

**MASTER OF TECHNOLOGY (CHEMICAL ENGINEERING) (CBCS - 2015 COURSE)**  
**M. Tech. (Chemical Engineering) Sem-IV :SUMMER- 2022**  
**SUBJECT : SELF-STUDY PAPER-II:PETROCHEMICAL ENGINEERING**

Day : Wednesday  
Date : 15-06-2022

**S-14555-2022**

Time : 10:00 AM-01:00 PM  
Max. Marks : 60

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**N. B. :**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Answers to both the sections should be written in **SEPERATE** answer books.
  - 4) Draw neat and labeled diagram **WHEREVER** necessary.
  - 5) Assume suitable data, if necessary.
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**SECTION – I**

- Q. 1** Elaborate the alternative feedstock available and their need. **(10)**
- OR**
- Illustrate the production trends of petrochemicals in India. **(10)**
- Q. 2** Analyze Coal Bed Methane process. **(10)**
- OR**
- Explore on “hydrates for crude oil”. **(10)**
- Q. 3** Draw coal gasification flow diagram and explain in detail. **(10)**
- OR**
- Explain the following: **(10)**
- i) Catalyst used in Fischer Tropsch synthesis
  - ii) Chemistry for syngas production

**SECTION – II**

- Q. 4** Explain the working of octane boosters with example. **(10)**
- OR**
- Explain the types and importance of lube oil additives with example. **(10)**
- Q. 5** Analyze the fundamentals of natural gas engineering. **(10)**
- OR**
- Analyze chemical composition of natural gas. **(10)**
- Q. 6** Elaborate on applications of petrochemicals in food industry. **(10)**
- OR**
- Elaborate on applications of petrochemicals in pharmaceutical industry. **(10)**

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