

Enrolment Number: \_\_\_\_\_

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**

**B. TECH EXAMINATION (MID SEMESTER)**

**8<sup>th</sup> - SEMESTER (ACY-2023-24)**

**SUBJECT: Petrochemical Technology (203103481)**

**BRANCH: Chemical Engineering**

**[Date: 31/01/2024]**

**[Time: 10.30 A.M. to 12.00 P.M.]**

**[Total Marks: 40]**

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**Instructions:**

- Figures to the right indicate full marks
- Question 1(A) and 4 (A) is compulsory.
- Draw neat and clean drawings.

**Q.1 (A) Multiple Choice Questions:**

**05**

1. Hydrocracking is \_\_\_\_\_.  
a) Addition of hydrogen      b) Addition of Carbon  
c) Rejection of hydrogen      d) All
  
2. Vis-breaking is \_\_\_\_\_.  
a) Reduction of Temperature      b) Enhancement of Velocity  
c) Reduction of Viscosity      d) Both (a) and (b)
  
3. What does the word petrochemicals signify?  
a) Chemicals based on coal      b) Chemicals based on rocks  
c) Chemicals based on atmospheric conditions      d) All
  
4. Cracking is a/an ..... Reaction.  
a) Exothermic      b) Depends on process  
c) Both a & b      d) Endothermic
5. Out of the following which step produces Free radical fragments by Thermal Cracking. ....  
a) Initiation      b) Propagation  
c) Termination      d) None

**(B) Define: Paraffin, Pyrolysis, Quenching, Olefins and Catalyst**

**05**

**Q.2 Attempt Any Four (Short Questions):**

**12**

- (1) List out the name, raw material, product, and applications of Petroleum refinery (Min 8).
- (2) Explain the major Primary reactions in Catalytic cracking.
- (3) Define: Initiation, Propagation and Termination for Thermal cracking.
- (4) Explain in detail Origin and Formation of Petroleum.
- (5) Discuss the key operating parameters in visbreaking.

**Q.3**     **Attempt any two:** **08**  
(1) Explain Coil Technology with flow sheet with description.  
(2) Write short note on “Petrochemical sector- Past, Present and future”  
(3) Compare catalytic with other non-catalytic cracking processes.

**Q.4**     (A) Discuss the different feedstocks used in methanol production and their impact on **05**  
the overall process.

(B) What is FCC? Explain the regeneration process of catalyst in FCC. **05**

**OR**

(B) Write short note on Hydro Cracking. **05**