

Unit 8. Pre-Class Quiz Questions

1. True or False? The rate-determining step occurs much more slowly than all other steps in the mechanism.
2. If one step in a reaction mechanism is rate-determining, then the remaining steps
 - a. are irreversible
 - b. are exothermic
 - c. are endothermic
 - d. are quasi-equilibrated
 - e. are faster
3. True or False? Every mechanism has a rate determining step
4. True or False? If the Gibbs free energy change associated with one step in a mechanism is essentially equal to the Gibbs free energy change for the macroscopically observed, non-elementary reaction, then that step is quasi-equilibrated
5. When one step in a mechanism is rate-determining, the concentrations or partial pressures of reactive intermediates are found by solving the equations that result when
 - a. the Bodenstein steady state approximation is applied to all other steps
 - b. a linear combination of all reaction steps that sums to give the overall reaction is identified
 - c. the remaining steps are assumed to be quasi-equilibrated
 - d. the rate of the rate-determining step is set equal to the overall rate of the non-elementary reaction
 - e. the rate of the rate-determining step is set equal to zero