



## University of Petroleum & Energy Studies, Dehradun

**Programme Name: B.Tech (APE-Gas) Semester : VIII, End Sem.(IInd Chance)**  
**Subject: Understanding Natural Gas Business Subject code: PTEG 466**  
**Duration: 3 Hrs. M. Marks: 100**

### Section A - All questions are compulsory , Tick True or False ( 2x10=20)

- Q1. i) Natural gas is used in fuel applications only.....True / False CO1  
ii) When the economy is expanding, output from industrial sectors is generally decreasing at a similar rate .....True / False CO1
- Q2. i) The LNG inside the tanks and loading facility remains at 162 °C and then pumped into LNG ships..... True / False CO3  
ii) The on-board re-liquefaction system allows a reduction of LNG losses; results in economic and environmental benefits..... True / False CO3  
iii) PNG and power sector belongs to non-premium segment but CNG comes under premium segment..... True / False CO3  
iv) Gas Pipeline infrastructure is an economical and safe mode of transporting the natural gas by connecting gas sources to gas consuming markets.....True / False CO3  
v) Gas price need to be set to recover the gas cost per unit of exploration, production, transportation and distribution..... True / False CO3
- Q3. i) Strategic storage is an important element of a risk management system aimed at decreasing security of energy supply in a country .....True / False CO4  
ii) The value of trading that occurs on the financial market is 10 to 12 times greater than the value of physical natural gas trading..... True / False CO4  
iii) New technologies of E &P are improving the economics of producing natural gas..... True / False CO4

### Section B - All questions are compulsory Fill in the blanks. (2x10=20)

- Q4. i) Natural gas is relatively a ..... fuel compared to oil and has longer ..... CO2  
ii) In India..... of total gas consumption is in fertilizer and ..... Sector. CO2
- Q5. i) Natural gas changed to LNG at .....°C temperature and on liquefaction its volume is reduced to ..... of its previous volume. CO3

- ii) PNGR Board ..... the transportation.....for common carriers or CGD networks. CO3
  - iii) Gas prices in India are determined by taking a .....annual average prices prevailing in..... etc. CO3
  - iv) Local distribution companies purchase natural gas and sell in retail to..... and ..... end users. CO3
- Q6. i) Transparency in any market enables..... to .....the customers. CO5
- ii) Gas storage plays a vital role in maintaining the .....of supply needed to meet ..... of customers. CO5
  - iii) Successful gas contracts are freely negotiated / accepted by seller and buyer with minimum.....imposed on them by ..... parties. CO5
  - iv) Natural gas is ..... but can cause ..... by suffocation if the gas displaces the air in a confined space. CO5

**Section C - Attempt any ten questions (6x10=60)**

- Q7. Name some new technologies being used in E &P of natural gas and oil and what are the advantages? CO1
- Q8. What is the transaction cost and what it covers? CO3
- Q9. Under Physical contracts define spot market. Define objectives of hedging and speculation under financial gas market. CO3
- Q10. How gas prices are set under Tariff price structure? CO3
- Q11. What is natural gas pipeline policy and what are its objectives? CO3
- Q12. What is physical and financial trading? Define role of hedging and speculations. CO4
- Q13. Write a short note on strategic storage of natural gas, types and their applications? CO4
- Q14. What are Depletion and Supply contracts? CO4
- Q15. What is LNG? Why & how LNG trade is growing across the world? CO5
- Q16. LNG chain includes what different sections? Give some details of liquefaction and regasification sections. CO5
- Q17. What is third party access (TPA)? What obligation it imposes on transmission system operator? CO5
- Q18. What is typical raw natural gas composition? Which inert gases are present in tracers and why raw gas is purified? CO5

Q19. Describe these terms briefly - Payout period, Discount cash flow rate & number of times investment return. CO5

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