

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2019

Course: Understanding Of Natural Gas Business

Programme: MBA (OIL & GAS)

Time: 03 hrs.

Semester: II

CC: OGOG 7003

Max. Marks: 100

Instructions: Please answer all sections. Strictly answer in the chronological order. It is better if explained using diagrams. Assume value of any parameter if not assigned in the question

SECTION A – (30 Marks)

		Marks	CO
Q 1	What is the starting and terminating locations of HVJ pipeline?	2	CO1
Q 2	What is the % share of Natural Gas in Indian Energy Basket? Why it is so?	2	CO2
Q 3	Which are the two top countries supplying LNG to India	2	CO1
Q 4	Differentiate between Cross Country and Cross Border Pipelines	2	CO3
Q 5	Fill in the Blanks: (i). 1 MTPA of LNG =MMSCMD of Natural Gas. (ii). 1 Kg of Natural Gas =SCM of Natural Gas	2	CO3
Q 6	Write any 4 unconventional resources of Natural Gas.	2	CO1
Q 7	In Hydrocarbon Phase diagram, what is represented by “critical Point”?	2	CO1
Q 8	Write down 4 inorganic components normally present in raw Natural Gas	2	CO1
Q 9	In which year LNG was introduced in Indian market?	2	CO4
Q 10	Differentiate between Monomer and Polymer?	2	CO2
Q 11	Write down 4 methods of Natural Gas transportation?	2	CO2
Q 12	What do you understand by APM price of Gas in India?	2	CO3
Q 13	Write in brief 4 functions of PNGRB	2	CO1
Q 14	What is the difference between GSPA and GTA?	2	CO4
Q 15	Which are the 4-business segment of CGD?	2	CO4

SECTION B – (40 Marks)

Q 16	How Horizontal Directional Drilling differs from conventional drilling?	8	CO4
Q 17	Write a short note on Natural Gas application based on its heating value and its chemical property.	8	CO4
Q 18	(i). From first principle derive the density of Natural Gas in Kg/SCM (4 Marks) (ii). Which are the 4 pressure level used in CGD Project. (4 Marks)	8	CO3
Q 19	If LNG is imported at a rate of \$ 8/mmbtu ex-ship basis, what would be the price of natural Gas on per SCM basis if GCV of Natural Gas is 9000 Kcal/SCM	8	CO4
Q 20	Describe in brief with neat sketch the process of gas sweetening.	8	CO2

SECTION C - (30 Marks)

Q 21	Write down 4 Process used for LNG production and describe in detail with neat sketch one of these processes (4+6 Marks)	10	CO2
Q 22	Describe 10 important clauses of LNG SPA.	10	CO4
Q 23	An entity sells Gas to Domestic consumers at Rs.25/ Standard Cubic Meter and to vehicles as CNG at Rs 50/ Kg. Which segment, you consider as more profitable and by how much / (5+5 Marks)	10	CO4

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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2018

Course: Understanding Of Natural Gas Business

Semester: II

Programme: MBA (OIL & GAS)

Time: 03 hrs.

Max. Marks: 100

Instructions: Please answer all sections. Strictly answer in the chronological order. It is better if explained using diagrams. Assume value of any parameter if not assigned in the question

SECTION A – (30 Marks)

		Marks	CO
Q 1	How much are proven reserves of Natural Gas in India?	2	CO1
Q 2	Why Natural Gas is preferred fuel?	2	CO2
Q 3	Which are the 4 LNG regasification terminals in India now in operation?	2	CO1
Q 4	What do you understand by “Regional Pipeline Network” How this differs from Cross Country pipeline network?	2	CO3
Q 5	Fill in the Blanks; (i). 1 Barrel of Crude Oil =Liter (ii). 1 KWH =K joules of energy	2	CO3
Q 6	What is Bio Methane? And how it is useful for transport application?	2	CO1
Q 7	How can you make water boil at 80-degree Celsius?	2	CO1
Q 8	What is allowable limit of following impurities in natural gas for transportation through pipeline? (i).H ₂ S (ii). CO ₂	2	CO1
Q 9	When was the first LNG regas-terminal commissioned in India?	2	CO4
Q 10	Differentiate between Monomer and Polymer?	2	CO2
Q 11	What is the pressure of Natural Gas when transported through Cascade and why? (1+1 Marks)	2	CO2
Q 12	Which countries are taken as reference for fixing domestic gas price in India?	2	CO3
Q 13	What is T4S Regulations of PNGRB?	2	CO1
Q 14	Which business segment of CGD is most profiting to the entity and why?	2	CO4
Q 15	What do you understand by “Condition Precedent” in LNG import Contract?	2	CO4

SECTION B – (40 Marks)

Q 16	Differentiate between Geophysical and Geological survey for E&P activities?	8	CO4
Q 17	Compute the Natural Gas requirement to boil one Kg of water from NTP conditions.	8	CO4
Q 18	(i). From first principle derive the density of LNG in Tn / Cubic Meter of LNG (4 Marks) (ii). Which are the 4 pressure level used in CGD Project. (4 Marks)	8	CO3
Q 19	If Gas Price from a producer is \$6.5/mmbtu and transportation tariff is Rs 50/mmbtu, what is the price to the consumer if common GST is 12% (Assume 1\$=Rs70)	8	CO4
Q 20	Describe in brief with neat sketch the process of de-sulphurization	8	CO2

SECTION C - (30 Marks)

Q 21	How is LNG re-gasified? How the cold energy of LNG can be made use of during re-gasification process? (5+5 Marks)	10	CO2
Q 22	Describe 10 important clauses of Gas Sales and Purchase Agreement.	10	CO4
Q 23	A base load power plant of 100 MW capacity operates at 1600 Kcal/ KWH heat rate. Compute the daily natural gas requirement if GCV of gas is 9000 Kcal/SCM	10	CO4