

Unit 2 - Week 0 : Prerequisite

Course outline

How does an NPTEL online course work?

Week 0 : Prerequisite

Quiz : Assignment 0

Solution: Assignment 0

Week 1: Introduction

Week 2: Process Variables and Rate

Week 3: Fundamentals of Material Balance

Week 4: Basic Principles of Compressible System

Week 5 : Basic principles of multiphase system

Week 6 : Energy and Its Forms

Week 7 : Energy Balances on Nonreactive Processes

Week 8 : Energy Balances on Reactive Systems

Week 9 : Balances on Transient Process

Week 10 : Computational Techniques

Week 11 : Computer-aided balance calculations

Week 12 : Case Study for a Process

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Assignment 0

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

Due on 2020-01-26, 23:59 IST.

1) What is the dimension of velocity?

1 point

- LT⁻¹
 LT⁻²
 MT⁻¹
 MT⁻²

No, the answer is incorrect.
Score: 0

Accepted Answers:
LT⁻¹

2) Which of the following equipment is not used for crystallization?

1 point

- Scraped Surface Crystallizers
 Forced Circulating Liquid Evaporator-Crystallizer
 Circulating Magma Vacuum Crystallizer
 Drying liquid crystallizer

No, the answer is incorrect.
Score: 0

Accepted Answers:
Drying liquid crystallizer

3) Grashof number is defined as

1 point

- a) Buoyancy force/viscous force
 b) Inertia force x buoyancy force/(viscous force)²
 c) Viscous force/ buoyancy force
 d) (viscous force)²/Inertia force x buoyancy force

No, the answer is incorrect.
Score: 0

Accepted Answers:
b) Inertia force x buoyancy force/(viscous force)²

4) According to Buckingham's Method (π -theorem), number of groups formed depends on number of variables (n) and number of fundamental dimensions (j). Number of dimensionless groups can be formed as

1 point

- a) $n + j$
 b) $n - j$
 c) $n \times j$
 d) n / j

No, the answer is incorrect.
Score: 0

Accepted Answers:
b) $n - j$

5) Reynolds number is equal to (where, D , V , ρ and μ are diameter, velocity, density and viscosity respectively)

1 point

- a) $\mu/DV\rho$
 b) $\mu D/V\rho$
 c) $DV\rho/\mu$
 d) $DV\rho\mu$

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) $DV\rho/\mu$

6) Diffusivity of gas depends on temperature as

1 point

- a) $D_{AB} \propto T^{1.5}$
 b) $D_{AB} \propto T^{-1}$
 c) $D_{AB} \propto T^2$
 d) $D_{AB} \propto T$

No, the answer is incorrect.
Score: 0

Accepted Answers:
a) $D_{AB} \propto T^{1.5}$

7) Fick's law of diffusion is (where J , D , C and x are defined as molar flux, Diffusion coefficient, and concentration and position respectively)

1 point

- a) $J = D(\partial C/\partial x)$
 b) $J = -D(\partial C/\partial x)$
 c) $J = -D(\partial x/\partial C)$
 d) $J = D(\partial x/\partial C)$

No, the answer is incorrect.
Score: 0

Accepted Answers:
b) $J = -D(\partial C/\partial x)$

8) SI unit of specific enthalpy is (symbols has usual meaning)

1 point

- a) J/kg
 b) J/kg.K
 c) J/kg.K.m³
 d) J/K

No, the answer is incorrect.
Score: 0

Accepted Answers:
a) J/kg

9) Specific gravity (SG) of fluid with 28 °API

1 point

- a) 0.777
 b) 0.667
 c) 0.887
 d) 0.997

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) 0.887

10) For a gas- liquid mixture, volume fraction of gas (ag) = 0.6. value of volume fraction of liquid (al) is

1 point

- a) 1
 b) 0.6
 c) 0
 d) 0.4

No, the answer is incorrect.
Score: 0

Accepted Answers:
d) 0.4