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

Autonomous Institute Affiliated to VTU

## June 2025 Semester End Main Examinations

Programme: B.E.

Branch: Chemical Engineering

Course Code: 23CH6PELB2 / 22CH6PELB2

Course: Petroleum Refining

Semester: VI

Duration: 3 hrs.

Max Marks: 100

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

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

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

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