

# AJ-135

April-2015

**B.Sc., (Fire & Safety) Sem.-IV**

**CC – Safety in Hydrocarbon Industry**

**Time : 3 Hours]**

**[Max. Marks : 70**

1. (a) Why there is a need for safety in chemical industries ? Explain on site emergency plan. 7

**OR**

Define : (Any **three**)

- (i) Hazard
- (ii) Risk
- (iii) Incident
- (iv) Accident

- (b) Write short notes : (Any **three**) 7

- (i) Near or narrow miss
- (ii) No loss time accident
- (iii) Reportable accident
- (iv) Major accident

**OR**

What is MSDS, give an appraised on MSDS and define off site emergency plan.

2. (a) What are the important activities carried out in refinery and what are the important petroleum products. 7

**OR**

Give classification of products as per Indian Petroleum Act with examples and their flash point.

- (b) What are the types of storages in refinery in bulk storage and non bulk storage & suggest control measures. 7

3. (a) What is the significance of proper maintenance in safety, explain preventive maintenance and predictive maintenance & its comparison. 7

**OR**

What is corrosion, corrosive substances and how to prevent corrosion ?

- (b) What is competent person and at what intervals the pressure vessels should be examined ? 7

**OR**

Give a sequential steps of shutdown of chemical plant.

4. (a) Explain chemistry of fire and describe in details fire prevention and fire protection. 7

**OR**

How will you define hazardous area classification and explain as per zone division zone 0, zone 1 and zone 2.

- (b) What is passive and active fire protection system for chemical industries ? Explain in details. 7

**OR**

Permit to work its purpose, aims & objective and give a performa of hot work permit.

5. Short Question : 14

- (1) Full form of OISD & GDP.
  - (2) Full Form of NFPA & MAH.
  - (3) Full form of NIOSH and EPA.
  - (4) List out any two government laws applicable to chemical industries.
  - (5) All chemical industries are classified as hydro-carbon industries. Yes/No
  - (6) OISD is applicable to all chemical industries. (True / False)
  - (7) Earthling / bonding to petroleum pipelines & tankers are essential to protect from \_\_\_\_ hazard.
  - (8) No storage license is required to store gas cylinders. (True/False)
  - (9) Full form of J S A & P H A.
  - (10) Write down full form of I D L H.
  - (11) What is "RACE" in case of fire ?
  - (12) What is "PASS" in case of fire extinguisher ?
  - (13) Flammable gas detectors are set at their higher flammability limits. True / False.
  - (14) TLV is gas concentration in air for 12 hrs working. True / False
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