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NPTEL

Courses » **Principles Of Downstream Techniques In Bioprocess**

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Unit 7 - Week 5

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**Week 1
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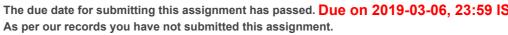
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○ Chromatography
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Assignment 5

The due date for submitting this assignment has passed. **Due on 2019-03-06, 23:59 IST.**
As per our records you have not submitted this assignment.

1) If retention time is 10 mins and width at half maximum is 2 mins , what is the
number of theoretical plates of the chromatographic column (give next highest
integer) -----------------

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 139

1 point

2) if retention time of two peaks are 12 and 10 mins and the width at their base is
1.5 and 2mins respectively, what is the resolution ----------------------

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 1.1,1.2

1 point

3)   *1 point*

○ D/C/B/A
○ A/B/C/D
○ B/A/D/C
○ D/C/A/B

No, the answer is incorrect.
Score: 0

Accepted Answers:
D/C/B/A

4) Protein A has a molecular weight of 60,000 and elutes in 3.887 min. Protein B has
a molecular weight of 20000 and elutes at 5.796 mins.What is the moleculr weight of
a protein which elutes at 4.6 min in a Gel permeation chromatography (GPC) -----------
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No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 41000,42000

1 point

5) 30 wt % of the polymer has a molecular weight of 10,000 and the rest of the polymer has a molecular weight of 60,000. What is the weight average molecular weight of the mixture -------------------

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 45000

1 point

6) If the retention time of a chromatographic peak is 25 mins, standard deviation equals = 0.35 mins, What is the number of theoretical stages?

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 5100,5105

1 point

7) BSA protein is eluted from a 100 ltr packed column having a void fraction =0.3. If the equilibrium constant = 8.0 calculate the volume of eluate (in ltrs) at which the peak occurs -----------

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 589,591

1 point

8) If the maximum concentration is = 2.0 % of that originally in the column, calculate number of theoretical stages (give the answer as next whole number)?

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 1592

1 point

9) A 100 ltr packed column has a void fraction =0.25. If the volume of eluate at which the peak occurs =800 ltrs calculate the equilibrium constant ----------------

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 10.1,10.6

1 point

10)Width of the chromatographic pulse is increased by (one of the statements   *1 point*
is wrong)

○ Increasing velocity

○ increasing particle size
○ decreasing column length
○ decreasing column

No, the answer is incorrect.
Score: 0

Accepted Answers:
decreasing column

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