

## Unit 6 - Week 4 Solid liquid separation

### Course outline

How to access the portal?

Prerequisites Assignment

Week 1: Introduction

Week 2

Week 3: Cell breakage and Solid-Liquid Separation

Week 4 Solid liquid separation

Solid Liquid separation-problems

Pre-treatment and Filters

Adsorption

Quiz : Assignment 4

Week 4 - Lecture Material

Weekly Feedback 4 : Principles Of Downstream Techniques In Bioprocess

Week 5 Adsorption

Week 6 Liquid-Liquid Extraction

Week 7 Extraction and membranes

Week 8 Membranes

Precipitation and chromatography

week 10 chromatography

week 11 chromatography and crystallization

Week 12 Drying and distillation

DOWNLOAD VIDEOS

Text Transcripts

## Assignment 4

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

**Due on 2019-08-28, 23:59 IST.**

1) Filter aid does not

1 point

- Increases bed porosity
- decreases compressibility
- affects fluid viscosity
- decreases cake resistance

No, the answer is incorrect.

Score: 0

Accepted Answers:  
affects fluid viscosity

2) Filter aid decreases the bed compressibility factor from 0.5 to 0.25, what will be the filtration time if the pressure applied is 16 bar (original filtration time is 10 hours)

No, the answer is incorrect.

Score: 0

Accepted Answers:  
(Type: Numeric) 5

1 point

3) In cross flow filtration (what is not correct)

1 point

- liquid flows parallel to filter cloth
- no cake bed is formed
- pressure drop is low
- solids escape through the cloth

No, the answer is incorrect.

Score: 0

Accepted Answers:  
solids escape through the cloth

4) During adsorption, the change in entropy is

1 point

- positive
- negative
- no change
- depends on temperature

No, the answer is incorrect.

Score: 0

Accepted Answers:  
negative

5) If the relationship between [1/fraction of surface covered] and [1/pressure] is linear then the adsorption is

1 point

- linear
- Langmuir
- Freundlich
- BET

No, the answer is incorrect.

Score: 0

Accepted Answers:  
Langmuir

6)  $\Delta G$  of spontaneous reactions will be

1 point

- zero
- negative
- positive
- infinite

No, the answer is incorrect.

Score: 0

Accepted Answers:  
negative

7) Adsorption is independent of pressure when

1 point

- all the sites are occupied
- at low pressure
- when the adsorbent is a fine powder
- temperature is very high

No, the answer is incorrect.

Score: 0

Accepted Answers:  
all the sites are occupied

8) I require 1 g of adsorbent to adsorb 80% of an impurity from a solution. How much adsorbent I would require to adsorb 90% of the same impurity (all other conditions are same)

No, the answer is incorrect.

Score: 0

Accepted Answers:  
(Type: Range) 1.12,1.13

1 point

9) For adsorption to be spontaneous  $\Delta H$  should

1 point

- increase
- remain same
- decrease
- depends on adsorbent type

No, the answer is incorrect.

Score: 0

Accepted Answers:  
decrease

10) In Langmuir adsorption, at low pressure values, the relationship between pressure and surface coverage will be

1 point

- independent (no relation)
- non-linear
- linear
- quadratic

No, the answer is incorrect.

Score: 0

Accepted Answers:  
linear