Week 12 Assignment 12

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2018-10-24, 23:59 IST.

1) Which among the following is NOT TRUE regarding low temperature separators used for hydrocarbon recovery

- [ ] a) Can be used both on shore and off shore
- [ ] b) Involves partial vaporization of the liquid product
- [ ] c) External cooling may be used for the separation
- [ ] d) Presence of water may lead to hydrate formation

No, the answer is incorrect.
Score: 0

Accepted Answers:
- b) Involves partial vaporization of the liquid product

2) Which among the following is/are NOT TRUE regarding the twister separator used for hydrocarbon recovery

- [ ] a) Twister separator is low weighing and small
- [ ] b) Is driven by absolute pressure
- [ ] c) Pressure drop is high
- [ ] d) Isentropic efficiency is high

No, the answer is incorrect.
Score: 0

Accepted Answers:
- b) Is driven by absolute pressure
  - c) Pressure drop is high

3) Which among the following is/are TRUE regarding membrane hydrocarbon recovery

- [ ] a) Absence of moving parts
- [ ] b) High turndown ratio
- [ ] c) May be used offshore
- [ ] d) Light weight

No, the answer is incorrect.
Score: 0
4) A JT-valve is/are always used parallel to the turboexpander to

- Help in plant start up
- Handle excess gas flow rates
- To freeze CO2 in the process lines
- Act as standby, if the turboexpander breakdown

Score: 0
Accepted Answers:
- Help in plant start up
- Handle excess gas flow rates
- Act as standby, if the turboexpander breakdown

No, the answer is incorrect.

Score: 0
Accepted Answers:
- Help in plant start up
- Handle excess gas flow rates
- Act as standby, if the turboexpander breakdown

5) The flow rate of propane in a propane refrigeration system with an evaporator duty of 12.7 MJ/hr operating between temperatures 30°F (evaporator) and 105°F (condenser) is about

- 734 lb/hr
- 12.5 lb/hr
- 106 lb/hr
- 547 lb/hr

The flow rate of propane in a propane refrigeration system with an evaporator duty of 12.7 MJ/hr operating between temperatures 30°F (evaporator) and 105°F (condenser) is about 734 lb/hr.
6) Use the following information to solve Questions 6 and 7.

A gas flowing through an NPS 16 pipe, Schedule 10 has a flow rate of 70 MMSCFD, taking standard temperature as 90°F temperature, and standard pressure as 14.7 psia, and the compressibility factor as 1.0.

The compressibility factor becomes 0.89 when the gas flows at 90°F temperature, and 1500 psig pressure.

The flow rate of the gas, in MMSCFD, at 90°F and 1500 psig is

- a. 0.987
- b. 1.78
- c. 0.652
- d. 0.235

No, the answer is incorrect.
Score: 0
Accepted Answers:
c. 0.652

7) The flow velocity of the gas, in ft/s, at 90°F and 1500 psig is

- a. 5.80
- b. 12.5
- c. 1.25
- d. 4.74

No, the answer is incorrect.
Score: 0
Accepted Answers:
a. 5.80

8) A gas with gas gravity of 0.6 and compressibility factor 0.85, enters a NPS 20 pipe of Schedule 30 at 90°F and 1500 psig. The pressure at a distance of 10 miles from the inlet is found to be 600 psig. Assume the friction factor to be 0.02. Consider the standard temperature and pressure to be 70°F and 14.7 psi respectively.

The flow rate of the gas, in MMSCFD, is

- a. 154
- b. 785
9) A gas having gas gravity of 0.7 and viscosity of $8.0 \times 10^{-4}$ lb/(ft\cdot s) is flowing through a 20 NPS schedule 30 pipeline at a flow rate of 150 MMSCFD. Take the standard temperature and pressure to be 70°F and 14.7 psia respectively.

If the absolute pipe roughness is $7.0 \times 10^{-4}$ in, and bend index is 60°, the transmission factor using the AGA method is

- a. 54
- b. 0.5
- c. 20
- d. 47

No, the answer is incorrect.
Score: 0
Accepted Answers:
c. 20

10) The General Flow-equation correlates the pressure drop of a flowing fluid with

- a. Fluid temperature
- b. Fluid velocity
- c. Pipe size
- d. Fluid properties

No, the answer is incorrect.
Score: 0
Accepted Answers:
a. Fluid temperature
b. Fluid velocity
c. Pipe size
d. Fluid properties