

Unit 9. Pre-Class Quiz Questions

1. Which of the following does NOT need to be conserved within a reaction mechanism
 - a. mass
 - b. charge
 - c. catalyst
 - d. moles
 - e. enzyme
2. Derivation of a Michaelis-Menten rate expression typically involves
 - a. applying the Bodenstein steady-state approximation and assuming a rate-determining step
 - b. assuming a rate-determining step and applying conservation of catalyst to the enzyme
 - c. applying the Bodenstein steady-state approximation and conservation of enzyme
 - d. taking the inverse of the product and substrate concentrations
 - e. applying the Lineweaver-Burke assumption to the rate-determining step
3. Which of the following is usually assumed when using the conservation of catalyst equation to eliminate concentrations of reactive intermediates from rate expressions?
 - a. the amount of free catalyst can usually be measured easily
 - b. the catalyst will always ionize
 - c. the equivalent concentration of catalyst in its original form before being added to the system is usually known
 - d. some catalyst will precipitate as a solid and become a heterogeneous catalyst
 - e. each catalyst can complex with only one other species
4. A Lineweaver-Burke plot is (choose all that are true)
 - a. a plot of a linearized form of a Michaelis-Menten kinetic expression
 - b. used to determine whether the kinetics of an enzyme-catalyzed reaction obey Michaelis-Menten kinetics
 - c. used to determine the values of the parameters appearing in a Michaelis-Menten kinetic expression
 - d. parabolic in shape with the concave side facing up
 - e. parabolic in shape with the concave side facing down
5. True or false? An enzyme is to a biological reaction as a homogeneous catalyst is to a chemical reaction.