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reviewer3@nptel.iitm.ac.in ▼

Courses » Upstream LNG Technology

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Unit 12 - Week 11

Course outline

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- Lecture 74 : Cryogenic refrigeration and liquefaction in natural gas systems - IV

- Lecture 75 : Cryogenic refrigeration and liquefaction in natural gas

Assignment 11

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2018-10-17, 23:59 IST.**

1) In Pre-cooled Linde-Hampson liquefaction system, with an increase in the liquid yield, work **1 point** requirement

- a) Decreases
- b) Increases
- c) Remains constant
- d) May increases or Decreases

No, the answer is incorrect.

Score: 0

Accepted Answers:

b) Increases

2) Out of following, which is the most common refrigeration system for hydrocarbon recovery **1 point** from natural gas

- a) Ammonia refrigeration system
- b) Propane refrigeration system
- c) Xylene refrigeration system
- d) Carbon dioxide refrigeration system

No, the answer is incorrect.

Score: 0

Accepted Answers:

b) Propane refrigeration system

3) **1 point**

Use the following information to answer questions 3, 4 and 5

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A project of



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and liquefaction - IV

Lecture 78 : Tutorial on refrigeration and liquefaction - V

Lecture 79 : Hydrocarbon recovery in natural gas system - I

Lecture Materials

Quiz : Assignment 11

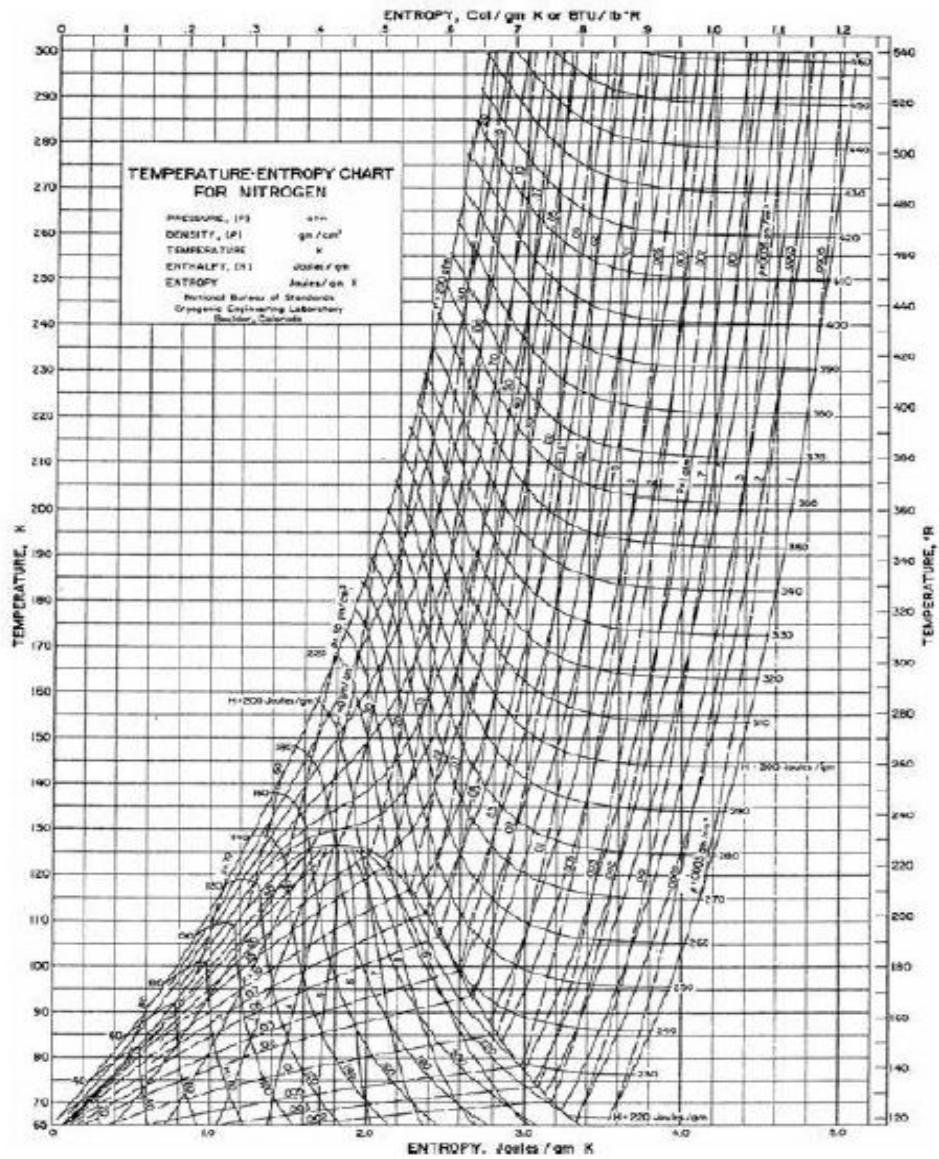
Feedback for Week 11

Week 12

Download Videos

Assignment Solution

Interactive Session with Students



The refrigeration effect produced is about

- a. 13.28 J/g
- b. 65.32 J/g
- c. 0.15 J/g
- d. 0.0785 kJ/g

No, the answer is incorrect.

Score: 0

Accepted Answers:

a. 13.28 J/g

4) The COP of the refrigerator is about

1 point

- a. 0.254
- b. 0.024
- c. 0.785
- d. 1.54

No, the answer is incorrect.

Score: 0

Accepted Answers:

b. 0.024

5) The figure of merit of the refrigerator is about

1 point

- a) 0.254
- b) 0.066
- c) 0.785
- d) 2.54

No, the answer is incorrect.

Score: 0

Accepted Answers:

b) 0.066

6) Hydrocarbon recovery from natural gas is done to

1 point

- a. Lower the heating value
- b. Produce liquid hydrocarbon products
- c. Control the dew point
- d. Increase the heating value

No, the answer is incorrect.

Score: 0

Accepted Answers:

a. Lower the heating value

b. Produce liquid hydrocarbon products

c. Control the dew point

7) Stabilization is done to

1 point

- a. Recover lighter hydrocarbons for
- b. Make the storage of liquid products easier
- c. Stabilize the molecular mass of the natural gas
- d. Increase the heating value of the product

No, the answer is incorrect.

Score: 0

Accepted Answers:

a. Recover lighter hydrocarbons for

b. Make the storage of liquid products easier

8)

1 point

Use the following information to answer questions 8, 9 and 10

A Linde dual-pressure liquefaction system, using nitrogen as the working fluid, operates between 0.101 MPa and 20.2 MPa. Inlet and exit temperatures for both compressors are maintained at 293 K. The intermediate pressure is 5.05 MPa and the intermediate-pressure-stream-flow-rate ratio (\dot{m}_i/\dot{m}) of this stream is 0.75.

Property	T (K)	P (MPa)	Value
h_1	293	0.101	303.90 kJ/kg
h_2		5.05	292.99 kJ/kg
h_3		20.2	269.74 kJ/kg
s_1		0.101	6.8181 kJ/kg K
s_2		5.05	5.6224 kJ/kg K
s_3		20.2	5.1283 kJ/kg K

$h_f = -122.07$ kJ/kg at 0.101 MPa.

$s_f = 2.8335$ kJ/kg K at 0.101 MPa.

The liquid yield is about

- a. 0.060
- b. 0.277
- c. 0.850
- d. 0.654

No, the answer is incorrect.

Score: 0

Accepted Answers:

a. 0.060

9) The work per unit mass compressed is about

1 point

- a. 548.45 kJ/kg
- b. 754.68 kJ/kg
- c. 206.37 kJ/kg
- d. 322.77 kJ/kg

No, the answer is incorrect.

Score: 0

Accepted Answers:

c. 206.37 kJ/kg

10) The figure of merit of the system is about,

1 point

- a. 0.65
- b. 0.54
- c. 1.95
- d. 0.22

No, the answer is incorrect.

Score: 0

Accepted Answers:

d. 0.22

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