

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2018

Programme Name: M.Tech. PDE	Semester : I
Course Name : Fundamentals of Refining, Petrochemicals & Polymers	Time: 03 hrs.
Course Code : CHPD7006	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	Hydrocarbon Vision-2025	4	CO1
Q 2	Opportunity crudes & their processing	4	CO2
Q 3	Give Empirical equations for Kuop factor, BMCI & VGC & ° API?	4	CO2
Q 4	ASTM Distillation.	4	CO2
Q5	Thermal Cracking Process	4	CO4

SECTION B

Q 6	Briefly explain with the help of flow diagram the process and the products obtained from atmospheric distillation (ADU) and vacuum distillation (VDU) unit of a crude oil refinery.	10	CO4
Q 7	What is the importance of FCC process in a refinery flow scheme? Explain with the help of block diagram and operating parameters the product slate obtained with the low severity FCC operation.	10	CO4
Q 8	What are hydro-treating (HDT) process in a petroleum refinery? Give process flow scheme of hydrodesulphurization (HDS) and its importance in presence in present day refinery.	10	CO4
Q9	Describe of chemistry and engineering of polymerization, their groups and types. Briefly give fundamentals of thermodynamic and reaction mechanism of polymerization Process.	10	CO5
OR			

	Prepare overall configuration of a typical Petrochemical complex. Describe Indian petrochemical market in term of value chain & optimization. List top five Indian Petrochemical companies & their product profile.		CO3
SECTION-C			
Q 10	Emission regulations for Indian & European vehicle norms especially for Diesel & Gasoline have been launched in India since Year 2000 (Bharat stage II). Auto fuel policy of GOI is in place since year 2005 and fuel specifications in future may be further tightened. Give your view point and perception to the future fuel specifications and their impact on Refining processes, technology and ultimately its financial implication's.	20	CO1
Q11	<p>What are the likely challenges to be faced by the Indian entrepreneurs' in Petrochemical business? Most of the global oil companies are going for a major reforms in hydrocarbon sector especially in processing of the crude oil in an Integrated complex. These companies have proved that integration of a Refinery with a petrochemical & polymer complex can be a high profitable venture. What are the likely challenges for the existing Indian Refineries for a move towards interface of refinery with the petrochemical? The 3-way linkage of Refinery with petrochemical & polymer complex in a new scenario. What would be the overall challenges especially the technical one to achieve high profitability.</p> <p style="text-align: center;">OR</p> <p>India is going for continuous addition of its refining capacity, whereas Europe and USA have not gone for capacity enhancement for the past several years. Give your reasons and perspective views as to how it may impact the overall growth prospects of Indian hydrocarbon downstream industry considering the fact that not only the demand for specific fuel products is on rise but additionally the demand of the feedstock's for the production petrochemicals and the polymers is also increasing every year.</p>	20	CO3 CO1