal Disasters.
- e) Write the purpose of investigation in case of industrial accidents.

#### **Q.2 Attempt any THREE.**

**12 Marks**

- a) State function and responsibilities of maintenance department.
- b) Explain the procedure of Shut down maintenance.
- c) Describe Schedule maintenance in details.
- d) Write salient features of Factory Act 1948 (any four)