Motilal Nehru National Institute of Technology Allahabad
Prayagraj & 211004 (India)

Mid Semester Examination 2024-25

Programme Name: ~~B.Tech / M.Tech / MBA / M.Sc / MCA~~ **Semester:** 5th

Course Code: CHN15254 **Course Name:** *Petroleum Refining and Petrochemicals*

Branch: Chemical **Student Reg. No.:** 2022206 8

Duration: 1.5 Hours **Max. Marks:** 25/20

Instructions: *Marks and the number of questions to be attempted from the section are mentioned before each section. Assumed data if required.*

Attempt all the questions

Sl. No	Question	Marks
1.	(a) What is the crude composition of Indian crude? What is the type of crude based on residue after distillation?	3
	(b) Define specific gravity and write the relationship between specific gravity and API gravity.	2
	(c) Define cetane number and Diesel Index.	2
	(d) Define Carbon residue. What are the methods to determine carbon residue?	2
2.	(i) What is pretreatment of crude oil. Define dehydration and desalting with neat diagram.	5
	(II) Write down various straight run products with their applications	3
3.	(i) Define thermal conversion process.	5
	(ii) What is coking? Explain delayed coking in detail with its flow diagram?	3

---------- *Best of Luck* ----------

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End Semester Examination 2024-25

Programme Name: *B Tech / ~~M Tech - MBA - M Sc - MCA~~* **Semester:** 5th

Course Code: CHN15254 **Course Name:** *Petroleum Refining and Petrochemicals*

Branch: Chemical **Student Reg. No.:**

Duration: 2.5 *Hours* **Max. Marks:** 50

Instructions: *Marks and the number of questions to be attempted from the section are mentioned before each section. Assumed data if required*

Attempt all the questions

Sr. No	Question		Marks
1.	i.	Define Petroleum. Explain in detail the various theories of origin of petroleum with their advantages and limitations.	5
	ii.	Define Watson characterization factor and Reid vapor pressure.	3
2.	i.	What is ADU? Explain in detail with neat flow diagram.	4
	ii.	Write short note on solvent extraction and solvent dewaxing.	4
3.	i.	What are various thermal conversion processes. Explain visbreaking in detail with labelled diagram.	5
	ii.	Write down the comparison between delayed coking and fluid coking	3
4.	i.	Define catalytic cracking. Explain fluid catalytic cracking in detail with flow diagram.	5
	ii.	Explain hydrocracking in detail with flow diagram.	4
5.	i.	What is gasification. What are various types of gasifiers. Explain fix bed gasifier with their types in detail.	4
	ii.	Explain entrained flow gasifier with its applications and advantages & disadvantages.	4
6.	i.	Write down the process of manufacturing of methanol from synthesis gas with flow diagram and the reactions involved during the manufacturing.	4
	ii.	Draw the flow diagram for the production of Acrylonitrile with process description, reactions and major engineering problems.	5

Best of Luck