

Code No: M0826/R07

Set No. 1

**IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
PETROLEUM AND PETROL CHEMICAL TECHNOLOGY
(Chemical Engineering)**

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. Describe the history of petroleum crude exploration in India. [16]
2. (a) What is the importance of a flash vapourisation curve? Describe how vacuum flash vapourisation can be obtained.
(b) What is a midpercent curve? What is its utility? [8+8]
3. Explain in detail about the concept of integrated refineries. [16]
4. What is sweetening process? Explain any one sweetening method of gasoline. [16]
5. What type of unit operations occur during the decomposition of olefins? [16]
6. With a neat flow sheet, explain the ammonia synthesis by steam reforming of hydrocarbons. [16]
7. Describe the process with neat flow sheet of formaldehyde manufacture by silver catalysts, BASF process with off gas recycle. [16]
8. Explain the procedure for direct oxidation process of ethylene oxide and write their applications. [16]

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Set No. 2

**IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
PETROLEUM AND PETROL CHEMICAL TECHNOLOGY
(Chemical Engineering)**

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. (a) Explain about the conversion of organic matter into petroleum crude.
(b) How the properties of petroleum crude are changed in the petroleum deposits? [8+8]
2. What are the utilities of distillation curve? How many types of distillation curves are there? Describe one of them. [16]
3. What are the important top products of atmospheric distillation of crude oil? Discuss their end uses in detail. [8+8]
4. (a) What is unisol process for gasoline treatment? Explain with a neat flowsheet.
(b) Explain about the characteristics of a solvent used for improvement of viscosity index of lubes. [10+6]
5. What is the main purpose of Coking? Explain how is it useful for catalytic or thermal crackers. [16]
6. Describe the principle and construction of Kellogg reactor (axial) used in the ammonia synthesis. [16]
7. Explain the ethylene glycol synthesis by hydration of ethylene oxide process. [16]
8. Discuss the production of vinyl chloride by chlorination of Ethylene and also cracking of the Ethylene dichloride. [16]

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Set No. 3

**IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
PETROLEUM AND PETROL CHEMICAL TECHNOLOGY
(Chemical Engineering)**

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. (a) what are the different ways of transporting petroleum crude and Products?
(b) What are the different forms of sulphur compounds present in Petroleum crude? [8+8]
2. Give an account of the production and consumption of petroleum products in India. [16]
3. What are the important top products of atmospheric distillation of crude oil? Discuss their end uses in detail. [8+8]
4. Explain the absorption technique for the production of LPG, with the help of a neat flowsheet. [16]
5. Explain the thermal cracking of hydro carbons for the production of ethylene with respect to yields. [16]
6. Describe the carbon monoxide manufacture by Cryogenic technique by partial condensation method. [16]
7. Explain the methanol synthesis process involving partial oxidation with oxygen. [16]
8. (a) Explain the principles involved for the manufacture of vinyl chloride by the addition of hydrochloric acid to Acetylene.
(b) With the help of neat flow sheet, explain the vinyl chloride manufacture by the addition of hydrochloric acid to Acetylene. [6+10]

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Set No. 4

**IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
PETROLEUM AND PETROL CHEMICAL TECHNOLOGY
(Chemical Engineering)**

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. What do you mean by isomeric compounds? Which isomeric compounds are present in petroleum crude? Compare the ultimate analyses of some Indian crude with American crude. [16]
2. Explain about
 - (a) Viscosity and different methods for determining viscosity.
 - (b) Octane number and knock characteristics
 - (c) Cetane number. [6+6+4]
3. What are the important top products of atmospheric distillation of crude oil? Discuss their end uses in detail. [8+8]
4. What is sulphuric acid treatment of petroleum products? What are its drawbacks? Describe sulphuric acid treatment of petroleum products with flow sheet. [16]
5. Define cracking reforming. Explain in detail the working principle of reforming process. [16]
6. With a neat flow sheet, explain the ammonia synthesis by partial oxidation of hydrocarbon process. [16]
7. Describe the process with neat flow sheet of formaldehyde manufacture by silver catalysts, BASF process with off gas recycle. [16]
8. Describe the Ethylene chlorohydrin process with the help of salient chemical reactions. [16]
