

22408

22223

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following: 10**
- Define safety planning.
 - Give any two objectives of strategic planning.
 - Give benefits of safety audit.
 - Define Accident.
 - List out the types of accident investigations techniques.
 - Give the control methods of hazards in chloro-alkali industry
 - Give any four types of maintenance.
- 2. Attempt any THREE of the following: 12**
- Describe the role of strategic planning in safety in chemical industry.
 - Explain the sources of radiation hazard.
 - Give the causes of accident in chemical industry (any four)
 - Explain sampling technique used in pharmaceutical industry.

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- 3. Attempt any THREE of the following:** **12**
- a) List out the causes of explosion hazard.
 - b) Differentiate between breakdown maintenance and preventive maintenance.
 - c) Give the precautions to be taken to prevent hazards in chemical industry.
 - d) Describe the process for accident investigation. (any one)
- 4. Attempt any THREE of the following:** **12**
- a) Explain implementation tools of strategic planning in industry.
 - b) Explain the procedure of HAZOP study in chemical industry.
 - c) Describe case study of Bhopal disaster.
 - d) Explain shut-down maintenance in sugar industry.
 - e) Describe safety integrity level [SIL] to reduce risk in detail.
- 5. Attempt any TWO of the following:** **12**
- a) Give the classification of variety of plans in industry and describe it.
 - b) Explain fault tree analysis with example.
 - c) Apply on-line maintenance technique for Rotameter.
- 6. Attempt any TWO of the following:** **12**
- a) Explain factories Act. 1948 [Amendment] in detail.
 - b) Identify hazards occurs in petrochemical industry and explain any one of them
 - c) Identify responsibilities of maintenance department for the chemical industry.
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