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NPTEL

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Courses » Principles Of Downstream Techniques In Bioprocess

Announcements

**Course**

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## Unit 4 - Week 2

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### Course outline

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Week 2

- Solid Liquid Separation
- Pre-treatment and Filters/centrifuge
- Liquid-Liquid Extraction
- Liquid-Liquid extraction (continued)
- Quiz : Assignment 2
- Week 2 feedback form

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## Assignment 2

The due date for submitting this assignment has passed. **Due on 2019-02-13, 23:59 IST**  
As per our records you have not submitted this assignment.

1) Stoke's law pertains to

1 point

- Filtration
- particle settling
- flocculation
- cross flow

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*particle settling*

2) Which is a surface filter in this list

1 point

- pebble filter
- rain water harvesting filter
- Screen filter
- sand filter

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Screen filter*

3) When the particle size is reduced by one half then terminal settling velocity

1 point

- increase by 2 times
- decreases by 2 times
- increases by 4 times
- decreases by 4 times

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*decreases by 4 times*

4) If a graph as shown below is obtained, it indicates

1 point

Where A=area of filtration, t= time of filtration and V=volume filtered

- filter medium offers resistance
- filter medium offers no resistance

- the cake is compressible
- the liquid is very viscous

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*filter medium offers resistance*

5) It takes 60 minutes to filter a slurry of 1500 ltr using a filter of  $1.5 \text{ m}^2$  area. How long will it take to filter  $20 \text{ m}^3$  of same slurry with a filter of area  $20 \text{ m}^2$ . Assume incompressible cake, resistance offered by cloth is zero and same pressure

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*(Type: Numeric) 60*

1 point 

6) If I want to use the same centrifuge to remove solids with one half the diameter how much the through put will decrease by in %

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*(Type: Numeric) 25*

1 point

7) In a settling tank, I settle solids with specific gravity of 2 with water as the liquid. If I use now solids of specific gravity of 1.5, what will be the decrease in settling time in %

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*(Type: Numeric) 50*

1 point

8) What is the fraction extracted in an extractor if  $E = 3$ . We are adding fresh solvent

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*(Type: Numeric) 0.75*

2 points

9) What will be the fraction extracted in problem 8, If the amount of solvent used is reduced by half but charged in two stages -----

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*(Type: Range) 0.83,0.85*

3 points

10) How many counter current extraction stages (give answer in whole number) are required if we want to recover 80% of a solute.  $E=2.1$  -----

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Numeric) 2

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