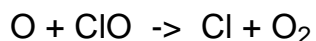
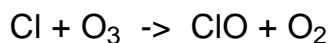


Kinetics : Quiz-80

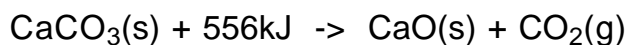
- 1) a) What is the basic premise of collision theory?
b) Give two other conditions that are necessary before a reaction will occur.

2) Give four ways to increase the reaction rate.

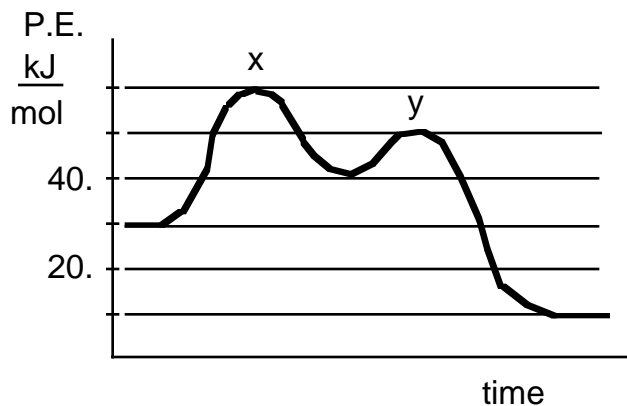
3) A reaction has the following two steps:



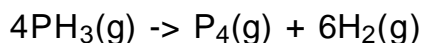
- a) Find the overall reaction. _____ .
b) The catalyst is _____ .
c) The reaction intermediate is _____ .
- 4) Answer the following questions given the reaction:



- a) Is the reaction exothermic or endothermic?
b) What is the best way to measure the rate at which this reaction proceeds?
- 5) A potential energy diagram for a reaction is shown below. Answer the following questions.



- a) Which step is the rate-determining step? (x or y)
 - b) What is ΔH ?
 - c) What is the activation energy for the forward reaction?
 - d) What is the potential energy of the reaction intermediate?
- 6) The rate of production of hydrogen gas in the reaction:



is 1.2×10^{-2} mol/sec. Find the rate at which phosphorous trihydride decomposes.

Answers: 1)a) Reactant particles must collide before a reaction can occur. b) The particles must also have enough energy and have the right orientation before a reaction will occur. 2) Increase temperature, increase concentration of reactants, increase the surface area of a reactant, or add a catalyst, 3)a) $\text{O} + \text{O}_3 \rightarrow 2\text{O}_2$, b) Cl, c) ClO, 4)a) endothermic, b) measure the rate of production of CO_2 gas, 5)a) x, b) -20. kJ/mol, c) +30. kJ/mol, d) +40. kJ/mol, 6) 8.0×10^{-3} mol/sec.