

U.S.N.

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E.

Semester: V

Branch: Chemical Engineering

Duration: 3 hrs.

Course Code: 19CH5DELC1

Max Marks: 100

Course: Petroleum Refining

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.			UNIT - I	CO	PO	Marks
	1	a)	Explain about U.O.P characterization factor and Correlation Index.	CO1	PO1	08
		b)	Describe in detail True Boiling Point analysis (TBP) with the use of TBP apparatus.	CO1	PO1	08
		c)	Write a note on Equilibrium Flash Vaporization (EFV).	CO1	PO1	04
			OR			
	2	a)	What are the various ways of expressing average boiling point? Explain briefly.	CO1	PO1	10
		b)	List important thermal properties of petroleum fractions and explain any three.	CO1	PO1	10
			UNIT - II			
	3	a)	Explain in detail Reid vapor pressure and ASTM distillation.	CO2	PO2	10
		b)	Explain in details about various additives blended into gasoline.	CO2	PO2	10
			OR			
	4	a)	Define the terms i) Pour point ii) Fire point iii) Smoke point	CO2	PO2	06
		b)	Draw a neat labelled diagram and explain Conradson Carbon residue apparatus.	CO2	PO2	10
		c)	Discuss the tests used to describe the properties of bitumen.	CO2	PO2	04
			UNIT - III			
	5	a)	Draw a neat labelled diagram and explain desalting by electric method.	CO3	PO2	10

		b)	Describe the catalytic desulfurization process with a neat sketch.	CO3	PO2	10
			OR			
	6	a)	Explain Merox process with a neat flow sheet.	CO3	PO2	10
		b)	Explain Stertford process with a neat flow sheet.	CO3	PO2	10
			UNIT - IV			
	7	a)	Explain Carbonium ion mechanism of catalytic cracking.	CO4	PO3	10
		b)	With a neat diagram explain Fluid Catalytic Cracking.	CO4	PO3	10
			OR			
	8	a)	Describe Hydrocracking process with a neat flow sheet. Mention the operating conditions.	CO5	PO2	10
		b)	Discuss about the reaction variables and catalysts involved in catalytic reforming.	CO4	PO3	10
			UNIT - V			
	9	a)	Describe in detail about visbreaking operation with a neat flow diagram.	CO5	PO2	10
		b)	Explain Dubb's two coil cracking process.	CO4	PO3	10
			OR			
	10	a)	Explain delayed coking operation with a neat diagram.	CO4	PO3	10
		b)	Discuss the following i) properties of cracked materials ii) factors influencing the properties of cracked material.	CO4	PO3	10
