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NPTEL

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Courses » Principles Of Downstream Techniques In Bioprocess

Announcements

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# Unit 3 - Week 1 \_Introduction

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## Course outline

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## Assignment 1

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) Name one operation which is not a solid – liquid separation process 1 point

- filtration
- centrifugation
- flocculation
- adsorption

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**  
*adsorption*

2) Which operations can be used for removal of insolubles 1 point

- absorption
- extraction
- sedimentation
- chromatography

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**  
*sedimentation*

3) which step cannot be used for removal of water 1 point

- sublimation
- drying
- lypholisation
- precipitation

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**  
*precipitation*

4) There are two down stream steps. If efficiency of separation in these two steps are 96% and 95%, how much of the product is lost overall -----

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

(Type: Range) 0.086,0.090

1 point

5) Cost of a filter is Rs 22.5 Lakhs. We make a profit of Rs 50 when we do a sample for customers. We do 25 samples per day. Assuming 300 working days in a year, what will be the payback period in terms of years for the HPLC

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

(Type: Numeric) 6

1 point

6) We need 10 ltrs of methanol to recover 3 kgs of a product. If the fermentation broth contains 12 kgs of the product, how much methanol is required?

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

(Type: Numeric) 40

1 point

7) If 97.5 % of the product is removed from a broth containing 150 kgs of it using a downstream process, how much of the product is lost in kgs -----

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

(Type: Numeric) 3.75

1 point

8) I give Rs 22000 to my friend. He has promised to return this money next year. What will be the net present value of that money (assume rate of discount as 10%). ---

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

(Type: Numeric) 20000

1 point

9) If a simple filter is used for filtering a slurry, the solids retain 10 wt% of the liquid, while if a centrifuge is used the solids retain only 2 wt% of the liquid. If a slurry contains 25 kg solids, how much difference of liquid will be lost (in kgs) if I use a filter rather than the centrifuge? -----

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

(Type: Numeric) 2

1 point

10) The release of proteins during cell disruption into the extra cellular region may follow a

1 point

- $c = c_0 \exp(-kt)$
- $c = c_0 \cdot t$
- $c = c_0 / \exp(-kt)$
- $c = c_0 / t$

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

$c = c_0 \exp(-kt)$



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Funded by

Government of India  
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