Week 4 Assignment 4

The due date for submitting this assignment has passed. Due on 2018-03-07, 23:59 IST.

Submitted assignment

1) Which of the following is true for perfectly alternating copolymerization of two monomers? (r1, r2: reactivity ratio)
   - (a) r1r2 = 1
   - (b) r1 = r2 = 0
   - (c) r1 >1, r2 > 1
   - (d) r1r2 >1

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   (b) r1 = r2 = 0

2) Butyl acrylate (1) and methyl acrylate (2) undergo an ideal co-polymerization at 70 degree Celsius. What is the instantaneous composition of this copolymer for a monomer feed composition f1 = 0.75 and r2 = 0.4

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   (Type: Range) 0.88,0.89

3) In a polymerization reaction of styrene using AIBN, what will be the effect on average degree of polymerization (Xn), if reaction temperature increased by 10 degree Celsius?
   - (a) Xn increases by 2-3 fold
   - (b) Xn decreases
   - (c) Xn remain constant
   - (d) Xn increases by more than 10 fold

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   (b) Xn decreases

4) In a co-polymerization reaction of methyl methacrylate (1) and vinyl chloride (2); r1r2 = 1 and r1 = 0.5, the instantaneous composition of the copolymer will consist of... (r1, r2: reactivity ratios)
   - (a) Same amount of methyl methacrylate and vinyl chloride
   - (b) Greater amount of methyl methacrylate

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   (b) Xn decreases
5) In a living radical chain polymerization employing reversible termination, which of the following is true for persistent radical?

- Highly reactive
- Initiates polymerization
- Very unstable
- Does not initiate polymerization

No, the answer is incorrect.
Score: 0
Accepted Answers:
(d) Does not initiate polymerization

6) In an ATRP reaction, CuBr(L) [L= PMDETA] is used as-

- Initiator
- Catalyst
- Filler
- All the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
(b) Catalyst

7) Calculate the composite activation energy for the polymerization of styrene at 100 °C using di-tertiary-butyl peroxide as an initiator (Given: Ed = 33.5 kcal/mol; Ep = 7.0 kcal/mol Et = 300 cal/mol)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 23.5, 23.7

8) In a copolymerization of M1 (1) and M2 (2); if r1 = r2 = infinite, then

- Both the monomer will undergo simultaneous and independent homopolymerization
- Block copolymer will be formed
- Ideal co-polymer will be formed
- No reaction will occur

No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) Both the monomer will undergo simultaneous and independent homopolymerization

9) Two monomers M1 and M2 having reactivity ratio r1 = 0.2 and r2 = 0.5 respectively, undergoes an azeotropic copolymerization, calculate f1 (monomer feed composition)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) Both the monomer will undergo simultaneous and independent homopolymerization
10) In a copolymerization reaction of monomer M1 and M2, if \( k_{11}k_{22} = k_{12}k_{21} \) then what is the type of copolymerization?

- a) Ideal Copolymerization
- b) Alternative copolymerization
- c) Block copolymerization
- d) Can not comment

No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) Ideal Copolymerization