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Courses » Upstream LNG Technology

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Unit 2 - Week 1

Course outline

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Week 1

- Lecture 1 : Introduction
- Lecture 2 : Concentration
- Lecture 3 : Sources and Process Overview of Natural Gas
- Lecture 4 : Pure Component Phase Behavior
- Lecture 5 : Mixture Phase Behavior
- Lecture 6 : Phase Behaviour of Natural Gas
- Lecture Materials
- Quiz : Week 1 : Assignment 1
- Feedback for Week 1

Week 2

Week 1 : Assignment 1

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2018-08-15, 23:59 IST.**

1) Retrograde condensation is the formation of liquid hydrocarbons in a gas reservoir **1 point**

- a) As the pressure in the reservoir decreases below dew point pressure during production
- b) As the pressure in the reservoir increases above dew point pressure during production
- c) As the pressure in the reservoir decreases below bubble point pressure during production
- d) As the pressure in the reservoir increases above bubble point pressure during production

No, the answer is incorrect.

Score: 0

Accepted Answers:

a) As the pressure in the reservoir decreases below dew point pressure during production

2) Out of the following methods, which is not used for prevention of retrograde condensation **1 point**

- a) Maintain the flowing well bottomhole pressure above the dew point pressure
- b) Inject methane gas into the production well
- c) Inject nitrogen into the production well
- d) Inject both nitrogen and methane into the production well

No, the answer is incorrect.

Score: 0

Accepted Answers:

c) Inject nitrogen into the production well

3) Cricondentherm is **1 point**

- a) The minimum temperature at which condensation takes place at dew point curve
- b) The maximum temperature at which condensation takes place at bubble point curve

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4) Out of these natural gas components which increases the cricondenbar of natural gas **1 point**

a. Hg

b. CO₂

c. N₂

d. H₂S

No, the answer is incorrect.
Score: 0
Accepted Answers:
c. N₂

5) Dew point temperature is the **1 point**

a) Temperature at which a liquid begins to vaporize as it is heated at constant pressure.

b) Temperature at which a vapor begins to condense as it is cooled at constant pressure.

c) Temperature at which a vapor begins to condense as it is heated at constant pressure.

d) Temperature at which a liquid begins to vaporize as it is cooled at constant pressure.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b) Temperature at which a vapor begins to condense as it is cooled at constant pressure.

6) N₂ should be removed from the natural gas because **1 point**

a) It causes corrosion to the pipelines

b) It gives a foul smell to the natural gas

c) It decreases the calorific value of the gas

d) Being a pollutant, it affects the environment adversely

No, the answer is incorrect.
Score: 0
Accepted Answers:
c) It decreases the calorific value of the gas

7) Sourness in natural gas is caused due to the presence of **1 point**

a) H₂S and CO₂

b) HCl and NH₃

c) CH₃COOH and NO₂

d) NH₄ and NaCl

No, the answer is incorrect.
Score: 0
Accepted Answers:
a) H₂S and CO₂

8) A binary gas mixture contains 27% by mole of components A (Molecular Weight = 30 g/mol) and the rest component B (Molecular Weight = 40 g/mol). The average molecular weight of the mixture is approximately **1 point**

- a) 22 g/mol
- b) 78 g/mol
- c) 42 g/mol
- d) 37 g/mol

No, the answer is incorrect.

Score: 0

Accepted Answers:

d) 37 g/mol

9) Mercaptans are a class of colorless flammable components added to natural gas/petroleum gas for imparting a pungent smell to the gas. Identify the chemical formula of methyl-mercaptan **1 point**

- a) CH_3NH
- b) $\text{C}_2\text{H}_5\text{SH}$
- c) CH_3SH
- d) $\text{C}_2\text{H}_5\text{NH}$

No, the answer is incorrect.

Score: 0

Accepted Answers:

c) CH_3SH

10) Assuming air to be a binary mixture containing 78% by mole nitrogen (Molecular Weight = 28 g/mol) and the rest oxygen (Molecular Weight = 32 g/mol), mass fraction of oxygen in air is: **1 point**

- a) 0.24
- b) 0.76
- c) 0.35
- d) 0.18

No, the answer is incorrect.

Score: 0

Accepted Answers:

a) 0.24

11) 10 kg of a gas contains 20% by mole of component A (Molecular Weight = 12 g/mol), 30% by mass of component B (Molecular Weight = 14 g/mol) and the rest component C (Molecular Weight = 16 g/mol). The mass fraction of component C is **1 point**

- a) 50%
- b) 76%
- c) 53%
- d) 28%

No, the answer is incorrect.

Score: 0

Accepted Answers:

c) 53%

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