Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2019

Course: Downstream Petroleum: Refinery and Petrochemical **Semester: V**
Program: B.Tech CSE OGI **Time : 03 hrs.**
Course Code: CSOG 3001 **Max. Marks: 100**

Instructions:

SECTION A

S. No.		Marks	CO
Q 1	Transportation industry thrive on gasoline consumption, hence quality of gasoline decide the life of automobile. List characteristic of any ideal gasoline extracted from refinery.	**4**	**CO1**
Q 2	Distinguish different type of pipeline used in hydrocarbon industry. Illustrate the importance of size of pipeline with respect to the product they are carrying.	**4**	**CO1**
Q 3	List various feed of petrochemical industry and product obtain from each feed.	**4**	**CO3**
Q 4	Calculate the "Cetane" number of diesel.	**4**	**CO3**
Q 5	Explain the role of emulsifier in de-salter.	**4**	**CO3**

SECTION B

Q 6	Illustrate the formation of Hydrocarbon and state different stages of maturation of hydrocarbon	**10**	**CO1**
Q 7	Coke is the final product of refinery, explain the process used in the refinery to produce coke. Also breakdown different stages undertaken in Delayed Coking	**10**	**CO3**
Q 8	Outline different product formed during Aromatic solvent extraction unit. Explain the unit with proper diagram and explanation	**10**	**CO5**
Q 9	Exploration and production process is able to extract mixture of hydrocarbon from the crust of the earth surface. Crude oil is a mixture of hydrocarbons, minerals and salts. Refinery is responsible for producing customized chain of carbon. Elucidate De- Sulfuring Process undertaken in the refinery for treating sour crude oil. **Or** Elucidate Fluid bed Catalytic cracking Process undertaken in the refinery to extract 6-Carbon chain.	**10**	**CO4**

SECTION-C

Q 10	Describe the detailed processes undertaken in any refinery while processing hydrocarbon. Illustrate the process with flow scheme diagram stating the feed vs. output matrix and critical threshold of each process.	**20**	**CO2**
Q 11	Explain the following a) Pyrolysis of Hydrocarbon b) Catalytic reforming **Or** a) Continuous Catalytic Reforming b) Paraffininc hydrocarbon	**10+10**	**CO4,CO5**