Code No: R05320807 **Set No. 1**

III B.Tech II Semester Regular Examinations, Apr/May 2008
PETROLEUM AND PETROL CHEMICAL TECHNOLOGY
(Chemical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Give an account of the production and consumption of petroleum products in India. [16]
2. What is refining? Why refining is done for crude petroleum? What are the different products obtained from an oil refinery? [16]
3. What are the important top products of atmospheric distillation of crude oil? Discuss their end uses in detail. [8+8]
4. What is catalytic desulfurization? Explain the process of catalytic desulfurization. [8+8]
5. Explain the thermal cracking of hydro carbons for the production of ethylene with respect to yields. [16]
6. Explain the various schemes based on hydrocarbon steam reforming process. [16]
7. Explain the methanol synthesis process involving partial oxidation with oxygen. [16]
8. (a) What is Chisso process? Mention the process temperature and pressure in a reactor.
   (b) Why this process is giving better yields for the hydration of Acetylene. [8+8]

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Code No: R05320807 **Set No. 2**

III B.Tech II Semester Regular Examinations, Apr/May 2008
PETROLEUM AND PETROL CHEMICAL TECHNOLOGY
(Chemical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What harms are caused by the presence of sulphur in petroleum products?
   (b) Compare the percentage of sulphur in some Indian crude with foreign crudes. [8+8]
2. Explain about the testing methods of petroleum products. [16]
3. What are the important top products of atmospheric distillation of crude oil? Discuss their end uses in detail. [8+8]
4. (a) Explain the process with the help of a neat flowsheet to improve the smoke point of kerosene using Dimethyl sulforide and Dimethyl formamide solvents.
   (b) What is the clay treatment method for lubes? Explain [10+6]
5. Write shot notes on :
   (a) Hydro Forming
   (b) Regenerative processes
   (c) Aromatics production
   (d) Napthene Dehydrogenation [16]
6. Describe any one base scheme of an aborsoption unit in petrochemical feed stocks. [16]
7. Describe the feedstock composition for the manufacture of formaldehyde. [16]
8. Explain the catalytic reaction and operating conditions of Ethanol synthesis by direct hydration of Ethylene. [16]

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Code No: R05320807 **Set No. 3**

III B.Tech II Semester Regular Examinations, Apr/May 2008
PETROLEUM AND PETROL CHEMICAL TECHNOLOGY
(Chemical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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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. 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) Explain the process with the help of a neat flowsheet to improve the smoke point of kerosene using Dimethyl sulforide and Dimethyl formamide solvents.
   (b) What is the clay treatment method for lubes? Explain [10+6]
5. Discuss briefly about T.C.C and Houdri Flow cracking processes. [16]
6. With a neat flow sheet, explain the ammonia synthesis by steam reforming of hydrocarbons . [16]
7. Give an account of ethanol production and consumption pattern worldwide. [16]
8. With a neat flow diagram,explain the Acetaldehyde production from ethylene Wacker/Hoechst single step process. [16]

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Code No: R05320807 **Set No. 4**

III B.Tech II Semester Regular Examinations, Apr/May 2008
PETROLEUM AND PETROL CHEMICAL TECHNOLOGY
(Chemical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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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. Explain in detail about the concept of integrated refineries. [16]
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. What is Alkylation processes? How this process is widely used in higher molecular weight olefins. Explain. [16]
6. Write a note on Hydrogen purification for the removal of moisture ,acid gases , carbon monoxide, methane and nitrogen. [16]
7. Summarise the economic data available on methanol production from various feedstocks. [16]
8. With neat flow sheet,explain the Ethanol manufacture from Ethylene by direct hydration shell process. [16]

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