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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: 19CH5DEL C1

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.

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

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.

	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
