A First Course on Kinetics and Reaction Engineering

Unit 7 Pre-Class Quiz

1. True or False? The steady state approximation assumes that reactants and products quickly build up to a steady state concentration which then remains essentially constant for the duration of the reaction.
2. Why is it necessary to simplify the initial rate expression generated from a reaction mechanism?
   a. Rate expressions cannot contain more than three terms.
   b. To eliminate concentrations of reactants
   c. To eliminate concentrations of products
   d. To eliminate concentration of reactive intermediates
   e. To give professors a topic to talk about
3. If a step in a reaction mechanism is kinetically insignificant
   a. It must be re-written in terms of steps that are significant
   b. Only the forward rate for that step may be set equal to zero
   c. Only the reverse rate for that step may be set equal to zero
   d. Both the forward and the reverse rates for that step may be set equal to zero
   e. It may develop an inferiority complex
4. If a step in a reaction mechanism is effectively irreversible
   a. It must be re-written in terms of steps that are reversible
   b. Only the forward rate for that step may be set equal to zero
   c. Only the reverse rate for that step may be set equal to zero
   d. Both the forward and the reverse rates for that step may be set equal to zero
   e. It may be assumed to be at steady state
5. If a reaction mechanism contains three reactive intermediates, to how many of them will the Bodenstein steady state approximation apply?
   a. You can’t tell
   b. 0
   c. 1
   d. 2
   e. 3