

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI

First Semester (2023-2024)

Comprehensive Exam (Regular) (Closed Book)

PART B

CHE F214 (Engineering Chemistry)

Date: 18/12/2023

Max Time: 2.5 hrs

Max Marks: 90

Instructions: All questions should be answered with clarity. Marks allotted per question are indicated in brackets.

Q1 Differentiate with details (**in tabular format only**) the working principle of Solution Polymerization and Emulsion Polymerization. Discuss also the demerits of each technique **in bullet points**. **[10+10= 20]**

Q2 Describe with details the working principle of Pearl Polymerization. Discuss the advantages of the technique **in bullet points**. **[10+10= 20]**

Q3 Describe with details, **in bullet points**, the significance of ultimate analysis of coal. **[10]**

Q4 Differentiate with details, **in bullet points**, the advantages of Thin Layer Chromatography and Gas Chromatography. **[15]**

Q5 Discuss with an example what is “cetane number”. Can the cetane number be increased? If so, how? **[5+2= 7]**

Q6 Differentiate with process details, **in bullet points**, the different types of thermal cracking. **[8]**

Q7 Describe with details, **in bullet points**, the advantages and limitations of pulverized coal. **[6+4= 10]**
