



B.Tech Degree VIII Semester Examination

May 2004

SE 804(B) SAFETY IN PETROLEUM & PETROCHEMICAL INDUSTRIES

Time: 3 Hours

Maximum Marks: 100

(All questions carry EQUAL marks)

- I. (a) With the help of a diagram, explain the operation of a single stage crude oil distillation Unit.
 (b) Explain the role of operating variables in the product distribution obtained from a catalytic cracker.

OR

- II. (a) Explain how the process variables influence the yield in a catalytic reformer.
 (b) Explain the process of azeotropic separation of butene and butadiene.

- III. (a) Explain the design criteria for selection of fire water network in a refinery.
 (b) Discuss the classification of petroleum products and the hazards associated with them.

OR

- IV. Write short notes on :

- (i) Performance number of a liquid fuel.
 (ii) Octane number.
 (iii) Smoke point.
 (iv) Cloud point.

- V. Describe the salient features of different types of vertical cylindrical tanks used for the storage of petroleum liquids.

OR

- VI. (a) Explain the various factors to be considered in deciding the layout of a refinery tank farm.
 (b) Discuss the important features of fire protection arrangements in large tank farms.

- VII. The details of a gasoline/diesel loading gantry for road tankers is given below :

No. of loading points	:	20
Centre to centre distance between	:	
tanker bays	:	3m
Length of gantry	:	50m

Design a layout for the fire protection of the gantry area. Make necessary assumptions.

OR

- VIII. (a) What are the fire protection measures adopted in off-shore drilling platforms ?
 (b) Explain the hazards involved in the storage, handling and transportation of LPG.

- IX. Discuss the safe procedure for the desludging, cleaning and repair of a floating roof crude oil tank.

OR

- X. Name the major water pollutants from a petroleum refinery. How are they effectively removed before discharging effluents into water bodies ?