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Unit 2 - Week 1

Course outline

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Week 1

- Lecture 1: Historical development of polymer science
- Lecture 2: Molecular Weight Determination of Polymers
- Lecture 3: Molecular Weight Determination of Polymers (Contd.)
- Lecture 4: Molecular Weight Determination of Polymers (Contd.)
- Lecture 5: Molecular Weight Determination of Polymers (Contd.)
- Quiz : Week 1 Assignment 1
- Week 1 : Lecture Material
- Week 1: Assignment Solution

Week 2

Week 3

Week 4

Week 5

Week 1 Assignment 1

The due date for submitting this assignment has passed. **Due on 2018-02-21, 23:59 IST.**

Submitted assignment

1) Which of the following polymer type is not classified on the basis of its structures? ***1 point***

- (a) Linear polymer
- (b) Branched polymer
- (c) Cross-linked
- (d) Synthetic polymer

No, the answer is incorrect.
Score: 0

Accepted Answers:
(d) Synthetic polymer

2) Calculate the polydispersity index (PDI) of a sample containing 1g, 3 g and 4 g of polymer having molecular weights of 10000, 50000, 100000 g/mol respectively ***1 point***

- (a) 0.634
- (b) 1
- (c) 1.75
- (d) 2.575

No, the answer is incorrect.
Score: 0

Accepted Answers:
(c) 1.75

3) Which of the following order is generally correct? ***1 point***

- (a) Mw>Mn>Mv
- (b) Mn>Mv>Mw
- (c) Mw>Mv>Mn
- (d) Mv>Mw>Mn

No, the answer is incorrect.
Score: 0

Accepted Answers:
(c) Mw>Mv>Mn

4) Which of the following statements is/are true for weight average molecular weight (Mw)? ***1 point***

- (a) Bias towards higher molecular weight fraction
- (b) Bias toward lower molecular weight fraction
- (c) Not biased towards any molecular weight fraction
- (d) Can not comment

Week 6

Week 7

Week 8

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No, the answer is incorrect.
Score: 0

Accepted Answers:
(a) Bias towards higher molecular weight fraction

5) We cannot determine very high molecular weight in vapor pressure osmometry because ***1 point***

- (a) Wheatstone bridge principle is not valid for high molecular weight
- (b) No change in vapor pressure occurs
- (c) The polymer will not dissolve in solvent
- (d) Change in temperature cannot be determined

No, the answer is incorrect.
Score: 0

Accepted Answers:
(d) Change in temperature cannot be determined

6) Polyethylene comes under which of the following classes of polymer? ***1 point***

- (a) Commodity
- (b) Speciality
- (c) Engineering
- (d) None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
(a) Commodity

7) Calculate the PDI of a polymer sample (100 g), where 90 % of the polymer having molecular weight 10 000 g/mol while the rest have the molecular weight of 100 g/mol ***1 point***

- (a) 1.09
- (b) 5.60
- (c) 9.82
- (d) 9.01

No, the answer is incorrect.
Score: 0

Accepted Answers:
(c) 9.82

8) In Gel permeation chromatography ***1 point***

- (a) Separation occurs on the basis of size
- (b) Separation occurs on the basis of functionality
- (c) Separation occurs on the basis of mechanical properties
- (d) None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
(a) Separation occurs on the basis of size

9) Which of the following is/are not an absolute method for molecular weight determination, of polymer? ***1 point***

- (a) Vapor pressure osmometry
- (b) Membrane osmometry
- (c) Viscosity method
- (d) None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:

(a) Vapor pressure osmometry
(c) Viscosity method

10) Which of the following monomer units are present in Natural Rubber ? ***1 point***

- (a) Cis-isoprene units
- (b) Trans-isoprene units
- (c) Cyclo-octadiene units
- (d) None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
(a) Cis-isoprene units

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