

# 22408

**24225**

**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**
- a) Define strategic planning.
  - b) Give the principle of safety organizing.
  - c) Write any two benefits of safety audit.
  - d) List out any four accidents investigation techniques.
  - e) Define accident reporting.
  - f) List any two important control measures taken in chemical process plant while working.
  - g) What is shut-down maintenance in industry ?

P.T.O.

- 2. Attempt any THREE of the following :** **12**
- a) Explain the need of safety planning in industry.
  - b) Describe the causes of accident in chemical industry.
  - c) Give the fundamental steps in an accident investigation.
  - d) Write the precaution to be taken to prevent hazards in chemical industry.
- 3. Attempt any THREE of the following :** **12**
- a) State the losses due to accident.
  - b) Describe the importance of plant maintenance.
  - c) Give safety measures adopted in fertilizer industry.
  - d) Describe the immediate and basic causes of investigation.
- 4. Attempt any THREE of the following :** **12**
- a) Describe the procedure of safety planning.
  - b) Explain the Failure Modes and Effect Analysis (FMEA).
  - c) Describe the Bhopal Industrial Disaster.
  - d) Write the advantages and disadvantages of break down maintenance.
  - e) Describe the procedure for Hazard and Operability Study. (HAZOP)
- 5. Attempt any TWO of the following :** **12**
- a) Describe the policy formulation and policy implementation in strategic planning.
  - b) Explain factories Act 1948 with respect to –
    - i) General duties of occupier.
    - ii) Approval, licensing and registration of factories
    - iii) Duties of the inspector.

- c) Give the industrial safety measures (controlling methods) taken in following industry –
- i) Insecticide industry.
  - ii) Explosive industry.
  - iii) Polymer plant.

**6. Attempt any TWO of the following :**

**12**

- a) Describe the Fault Tree Analysis (FTA) and Event Tree Analysis (ETA).
  - b) Explain functions and responsibilities of plant maintenance department.
  - c) Give the objectives of preventive maintenance and Write the advantages of preventive maintenance.
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