

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End-semester Examination, December 2019

Programme Name: M.Tech. PLE	Semester : I
Course Name : Fundamentals of Refining & Petrochemicals	Time: 03 hrs.
Course Code : CHLP7001	Max. Marks: 100
Nos. of page(s) : Two	

Instructions:

Note: Attempt all questions from Part – A four from Part-B and two from part-C with internal choice in each of them. Be brief, precise & focused in your answers.

SECTION A

S. No.	Give short answers for Q1 to Q5	Marks	CO
Q 1	Octane Number	4	CO2
Q 2	Cetane Number	4	CO2
Q 3	Calorific value	4	CO2
Q 4	Pour Point	4	CO2
Q5	Viscosity Index	4	CO2

SECTION B

Q 6	Give an overview of Indian oil & Gas sector including that of exploration, production and especially Refining with reference to the capacity buildup and overall growth, which the Refining industry has seen during the last two decades.	10	CO1
Q 7	Describe briefly the non-hydrocarbon types of compounds present in the crude and their detrimental effects on the processing of crude oil and its products.	10	CO2
Q 8	Based on physical properties give classification of different test methods used for assessment of Petroleum and describe briefly all test methods based on the Combustion characteristics and their significance	10	CO2
Q9	Describe various technology blocks in conventional lube refinery and the purpose of each one of them to produce quality LOBS. What are the emerging technology options to manufacture good quality LOBS in high yields from highly paraffinic crude such as Mumbai high OR	10	CO3 CO1

	Draw two separate process flow schemes for conventional & modern lube Refinery with various process blocks, their functions and different LOBS streams obtained with their names and TBP cut points.		
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SECTION-C

<p>Q10. Outline in brief the following basic operations in Refinery and their schematic representation :</p> <p>a) Gas –Liquid Contacting: Adsorption ,Striping b) Heat Exchange: Fired Heater, Reboiler. Pump around</p> <p>c) Heat Exchange: Condenser, Shell & tube Exchanger.</p>	20	CO1
<p>Q11. As a technical manager of a newly commissioned Indian Refinery, mention in brief why and what kind of technologies you would foresee and propose for the production of both fuel products and specialty products for Indian market and their trading globally using a heavy crude with ^oAPI of 10-26 and SG 0.89- 1. List the key products having more demand and business prospects and give reasons to justify your proposal.</p> <p style="text-align: center;">OR.</p> <p>What are Petrochemicals and how are they classified ? List out derivatives of ethylene, propylene & benzene. Draw a typical schematic diagram giving a complete structure of petrochemical complex</p>	20	CO1 & CO4 CO5 & CO3