

**BACHELOR OF CHEMICAL ENGINEERING SUPPLEMENTARY
EXAMINATION, 2023**

(Fourth Year, Second Semester)

PETROLEUM REFINERY ENGINEERING & PETROCHEMICALS

Time: Three hours

Full Marks: 100

Answer **any EIGHT** questions from question numbers 1 to 9 and **any ONE** from question numbers 10 and 11

1. Discuss the important types of hydrocarbons as well as non-hydrocarbons generally found to be present in crude oil. (CO1) 10
2. Pour point, Storage Stability, Thermal Stability, Water and Sediment — are important tests for ATF — explain why. (CO1) 10
3. With the help of a neat sketch, discuss how the refinery flare system works. (CO1) 10
4. With the help of a neat sketch, discuss the electrical desalting process of crude. (CO1) 10
5. With the help of a neat sketch, discuss the different sections of a tube-still heater. (CO1) 10
6. With the help of a neat sketch, discuss the different types of reflux used in refinery distillation column. (CO1) 10
7. Discuss the four major catalytic reforming reactions. (CO2) 10
8. With the help of a neat sketch, discuss how the catalytic reformer unit (for octane boosting of naphtha) operates. (CO2) 10
9. With the help of a neat sketch, discuss the Fluid coking process. (CO2) 10
10. With the help of a neat sketch, discuss the Fluid catalytic cracking process. (CO2) 20
11. With the help of a neat sketch, discuss the hydrocracking process. (CO2) 20