Assignment 2

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2021-02-07, 23:59 IST.

1) Choose the correct sequence of the dissociation energy of bonding forces in the polymer structure:
   - Covalent bond > Ionic bond > Hydrogen bonding > Dipole forces > Van der Waals forces
   - Ionic bond > Covalent bond > Hydrogen bonding > Dipole forces > Van der Waals forces
   - Covalent bond > Ionic bond > Hydrogen bonding > Van der Waals forces > Dipole forces
   - Covalent bond > Ionic bond > Dipole forces > Hydrogen bonding > Van der Waals forces
   Score: 0
   Accepted Answers:
   - Covalent bond > Ionic bond > Hydrogen bonding > Dipole forces > Van der Waals forces

2) Choose which one is the false statements:
   - The polymer molecules are attached to each other with the primary and secondary bonding forces such as covalent bond, ionic bond, hydrogen bonding, and van der Waals forces, etc.
   - A covalent bond forms when the difference between the electronegativities of two atoms is too small for an electron transfer to occur and form ions.
   - When there is a transfer of an electron from one atom to another to attain a stable electronic configuration, the bond formation is called an ionic bond.
   - Hydrogen bonding cannot be occur in the same molecule.
   Score: 0
   Accepted Answers:
   - Hydrogen bonding cannot be occur in the same molecule

3) In which of the following polymerization process temperature is not easier to control?
   - Solution polymerization process
   - Suspension polymerization process
   - Bulk polymerization process
   - Emulsion polymerization process
   Score: 0
   Accepted Answers:
   - Bulk polymerization process

4) Which one of the following property of the polymer is desirable during the synthesis of the polymers:
   - Lower molecular weight
   - Incompatibility
   - Low viscosity
   - All of the above
   Score: 0
   Accepted Answers:
   - Low viscosity

5) Choose the correct one from the following statements:
   - Due to uncontrolled and accelerated rate, the bulk polymerization process can be used for chain and step grown polymerization.
   - In the product formed due to the use of solvent in solution polymerization process, precipitation is a heterogeneous process at the start.
   - In the suspension polymerization process, temperature control is not easier.
   - The polymer with lower molecular weight can be obtained by quenching or cooling the reaction at some appropriate time.
   Score: 0
   Accepted Answers:
   - The polymer with lower molecular weight can be obtained by quenching or cooling the reaction at some appropriate time.

6) The reaction of polymer molecules can be controlled by addition of the small amount of mono-functional monomer to the reaction mass.
   - True
   - False
   Score: 0
   Accepted Answers:
   - True

7) For the control on the polymer synthesis which is not correct in the following statements:
   - When the reactivities of the groups are high and molecular weight is also very high then the polymerization becomes diffusion-controlled.
   - The polymer with desirable molecular weight can be obtained by quenching or cooling the reaction at some appropriate time.
   - Chain termination step is not a diffusion-controlled reaction.
   - The interfacial polymerization process occurs in the two liquid phases. It is required that the reaction must have to be diffusion-limited.
   Score: 0
   Accepted Answers:
   - The reaction must have to be diffusion-limited.

8) For polydispersity index which statement is not correct:
   - It is the ratio of weight average molecular weight to number average molecular weight.
   - It is usually one for monodisperse polymer or greater than one for actual polymer.
   - It is used as a measure of breadth of molecular weight distribution.
   - The polymer with the number average molecular weight alone with considering the polydispersity may yield.
   Score: 0
   Accepted Answers:
   - The polymer with the number average molecular weight alone with considering the polydispersity may yield.

9) Weight average molecular weight is based upon the light scattering by the polymer solution and it is most accurate for the higher molecular weight polymer:
   - True
   - False
   Score: 0
   Accepted Answers:
   - True

10) The temperature control on the polymer synthesis is required when:
    - When reactor is operated at an unstable state operation
    - When the reaction is highly exothermic in nature and unreacted monomer is present in the reactor
    - Neither a nor b is correct
    - Both a and b are correct
    Score: 0
    Accepted Answers:
    - Both a and b are correct