Name: **Enrolment No:**	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2023

Course: Fundamental of Refining & Petrochemical Business **Semester: II**
Program: MBA (Oil and Gas marketing) **Time : 03 hrs.**
Course Code: OGOG7013 **Max. Marks: 100**

Instructions: Attempt all the questions

SECTION A
10Qx2M=20Marks

S. No.	**Define the following terms in two lines**	**Marks**	**CO**
Q 1	FRACTIONAL DISTILLATION	**2**	**CO 1**
Q 2	SULPURIZATION	**2**	**CO 1**
Q 3	RPO	**2**	**CO 1**
Q 4	QUENCHING OIL	**2**	**CO 1**
Q 5	PLASTICS	**2**	**CO 1**
Q 6	FEEDSTOCKS	**2**	**CO 1**
Q 7	LDO	**2**	**CO 1**
Q 8	MS	**2**	**CO 1**
Q 9	HYDRULIC OIL	**2**	**CO 1**
Q 10	GREASES	**2**	**CO 1**

SECTION B
4Qx5M= 20 Marks

	Answer the following questions in brief		
Q11	I) Carbon residue of an oil is determined By conradson method only By ramsbottom method only Either by conradson method or by ramsbottom method By Pensky Martens (closed) method II) Corrosion in crude distillation unit column overhead system is caused by The presence of naphthenic acid in crude oils	**5**	**CO 2**

	The presence of HCL formed by dissociation of chloride salts The sculpture compounds in crude oils All of the above III) Which of the following petroleum product has maximum kinematic viscosity at a given temperature? Gasoline Aviation turbine fuel LSD Furnace oil IV) Which of the following petroleum product has maximum C/H ratio (by weight)? Naphtha Kerosene Light diesel oil Fuel oil V) Which of the following petroleum product has minimum C/H ratio (by weight)? Naphtha Kerosene Light diesel oil Fuel oil		
Q12	Illustrate in detail how Crude oil classification, considering all aspect of it (crude oil & Gas) and crude assay are important aspect in refinery perspectives.	**5**	**CO 1**
Q13	What are the uses of aromatics (benzene & xylene) and how these are obtained from naphtha?	**5**	**CO 2**
Q14	I)Pour point of Bombay High crude oil is 18 zero degree C 30 zero degree C -15 zero degree C -50 zero degree C II) What does the word petrochemicals signify? Chemicals based on coal Chemicals based on rocks	**5**	**CO 2**

	Chemicals based on atmospheric conditions Chemicals based on fertility III)Which of the following raw material obtained from petroleum can be in preparation of acetic acid? Acetone Phosphoric acid Ethylene Tartaric acid IV) Which of the following is a non-petroleum source? CO3 CaC2 H2S Paraffin Olefin V) Which of the following process is used to convert the mixture of saturated hydrocarbons obtained from petroleum into a more reactive material? Hydrogenation Acidification Alkylation Chlorination		
SECTION-C 3Qx10M=30 Marks			
	Answer the following questions in detail		
Q15	Explain historic perspective of crude oil and refinery business from last 150 years. (Impact of wars). Also critically analyses the low crude price that has influenced during in these years 2008, 2014 and 2020. (Identify	**10**	**CO 4**

	the reasons for each given year). How global refineries have reacted / adjusted to this critical situation.		
Q16	Pipelines are a very important mode of oil and gas transportation. Please describe the pipeline / pipeline project/ activities, which are supported by IT. Differentiate cost impact on on-shore /off-shore pipeline.	**10**	**CO 3**
Q17	LPG has been very useful in 2020 specially post CORONA-19 pandemic. Illustrate its production in complex refinery (explain both the processes). While there are other items (petroleum products) with very low sale, for a refiner's perspective what are the steps that are required necessary to take to create the balance and run the refinery to a minimal optimal level, how would you deal with this situation?	**10**	**CO 2**
SECTION-D 2Qx15M= 30 Marks			
	Answer the following questions in detail **CASE- STUDY** Petrol, diesel prices to change every day from May 1, trial run in five cities Come May 1, petrol and diesel prices will change every day in sync with international rates, much as if it happens in most advanced markets. State-owned fuel retailers Indian Oil Corp (IOC), Bharat Petroleum Corp Ltd (BPCL) and Hindustan Petroleum Corp Ltd (HPCL), which own more than 95% of nearly the 58,000 petrol pumps in the country, will launch a pilot for daily price revision in five select cities from May 1 and gradually extend it across the country. Petroleum minister Dharmendra Pradhan indicated that the government has encouraged market-based pricing of fuels. "From political to economic diplomacy, energy sector of India has gained international recognition by efficient implementation of initiatives," he said. Pradhan however made it clear that the government will not force a decision for daily revision of fuel prices. "Every day change in pricing of petroleum products is a recommendation of experts. The government has nothing to do with it. "Ultimately, we will be driving towards market linked rates on a daily basis at all pumps across the country," IOC chairman B Ashok told PTI. A pilot for daily revision of petrol and diesel price will be first implemented in Puducherry, Vizag in Andhra Pradesh, Udaipur in Rajasthan, Jamshedpur in Jharkhand and Chandigarh, he said. State fuel retailers currently revise rates on the 1st and 16th of every month based on average international price of fuel in the preceding fortnight and currency exchange rate. Instead of using fortnightly average, pump rates will reflect daily movement in international oil prices and rupeeUS dollar fluctuations. It is technically possible to change rates daily but we have to first do a pilot. Once pilot is done and its implications studied, we will extend it to other parts of the country," he said. While Ashok said the pilot is to be "launched within one month" and did not give a specific date, industry sources said the pilot is planned to be launched on May 1. Daily price change will remove the big leaps in rates that need to be effected at the end of the fortnight		

	and consumer will be more aligned to market dynamics. While petrol price was freed from government control in June 2010, diesel rates were deregulated in October 2014. Technically, oil companies have freedom to revise rates but often they have been guided by political considerations. Rates differ by only a few paise between pumps of the three state fuel retailers. Unbranded petrol at IOC pumps in Delhi costs Rs 66.29 per liter, while the same at BPCL pumps in the city is priced at Rs 66.37 a liter. HPCL pumps sell for Rs 66.48 per liter. Unbranded diesel at IOC pumps in Delhi costs Rs 55.61, Rs 55.66 at BPCL outlets and Rs 55.69 a liter at HPCL pumps. With daily changes, which are unlikely to be more than a few paise per liter, the political pressures for not revising rates particularly when they are to be hiked will go, sources said. Rs 3.77 a liter last revised petrol price downward on April 1 and diesel rates were cut by Rs 2.91. This was the first revision in two-and-half-months, as oil firms did not change prices during assembly elections in five states, including Uttar Pradesh and Punjab. Ashok said prices of petrol and diesel in a particular market (city or town) would be the same.		
Q18	Analyze the strategy work with respect to Oil & Gas transportation and storage of petroleum-finished products.	**15**	**CO 3**
Q19	Evaluate and critically analyze the PSUs of Indian petroleum sector get the benefits and how they will coordinate with their pricing through their Refinery business.	**15**	**CO 4**