

Unit 3 - Week 1: Introduction

Course outline

How does an NPTEL online course work?

Week 0 : Prerequisite

Week 1: Introduction

- Lecture 1.1: Definition, History, Role of Chemical Engineer
- Lecture 1.2: Basic Features of Chemical Process
- Lecture 1.3: Unit systems and dimensions

○ Quiz : Assignment 1

● Solution: Assignment 1

○ Feedback form

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 1

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

Due on 2020-02-12, 23:59 IST.

1) Based on multi-phase contact, Distillation is a process. 1 point

- Liquid-Liquid
- Liquid-Solid
- Liquid-vapor
- Solid-vapor

No, the answer is incorrect.
Score: 0

Accepted Answers:
Liquid-vapor

2) Decantation is a 1 point

- Crushing process
- Grinding process
- Mixing process
- Separation process

No, the answer is incorrect.
Score: 0

Accepted Answers:
Separation process

3) In stripping process, mass transfer occurs from 1 point

- Gas phase to liquid phase
- Liquid phase to solid phase
- Liquid phase to gas phase
- Gas phase to solid phase

No, the answer is incorrect.
Score: 0

Accepted Answers:
Liquid phase to gas phase

4) Convection is a heat transfer process in which 1 point

- energy transfer by molecular collision
- energy transfer by fluid motion
- energy transfer without any medium (like, air)
- energy transfer by photons of light

No, the answer is incorrect.
Score: 0

Accepted Answers:
energy transfer by fluid motion

5) Which of the following is FPS unit of mass? 1 point

- Pound mass (lbm)
- Slug
- Kilogram (kg)
- Gram (g)

No, the answer is incorrect.
Score: 0

Accepted Answers:
Pound mass (lbm)

6) Which of the following is **NOT** a fundamental unit? 1 point

- Time (T)
- Mass (M)
- Viscosity (μ)
- Length (L)

No, the answer is incorrect.
Score: 0

Accepted Answers:
Viscosity (μ)

7) Which of the following method is/are dimensional analysis method(s)? 1 point

- Rayleigh's method
- Buckingham's π method
- Both Rayleigh's method and Buckingham's π method
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both Rayleigh's method and Buckingham's π method

8) Dimension of force is (symbols have their usual meanings) 1 point

- MLT^{-2}
- ML^2T^{-2}
- ML^2T^{-3}
- $ML^{-1}T^{-2}$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 MLT^{-2}

9) Which of the following physical quantity has dimension MT^{-2} ? 1 point

- Viscosity
- Density
- Surface tension
- Acceleration

No, the answer is incorrect.
Score: 0

Accepted Answers:
Surface tension

10) Reynolds number is defined as 1 point

- Inertial forces/Gravitational forces
- Inertial forces/Pressure forces
- Pressure forces/Inertial forces
- Inertial forces/Viscous forces

No, the answer is incorrect.
Score: 0

Accepted Answers:
Inertial forces/Viscous forces

11) Transient process is a process in which 1 point

- process variables change with time
- process variables do not change with time
- process variables either constant or change with time
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
process variables change with time

12) According to Buckingham's Method (π -theorem), The number of dimensionless groups can be formed, if the number of variables is n and number of fundamental dimensions is j. 1 point

- $n + j$
- $n - j$
- $n \times j$
- n / j

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $n - j$

13) A process in which the solvent is used to separate solute from solution 1 point

- Humidification
- Drying
- Extraction
- Evaporation

No, the answer is incorrect.
Score: 0

Accepted Answers:
Extraction

14) Froude number is defined as 1 point

- Inertia force/ Surface tension force
- Inertia force/ Viscous force
- Pressure force/ Inertia force
- Inertia force/ Gravity force

No, the answer is incorrect.
Score: 0

Accepted Answers:
Inertia force/ Gravity force

15) Which of the following is NOT a size reduction process? 1 point

- Crushing
- Screening
- Grinding
- Attrition

No, the answer is incorrect.
Score: 0

Accepted Answers:
Screening