

U.S.N.								
--------	--	--	--	--	--	--	--	--

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

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E.

Semester: VI

Branch: Chemical Engineering

Duration: 3 hrs.

Course Code: 23CH6PELB2 / 22CH6PELB2

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)	Discuss the significance of TBP analysis.	<i>CO1</i>	<i>PO</i> 1	04
	b)	What is viscosity index? Explain with a graph.	<i>CO1</i>	<i>PO1</i>	06
	c)	Discuss in detail the evaluation of petroleum crude and characterization of thermal properties of petroleum fractions.	<i>CO1</i>	<i>PO</i> 1	10
OR					
2	a)	Discuss the significance of UOP-K factor.	<i>CO4</i>	<i>PO3</i>	06
	b)	Enlist the constituents of crude. Mention the specific examples for each class.	<i>CO1</i>	<i>PO1</i>	06
	c)	What are ASTM curves? What is their significance?	<i>CO2</i>	<i>PO2</i>	08
UNIT - II					
3	a)	Explain the Reid vapor pressure analysis including its construction, working & a diagram.	<i>CO2</i>	<i>PO2</i>	10
	b)	What are the tests recommended for diesel in general? List all and explain any two in detail.	<i>CO2</i>	<i>PO2</i>	10
OR					
4	a)	Define octane number? & explain its significance. List out the factor affecting it.	<i>CO1</i>	<i>PO1</i>	10
	b)	How can the percentage of aromatics in diesel oil be inferred?	<i>CO2</i>	<i>PO2</i>	04
	c)	What is the significance of flash point with respect to petroleum products. Explain the testing method briefly.	<i>CO2</i>	<i>PO2</i>	06

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 - III						
5	a)	Enlist the various techniques of crude desalting/dehydration. Explain the electrical and chemical methods.	CO4	PO3	10	
	b)	What are the difficulties encountered in pumping of crude oil? How are they overcome?	CO3	PO2	10	
OR						
6	a)	With a neat flowsheet, explain in detail liquid SO ₂ extraction of aromatics from kerosene. What is the reason for the removal of aromatics from kerosene?	CO5	PO2	10	
	b)	Explain the process of the Stretford operation, with a neat diagram.	CO5	PO2	10	
UNIT - IV						
7	a)	Discuss in detail the fluid catalytic cracking, with a figure.	CO5	PO2	10	
	b)	Compare and contrast the thermal and catalytic cracking processes.	CO5	PO2	10	
OR						
8	a)	What is the function of reforming and what is the requirement of feed for reforming?	CO3	PO2	02	
	b)	Discuss the various catalysts used for catalytic reforming.	CO3	PO2	08	
	c)	List the catalytic cracking processes. Explain any one in detail.	CO5	PO2	10	
UNIT - V						
9	a)	How is the delayed coking different from fluid coking?	CO4	PO3	08	
	b)	What is the effect of temperature and pressure on products of visbreaking process? Explain the process with a neat flowsheet.	CO4	PO3	12	
OR						
10	a)	What are the factors that influence the properties of cracked materials? Discuss any two of them in detail.	CO3	PO2	10	
	b)	Explain the Dubb's two coil cracking process with a neat process flow diagram.	CO5	PO2	10	
