

III B.Tech. II Semester Regular Examinations, April/May -2005

PETRO CHEMICAL ENGINEERING

(Chemical Engineering)

Time: 3 hours

Max Marks: 80

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

1. (a) Crude oil as a fuel is treated as non ecofriendly fuel .Why? Discuss?
(b) Enlist important fractions from crude oil?
2. Write short notes on any two:
 - (a) Specifications of gasoline
 - (b) Specifications of diesel oils
 - (c) Composition of kerosene.
3. (a) Discuss different alkylation processes.
(b) Discuss the importance of sulfuric acid alkylation and explain in detail with a neat flow diagram
4. (a) Explain the mechanism of polymerization.
(b) Describe briefly the thermal polymerization process with a neat flow diagram
5. (a) What is meant by dehydrogenation?
(b) How can you use pentane and hexane for petrochemicals production?
6. (a) Explain the production of cumene.
(b) Explain the reactions involved in cumene oxidation.
7. (a) How Butadiene can be converted to butylenes?
(b) Write down isoprene structure.
8. Explain with neat a sketch the manufacturing process of Aniline from Phenol?
What are its uses.

III B.Tech. II Semester Regular Examinations, April/May -2005

PETRO CHEMICAL ENGINEERING

(Chemical Engineering)

Time: 3 hours

Max Marks: 80

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

1. Give the history of petroleum and explain briefly about unit operations involved in refinery process?
2. (a) What is a stabilizer?
(b) How do you separate butane from Refinery gases.
(c) What are the uses of butane.
3. Write short notes on
(a) Cracking
(b) Types of cracking
(c) Knocking
4. Discuss in detail the isomerization process and give its advantages and disadvantages.
5. (a) Butane is available in plenty in the refinery operations. How do you separate it?
(b) Describe the process of dehydrogenation of butane.
6. How is isopropyl alcohol produced from propylene? Describe the process.
7. (a) Name some higher olefins directly used in detergent industry.
(b) Describe the process of chlorination of olefins.
8. Describe how terephthalic acid is produced from p-xylene.

III B.Tech. II Semester Regular Examinations, April/May -2005
PETRO CHEMICAL ENGINEERING
(Chemical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write notes on present scenario of petrochemical industry in India and world?
2. Define the following terms:
 - (a) Smoke point
 - (b) Flash point
 - (c) Power point
 - (d) Aniline point
3.
 - (a) Explain Alkylation with suitable reactions.
 - (b) Describe the process of Hydrofluoric acid alkylation with a neat flow diagram.
4. Discuss the isomerization of paraffinic hydrocarbons with suitable examples.
5.
 - (a) How can you carry the oxidation of pentane?
 - (b) What are the oxidation products of pentane?
6. Propylene is separated from the cracked gases obtained in a naphtha cracker. Explain how it is done.
7.
 - (a) Describe the uses of higher olefins.
 - (b) How do you produce higher olefins suitable for making detergents?
8. Explain with a neat chart the manufacturing process of Phenol by using Chlorobenzene as a reactant?

III B.Tech. II Semester Regular Examinations, April/May -2005

PETRO CHEMICAL ENGINEERING

(Chemical Engineering)

Time: 3 hours

Max Marks: 80

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

1. (a) Expand the terms ONGC, GAIL, IOC, OIL.
(b) Describe briefly about gas and oil fields in India.
2. What are Refinery gases explain? And what are their applications in petrochemical industry?
3. Describe with a neat flow sheet a naphtha cracker and its working.
4. (a) Compare the hot and cold sulfuric acid polymerization process.
(b) Explain the liquid phosphoric acid polymerization process with neat flow diagram.
5. How do you produce nitro compounds of higher paraffins?
6. (a) What is wax.
(b) How is wax produced in petroleum industry?
7. Describe a general process for the production of alcohols and ethers from olefins.
8. Explain with a neat chart the manufacturing process of Phenol by using Chloro-benzene as a reactant?
