

Name:
Enrolment No:



UNIVERSITY OF PETROLEUM & ENERGY STUDIES
End Semester Examination – Dec- 2021

Program: MBA OIL & GAS
Subject: Fundamental of Oil & Gas Business
Course Code: OGOG 7010

Semester: I
Max. Marks: 100
Duration: 3 Hours

SECTION- A

Each Question will carry 2 Marks

S.No.	Question	
Q.1	MCQs: 1. Natural gas takes liquid shape at 161°C -161°C 100°C -100°C 2. The operator of Bombay High field is..... Oil and Natural Gas Corporation Limited Cairn India Oil India Limited Reliance Industries Limited	CO1
Q.2	Define the Units in Joule of following products: 1. 1 BtuJoule 2. 1 t.o.eJoule	CO1
Q.3	MCQs: 1. A large, sudden increase (or less often, decrease) in energy prices, especially the price of crude oil in the world market, is generally termed Oil shock Price shock Market shock None of these 2. What is ULCC in petroleum industry? Ultra-large crude carrier Ultra-low crude carrier Ultra-look care cream None of the above	CO1

Q.4	SI prefixes: 1. hecto..... 2. tera.....	CO1
Q.5	Define the Units in Joule of following products: 1. 1 b.o.e.....Joule 2. 1 KWh.....Joule	CO1
Q.6	SI prefixes: 1. peta..... 2. deca.....	CO1
Q.7	Define the Units in Watt of following products: 1. btu/hr.....W 2. cal/min.....Joule	CO1
Q.8	Define the application of following products: 1. HSD..... 2. LUBE STOCK.....	CO1
Q.9	MCQs: 1. _____ requires the earth's gravity to generate electricity. Wind plant Natural gas plant Tidal Plant Hydropower plant 2. Which of the following oil futures is not trade on the Multi Commodity Exchange of India? Brent Crude Furnace oil Bombay High crude Oil None of these	CO1
Q.10	Define the application of following products: 1. NAPTHA..... 2. ATF.....	CO1

SECTION- B

Each Question will carry 5 Marks

Q.1	It was said that two teaspoons of diesel oil are equivalent to the work done by a man in a day. Can that be correct prove it with analysis?	CO2
-----	---	-----

Q.2	Illustrate in detail how Crude oil classification , considering all aspect of it (crude oil & Gas) and crude assay are impartant aspect in a refinery prespectives.	CO3
Q.3	LPG has been very useful in 2020 specially post COVID-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.	CO2
Q.4	A consumer in a town center is charged Rs 0.75 per kWh for his electricity from the national grid. In a rural area, a consumer has a lamp connected to the local micro hydro unit at a cost of Rs 1 per day. Which consumer pays more for his electricity?	CO3

SECTION- C

Each Question will carry 10 Marks

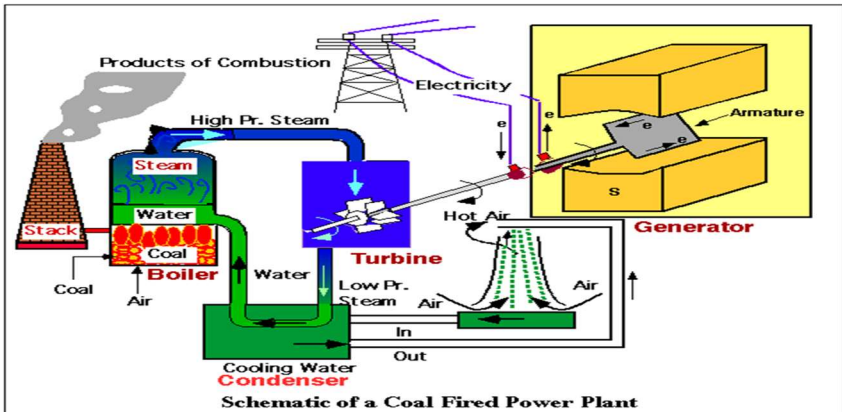
Attempt any 3 out of 4

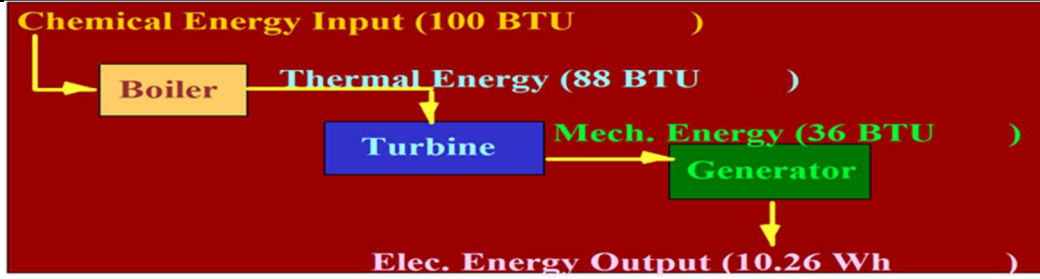
Q.1	Fuel	Cost/KG/Lt	Mileage/KG/Lt	Fuel Cost in Rs/KM	CO3
	MS	Rs 60/Lt	12 KM/Lt	Rs 5/KM	
	HSD	Rs 54/Lt	18 KM/Lt	Rs 3/KM	
	ALPG	Rs 50/KG	20KM/KG	Rs 2.5/Km	

	CNG	Rs 45/KG	22.5 KM/KG	Rs 2/KM	
	Assume that bank loan was taken for purchase of cars in the previous example. EMI for petrol and diesel cars for 5 year loan period for loan amount of Rs 8 and 9 lakh @10 % interest is Rs 16998/- and Rs 19122/- respectively. Calculate payback period.				
Q.2	(a) What is the purpose of Gas Processing? (b) What should be natural gas composition suitable for producing LNG? How you get temperature of liquefaction for LNG production?				CO2
Q.3	Differentiate between NELP and HELP policies with their limitations vs. benefits.				CO3
Q.4	Explain historic perspective of crude oil and refinery business from last 150 years. (Impact of wars). Also critically analyze the low crude price that has impacted during in these years 2008, 2014 and 2020. (Identify the reasons for each given year). How global refineries have reacted / adjusted to this critical situation.				CO4

SECTION-D

Each Question will carry 15 Marks

	<p>CASE STUDY: Efficiency of Coal Base Power Plant</p>  <p align="center">Schematic of a Coal Fired Power Plant</p>	
	<p>Q1.a) Analyzed the schematic diagram of a coal-based power plant & describe how it is different from Gas based power plant. b) For a coal-fired utility boiler, The temperature of high-pressure steam would be about 540°C and T cold; the cooling tower water temperature would be about 20°C. Calculate the Carnot efficiency of the power plant?</p>	CO3



Q.2. Find the overall Efficiency of below system?

CO4