(03 Hours) **[Marks:80]**

N. B.: (1) Question No. **1** is **Compulsory.**

(2) Attempt any **THREE** questions out of remaining **FIVE** questions.

(3) Figures to the **right** indicate **full** marks.

(4) Make **suitable** assumptions wherever **necessary.**

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1. (a) Define and explain the importance Octane number & Cetane number [05]

(b) Differentiate between EFV and TBP distillation. [05]

(c) Distinguish between Unisol & Dualayer process [05]

(d) Give the composition of Asphalt? What is the action of heat on Asphalt? [05]

2. (a) Give different testing methods to test quality of kerosene. Explain any one method in short with suitable diagram. [10]

(b) Explain different tower arrangements used in crude distillation operation [10]

3. (a) Explain Dehydration and desalting of crude in detail. [10]

(b) Discuss in brief the process of furfural extraction for lubricating oil. What are the advantages of using furfural over phenol? [10]

4. (a) What the different type of Coking methods. Explain Flexi Coking in detail with a flow diagram. [10]

(b) Explain the HF alkylation process with neat flow diagram. Explain how it differs from the sulphuric acid alkylation process [10]

5. (a) Explain Houndry flow catalytic cracking process in detail. [10]

(b) Explain different types of Asphalt and explain air blowing of bitumen process. [10]

6. (a) Explain Hydro cracking process giving reactions, reaction conditions, feedstock and catalyst used. [10]

(b) Explain MEK Dewaxing process with neat flow diagram.

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