


<b>Name:</b>	 <b>UPES</b> <small>UNIVERSITY OF TOMORROW</small>
<b>Enrolment No:</b>	

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**End Semester Examination, May 2022**

**Course:** MBA OG

**Semester: II**

**Program:** Understanding Natural Gas Business

**Time:** 03 hrs.

**Course Code:** OGOG 7011

**Max. Marks:100**

**Instructions:**

**SECTION A**  
**10Qx2M=20Marks**

S. No.	Question	Marks	CO
Q 1	Fill in the blanks The value of gas is determined by its energy content, which is measured in ..... About 4.2..... is approximately equivalent to the heat needed to increase the temperature of ..... gram of water at a standard pressure by 1.0 degree Celsius	2	CO1
Q 2	What is End Flash? Where it is used in the LNG liquefaction process?	2	CO1
Q 3	Biogas is a mixture of... a. Methane and Hydrogen b. Methane and Helium c. Methane and Carbon dioxide d. Methane and Nitrogen	2	CO1
Q 4	Name the three major global gas-trading hubs are.....	2	CO1
Q 5	What is <i>gas sweetening</i> process?	2	CO1
Q 6	Complete the unit conversions.  a. 1.0 SCM = ... ..MJ =..... kWh b. 1.0 MMscf = 23.8 TOE ≈ 174 barrels	2	CO1
Q 7	Define Condensate and its GOR range?	2	CO1
Q 8	One molecule of gas hydrate contains locking of ..... molecules of methane gas and... .....molecules of water.	2	CO1
Q 9	What is a Slug Catcher and its use?	2	CO1
Q 10	Name the countries sharing Caspian sea petroleum resources.....	2	CO1

**SECTION B**  
**4Qx5M= 20 Marks**

Q 1	Describe the Natural gas Composition and its phase behavior. Also, describe <i>Dry- and Wet-Gas Phase Behaviors</i> .	5	CO2
Q 2	Describe the India CBM gas-pricing scenario and challenges.	5	CO2
Q 3	What does the Santos-Oil Search merger mean for PNG LNG?	5	CO2
Q 4	Describe Syngas and Fischer-Tropsch synthesis (FTS) process..	5	CO2
<b>SECTION-C</b> <b>3Qx10M=30 Marks</b>			
Q 1	Describe the Nord Stream 1 and 2 pipelines connecting Europe to Russian supply. What are the impacts of the global gas supply and on the western major's investments?	10	CO3
Q 2	Describe the " <i>The full upstream oil and gas processes</i> "	10	CO3
Q 3	Answer both a & b.  a. Describe the two main competing price mechanisms- oil indexation and gas-on-gas competition. Also Pricing under Small-sized Discovered Fields & Pre-NELP Exploratory Blocks  b. Describe the Rangarajan committee recommendations of 2014 on applicable Indian gas pricing formula	10	CO3
<b>SECTION-D</b> <b>2Qx15M= 30 Marks</b>			
Q 1	Analyze <b>Project Structure, Cost, and Financing of LNG projects</b> . Compare the project cost components for two LNG projects: Algeria II and Pac Indonesia.	15	CO4
Q 2	Attempt any one of the two.  a. Gas to Liquid (GTL) and Gas to Wire (GTW) technologies and The reasons for their monetization. Compare the economic benefits of using GTL and GTW as a utilization project of the same asset. An assumption that GTL and GTW plants are located near the gas asset/wellbore and as such cost of gas as feedstock to the plants will be neglected  b. Describe benchmarking LNG projects and Qatari model. Describe three LNG projects in details- Hammerfest LNG, Qatar new LNG trains and Atlantic LNG.	15	CO4