

B.Tech. Eighth Semester (Chemical Engineering) (CGS)  
**11684 : Professional Elective-II : Petrochemical Technology : 8 CH 04**

P. Pages : 2  
Time : Three Hours



AW - 3502  
Max. Marks : 80

- Notes :
1. All question carry marks as indicated.
  2. Answer **three** question from Section A and **three** question from Section B.
  3. Due credit will be given to neatness and adequate dimensions.
  4. Diagrams and chemical equations should be given wherever necessary.
  5. Illustrate your answer necessary with the help of neat sketches.
  6. Discuss the reaction, mechanism wherever necessary.
  7. Use of pen Blue/Black ink/refill only for writing the answer book.

**SECTION – A**

1. a) Give detailed composition of petroleum. 5
- b) What are the impurities found in crude oil? How are these impurities removed? 8

**OR**

2. a) What are the different major petrochemical industries in India? 5
- b) Explain the role of biorefineries in the energy crisis. 8
3. With a neat flow diagram explain the manufacture of Ethylene. 13

**OR**

4. With a neat flow diagram explain the direct chlorination of methane to produce methyl chloride, methylene chloride and chloroform. 13
5. With a neat flow diagram explain the production of propylene oxide via chlorohydrin route. Explain the uses of propylene oxide. 14

**OR**

6. With a neat flow diagram explain the production of Acetone from Isopropanol. Explain the uses of Acetone. 14

**SECTION – B**

7. a) What are the applications of Low Density Poly Ethylene (LDPE)? 4
- b) With a neat flow diagram explain in detail production process for LDPE/ICI process. 9

**OR**

8. a) What is the difference between, Natural Rubber and synthetic Rubber? 4

- b) Explain in detail the manufacture of polychloroprene (NEOPRENE) rubber. 9
9. a) How are the detergents classified? Explain in brief. 6
- b) Explain the role of additives in brief in a detergent. 7

**OR**

10. a) What are the different raw materials to obtain petroleum proteins? What is the use of petroleum proteins? 6
- b) With a neat flow diagram explain in detail the petroleum fermentation process. 7
11. What technical changes do you see in the forthcoming petroleum and petro-chemical industry? Discuss in detail. 14

**OR**

12. What are the innovations possible with petroleum and petrochemical industry? Discuss in detail. 14

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