

University of Petroleum Energy Studies
College of Management & Economics Studies
End-semester Examination, May 2017

Roll No. _____

Subject : Understanding Natural Gas Business
Course : MBA (OG)
Course Code :

Semester: II
Time: 3 hrs
MM: 100

This paper has three pages.

Section A

Section A, carries 30 marks. This section has multiple choice/ objective questions/short answer questions. All the questions of Section A are compulsory and all question carry equal marks (3marks each)

Q. 1. Which of the following statement is correct?

(Chose the most appropriate answer out of the following four choices by marking

✓ Sign in the correct statement)

- A. Natural Gas Pipeline Lengh in India presently is 10,500 Km
- B. Natural Gas Pipeline Lengh in India presently is 16,600 Km.
- C. Natural Gas Pipeline Lengh in India presently is 19,200 Km.
- D. Natural Gas Pipeline Lengh in India presently is 22,500 Km.

Q.2. Fill in the blanks the liquefaction temperature of:

- (i). Ethane =----- °C
- (ii). Methane as LNG) =----- °C
- (iii). Nitrogen =----- °C

Q. 3 . Complete the folling statements:

- (i). Steel Grid in CGD is a loop design because.....
- (ii). The dwelling unit in a GA is calculated by dividing the population by 5 because -----
- (iii). Steel Grid design pressure of 49 Bar is better than 19 Bar design because.....

Q.4. Fill up the blanks in the following equations (use conversion formulae applied in by you for Dun Valley City Gas Project)

(i) One Liter of Diesel =-----SCM of Natural Gas

(ii) One Liter of Petrol = -----SCM of Natural Gas

(iii)One Kg of LPG = SCM of Natural Gas

Q.5. Why do we go for Horizontal Directional Drilling for production of gas.

Q.6. Expand the following abbreviations (as applicable to hydrocarbon industry)

(i) MEA

(ii) DEA

(iii)TCF

Q.7 What are various pressure levels in a CGD design for Steel network, PE network, GI Pipes and the Kitchen connection downstream of the Meter?

Q.8. One unit of electricity is produced using 0.2 SCM of Natural Gas having CV of 8500 Kcal/SCM. What is the efficiency of conversion of heat energy to electricity?

Q.9 . What do you understand by Dew Point Depression? Name a process used for this.

Q.10. Identify Paraffin's, Olefin's and Aromatics members of Hydrocarbon family.

Section B

Section B carries 30 marks. This section contains 6 questions of 5 marks each. All the questions of Section-B are compulsory. Illustrate your answer by examples wherever possible.

Q.1. Differentiate Geological Survey and Geophysical Survey as conducted for conventional E&P?

Q.2. What are the Business segments of City Gas Distribution Projects? Which of the segments is most profitable?

Q.3. With the help of neat sketch, differentiate between Casing head and Tubing head used in drilling process.

Q.4. Describe any 3 cross country Natural Gas Pipelines in India with their Operators.

Q.5. What do you understand by SSS model in CGD gas application ?

Q.6. Elaborate the provisions of following Regulations of PNGRB

(i). Technical Standards Specification including Safety Standards (TSS)

- (ii). Authorization for City Gas Projects
- (iii). Access Code for Pipeline Transportation

Section C

Section –C carries 40 marks. All the questions of Section- C are compulsory and carry equal marks (each question carries 10 marks each) illustrate your answer by examples wherever possible. Restrict your answer within two to three pages (900 words).

Q.1. Describe in detail the gas Pricing approach followed in India since 1980 and exhibit at least 4 different prices of natural gas that are existing now in India.

Q.2. While discussing LNG sourcing the buyer proposes a formula given at (i) below, but the seller wants to employ another formula given at (ii) below:

(i) $P = 0.125B$

(ii) $P = 1 + xB$

Where; P is the LNG price in $$/mmbtu$; B= is the Brent Crude Price in $$/bbl$; x is the slope of formula (ii).

During the discussions on price negotiation buyer agrees to seller formula provided both the formulae have same price at $B = \$60/bbl$. For such a condition, find the slope for the seller proposed formula. Also comment on the benefits to seller and buyer from this formula ?

Q.3. Describe in detail the applications of natural gas in India and highlight the preferred applications

Q.4. What do understand by Gas Processing? Describe in detail with the help of neat sketch the process of Desulphurization?