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NPTEL

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Courses » Principles Of Downstream Techniques In Bioprocess

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Assignment 3

The due date for submitting this assignment has passed. **Due on 2019-02-27, 23:59 IST**
As per our records you have not submitted this assignment.

1) In a staged equilibrium process

1 point

- streams entering the stage are in equilibrium
- streams leaving the stage are in equilibrium
- none are in equilibrium
- only if they are in liquid form

No, the answer is incorrect.

Score: 0

Accepted Answers:

streams leaving the stage are in equilibrium

2) Low molecular weight PEG (in aqueous two phase extraction)A

1 point

- will decrease partition coefficient
- will increase partition coefficient
- partition coefficient will remain same
- decrease partition coefficient

No, the answer is incorrect.

Score: 0

Accepted Answers:

will decrease partition coefficient

3) Decrease salt concentration in the bottom phase of two phase extraction

1 point

- increases protein amount in upper phase
- decreases protein amount in upper phase
- protein amount in upper phase remains same
- protein gets deactivated

No, the answer is incorrect.

Score: 0

Accepted Answers:

decreases protein amount in upper phase

4) Proteins with more aspartic acid will partition to

1 point

- bottom phase
- upper phase
- interphase
- no effect

No, the answer is incorrect.

Score: 0

Accepted Answers:

bottom phase

5) Aqueous two-phase extraction method is used to extract an enzyme. The partition coefficient is 1.5. Calculate the maximum possible enzyme recovery when the volume ratio of upper to lower phases is 1.9 -----

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 0.73,0.75

6) If I want to increase the extraction efficiency to 90% in problem 7, what should the volume ratio for same partition coefficient?

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 0.88,0.92

7) In Aqueous two-phase extraction, if partition coefficient = 2, and if the total concentration of the protein is 3.0 Mm in 350 ltr, calculate the concentration in the top phase if the extraction efficiency is 90% and volume of liquid in the lower phase is 100 L. -----

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 4.1,4.3

8) If the dialyzer clearance $K_d = 5$ ml/min, the concentrations of urea in the blood entering is 0.15 mmoles/liter and if no blood fluids escapes, Calculate the concentrations of urea in the blood leaving the unit if the blood flow is 20 ml/min -----

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 0.11,0.115

9) In an MF if the Concentration at the wall is 60% more than the bulk, diffusion coefficient divided boundary layer thickness is = 0.005 cm/sec, what is the velocity of flow (cm/sec) -----

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 0.0023,0.0024



1 point



1 point

1 point

1 point

1 point

10) Calculate the permeate flux through a NF membrane if the Membrane permeability = 0.1, 30% of the solids are rejected, driving force = 10 bar, osmotic pressure = 5 bar.-----

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 0.84,0.86



1 point

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