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[NPTEL \(https://swayam.gov.in/explorer?ncCode=NPTEL\)](https://swayam.gov.in/explorer?ncCode=NPTEL) » [Quantitative Methods in Chemistry \(course\)](#)
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Unit 13 - Week 10

Course outline

How does an NPTEL online course work?

Week 0

MATLAB

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Basics of Chromatography

Assignment 10

The due date for submitting this assignment has passed. **Due on 2020-04-08, 23:59 IST.**
As per our records you have not submitted this assignment.

1) As the length of chromatography column is increased, its dead time or void time will: **1 point**

- Decrease linearly
- Increase linearly
- Remain constant
- Decrease exponentially
- Increase exponentially

No, the answer is incorrect.
Score: 0

Accepted Answers:
Increase linearly

2) If the dead time for a column is 7.0 seconds, the best chromatographic separations are expected to happen between: **1 point**

- 3.5-14.0 seconds
- 7.0-10.5 seconds
- 7.0-35.0 seconds
- 28.0-49.0 seconds
- 70.0-140.0 seconds

No, the answer is incorrect.
Score: 0

Accepted Answers:
7.0-35.0 seconds

3) Plate height is the length of the column that contains x% of analyte where x = **1 point**

- Part 01 (unit?
unit=98&lesson=97)

Basics of
Chromatography
- Part 02 (unit?
unit=98&lesson=99)

Chromatography
- Concept of
Theoretical
plates (unit?
unit=98&lesson=100)

Chromatography
- Rate Theory
(unit?
unit=98&lesson=101)

Quiz :
**Assignment 10
(assessment?
name=104)**

Quantitative
Methods in
Chemistry :
Week 10
Feedback Form
(unit?
unit=98&lesson=105)

Assignment 10
solutions (unit?
unit=98&lesson=113)

Lecture
materials (unit?
unit=98&lesson=127)

Week 11

Week 12

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- 50.00
 55.35
 27.62
 68.30
 34.15

No, the answer is incorrect.

Score: 0

Accepted Answers:

34.15

4) Considering that an analyte A being eluted from a column of length $L = 50$ cm elutes in a gaussian profile with a variance of 4 cm^2 , then 99% of the analyte

1 point

A will be contained in y cm of column where $y =$

- 5
 10
 8
 12
 16

No, the answer is incorrect.

Score: 0

Accepted Answers:

10

5) For the above data, the width at the baseline in cm for A will be:

1 point

- 8
 10
 12
 16
 5

No, the answer is incorrect.

Score: 0

Accepted Answers:

8

6) If the retention time (t_R) for analyte A in Q4 is 125 seconds, then the width at baseline in seconds will be:

1 point

- 5
 10
 20
 15
 22

No, the answer is incorrect.

Score: 0

Accepted Answers:

20

7) Based on the information provided in Q4 and Q6, the HETP value for analyte A in this chromatography will be:

1 point

- 5.0 cm
 1.0 cm

- 0.10 cm
- 0.08 cm
- 8.0 cm

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.08 cm

8) The number of theoretical plates present in the column for analyte A are:

1 point

- 525
- 625
- 750
- 450
- 700

No, the answer is incorrect.

Score: 0

Accepted Answers:

625

9) Which of the following is/are **not** true for plate theory?

1 point

- Plates within the column are real and hence can be counted
- Plate theory preceded rate theory
- Plate theory presumes that the adsorption isotherms for solutes on the stationary phase are linear
- Plate theory can be applied in gradient elutions
- Plate theory has a kinetic basis

No, the answer is incorrect.

Score: 0

Accepted Answers:

Plates within the column are real and hence can be counted

Plate theory can be applied in gradient elutions

Plate theory has a kinetic basis

10) The efficiency of chromatographic separations:

1 point

- Always decreases on increasing the rate of solvent flow
- Always increases on increasing the rate of solvent flow
- First increases and then decreases as the solvent flow rate is increased
- First decreases and then increases as the solvent flow rate is increased
- Is not influenced by the rate of solvent flow

No, the answer is incorrect.

Score: 0

Accepted Answers:

First increases and then decreases as the solvent flow rate is increased

