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Courses » Principles of Polymer Synthesis

Announcements

Course

Ask a Question

Progress

Mentor

## Unit 9 - Week 8

### Course outline

How to access the portal

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

● Lecture 36: Synthesis of industrial polymers(Contd..)

● Lecture 37: Synthesis of industrial polymers(Contd..)

● Lecture 38: Synthesis of industrial polymers(Contd..)

● Lecture 39: Synthesis of industrial polymers(Contd..)

● Lecture 40: Synthesis of industrial polymers(Contd..)

● Lecture 41: Synthesis of industrial polymers(Contd..)

● Lecture 42: Synthesis of industrial polymers(Contd..)

● Lecture 43: Synthesis of industrial polymers(Contd..)

● Lecture 44: Synthesis of industrial polymers(Contd..)

## Week 8 Assignment 8

The due date for submitting this assignment has passed.

**Due on 2018-04-04, 23:59 IST.**

### Submitted assignment

1) Choose the correct order of crystallinity for different Nylons ?

1 point

- a. Nylon 4,6 > Nylon 6,6 > Nylon 6
- b. Nylon 6,10 > Nylon 6,6 > Nylon 6
- c. Nylon 6,6 > Nylon 6 > Nylon 4,6
- d. Nylon 6 > Nylon 6,6 > Nylon 4,6

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

a. Nylon 4,6 > Nylon 6,6 > Nylon 6

2) Which of the following order is correct for Nylons with respect to young's modulus ?

1 point

- a. Nylon 11 < Nylon 10 < Nylon 6 < Nylon 6,6
- b. Nylon 6,6 < Nylon 10 < Nylon 6 < Nylon 11
- c. Nylon 6 < Nylon 6,6 < Nylon 10 < Nylon 11
- d. Nylon 6,6 < Nylon 6 < Nylon 10 < Nylon 11

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

c. Nylon 6 < Nylon 6,6 < Nylon 10 < Nylon 11

3) In a reaction of PMDA and PPD to synthesize polyimide, why polar aprotic solvents are used ?

1 point

- a. To stop reverse reaction
- b. To behave as a catalyst
- c. To stop cyclization
- d. It is easily available and very cheap

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

a. To stop reverse reaction

4) In thermoplastic elastomers, the stretchability comes from

1 point

- a. Hard segment
- b. Plasticizer
- c. Polar parts
- d. Soft segment

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

d. Soft segment

5)

1 point

For which value of  $T_g$  and  $T_m$  the polycarbonates will have the best combination of properties (high temperature resistance along with sufficiently high impact strength)?

● Lecture 45:  
Synthesis of  
industrial  
polymers(Contd..)

● Lecture 46:  
Synthesis of  
industrial  
polymers(Contd..)

● Lecture 47:  
Synthesis of  
industrial  
polymers(Contd..)

○ Quiz : Week 8  
Assignment 8

● Week 8 : Lecture  
Material

○ Week 8  
Assignment 8  
Solution

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VIDEOS**

- a.  $T_g = 203\text{ }^\circ\text{C}$  and  $T_v = 45\text{ }^\circ\text{C}$
- b.  $T_g = 150\text{ }^\circ\text{C}$  and  $T_v = 45\text{ }^\circ\text{C}$
- c.  $T_g = 150\text{ }^\circ\text{C}$  and  $T_v = -105\text{ }^\circ\text{C}$
- d.  $T_g = 175\text{ }^\circ\text{C}$  and  $T_v = -45\text{ }^\circ\text{C}$

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

c.  $T_g = 150\text{ }^\circ\text{C}$  and  $T_v = -105\text{ }^\circ\text{C}$

6) Generally in the polycarbonates, why alkali salts of sulfonic acids is used ? 1 point

- a. To improve mechanical properties
- b. To catalyze Fries rearrangement
- c. To reduce  $T_g$
- d. To increase the decomposition rate

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

b. To catalyze Fries rearrangement

7) Which of the following statements is true for epoxy equivalent weight (EEW) ? 1 point

- a. With increase in molecular weight ,EEW increases
- b. With increase in molecular weight, EEW decreases
- c. Higher the EEW, lower will be the curing agent required
- d. Higher the EEW, higher will be the curing agent required

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

a. With increase in molecular weight ,EEW increases

c. Higher the EEW, lower will be the curing agent required

8) In a polyimide reaction, why 5-Norbornene-2,3-dicarboxylic anhydride was added as a monofunctional reactant ? 1 point

- a. May act as a crosslinking site at room temperature
- b. Control the molecular weight
- c. To stop reverse reaction
- d. May act as a crosslinking site at higher temperature

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

b. Control the molecular weight

d. May act as a crosslinking site at higher temperature

9) In interfacial polymerization, which of the following may act as a phase transfer catalyst ? 1 point

- a. NaCl
- b. Crown ethers
- c. Et3N
- d. Phosgene

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

b. Crown ethers

c. Et3N

10) Which is the  $T_g$  of a co-polycarbonate, having equal amount of homopolymers with  $T_g$  values 100 deg C and -50 deg C respectively. (Answer in deg C)

Hint

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 6-7

1 point

Previous Page

End

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