

Chemical Reaction Engineering Objective Questions and Answers Pdf

1. For an ideal gas mixture undergoing a reversible gaseous phase chemical reaction, the equilibrium constant
 - a. Is independent of pressure
 - b. Increases with pressure
 - c. Decreases with pressure
 - d. Increases/decreases with pressure depending on the stoichiometric and coefficients of the reaction

Ans: B

2. The rate constant of a chemical reaction is increased by increasing the
 - a. Reactants concentration
 - b. Duration of reaction
 - c. Pressure
 - d. Temperature

Ans: C

3. For efficient heat transfer to and from a jacketed reactor, the reactor configuration should have

- a. Low surface to volume ratio
- b. High surface to volume ratio
- c. Any surface to volume ratio because heat transfer does not depend on surface to volume ratio
- d. Unpredictable

Ans: B

4. The effectiveness factor can be significantly greater than one for a reaction, which is
 - a. Exothermic and isothermal
 - b. Endothermic and isothermal
 - c. Exothermic and non isothermal
 - d. Endothermic and non isothermal

Ans: C

5. Bulk diffusion catalyst pore ____ with increase in pressure.

- a. Increases
- b. Decreases
- c. Remains unchanged
- d. Increases exponentially

Ans: B

6. The rate of reaction does not decrease appreciably as the reaction proceeds in case of ____ reactions.

- a. Autocatalytic
- b. Exothermic
- c. Endothermic
- d. Autothermal

Ans: A

7. BET apparatus
- Measures the catalyst surface area directly
 - Operates at very high pressure
 - Is made entirely of stainless steel
 - None of these

Ans: D

8. Catalyst is a substance, which ____ chemical reaction.
- Increases the speed of a
 - Decreases the speed of a
 - Can either increase or decrease the speed of a
 - Alters the value of equilibrium constant in a reversible

Ans: C

9. A back mix reactor
- Is same as plug flow reactor
 - Is same as ideal stirred tank reactor
 - Employs mixing in axial directions only
 - Is most suitable for gas phase reaction

Ans: B

10. The rate constant of a reaction depends on the
- Initial concentration of reactants
 - Time of reaction
 - Temperature of the system
 - Extent of reaction

Ans: C

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