

A First Course on Kinetics and Reaction Engineering

Unit 4 Additional Quiz Questions

- Which of the following is NOT a required characteristic of all rate expressions?
 - it evaluates to zero whenever equilibrium temperature, pressure and composition are substituted
 - it shows that the rate is proportional to each species' concentration raised to a power equal to that species' stoichiometric coefficient
 - it is single-valued
- Which of the following is NOT one of the steps in the procedure for generating a rate expression?
 - Choose a reactor
 - Generate design equations for the reactor and ensure that they accurately describe the reactor's performance
 - Perform experiments
 - Take a reading from the rate meter
 - Fit the design equation to the experimental data
- Which of the following procedures is used to test a particular mathematical function to see whether it is suitable as the rate expression for a reaction that has been studied experimentally.
 - Fit the rate meter data to the experimentally measured data
 - Fit the rate meter data to the rate expression being tested
 - Fit the experimentally measured data to the rate expression being tested
 - Fit the design equation for the experimental reactor to the experimental data
 - Fit the experimental data to the design equation for the experimental data
- True or False? The heat of reaction that appears in the exponential term of an equilibrium constant can be positive or negative.
- Which of the following is NOT a common source of temperature dependence in a rate expression for a gas phase reaction.
 - The partial pressures of the species as a result of the ideal gas law.
 - Equilibrium constants.
 - Rate coefficients.
 - The concentrations of the species as a result of the ideal gas law.
 - The viscosity of the fluid as a result of the kinetic theory of gases.