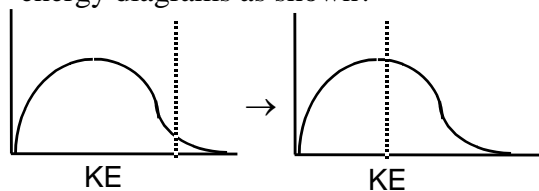


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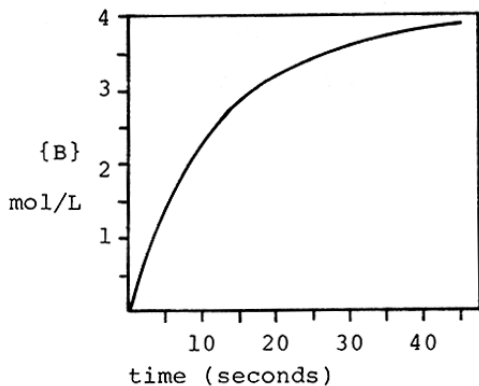
PRACTICE QUIZ

- Which of the following does NOT influence the speed of a chemical reaction?
 - concentration of reactants
 - nature of reactants
 - temperature
 - presence of a catalyst
 - none of these

- What would cause the change in the kinetic energy diagrams as shown?



- increasing the ΔH
 - decreasing the temperature
 - increasing the surface area
 - addition of a catalyst
 - increasing the concentration of reactant
- A time vs. concentration graph is presented below for the reaction $A \rightarrow B$. What is the rate of appearance of 'B' 20 seconds after the start of the reaction?



- 0.050 mol/L·s
- 3.2 mol/L·s
- 2.2 mol/L·s
- 0.010 mol/L·s
- 9.8 mol/L·s

- The reaction $3O_2 \rightarrow 2O_3$ is proceeding with a rate of disappearance of O_2 equal to 0.60 mol/L·s. What is the rate of appearance of O_3 , in mol/L·s?

- 0.60
- 0.40
- 0.10
- 0.90
- 1.20

- What is the rate constant for a first order reaction for which the half-life is 85.0 sec?

- 0.00814 sec⁻¹
- 4.44 sec⁻¹
- 0.170 sec⁻¹
- 0.0118 sec⁻¹
- 58.9 sec⁻¹

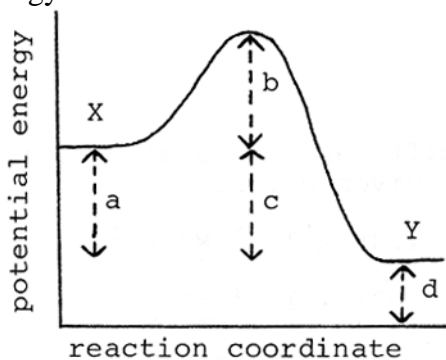
- What fraction of a reactant remains after 3 half-lives of a first order reaction?

- 1/2
- 1/3
- 1/6
- 1/8
- 1/12

- According to collision theory, which of the following factors does NOT influence the rate of reaction?

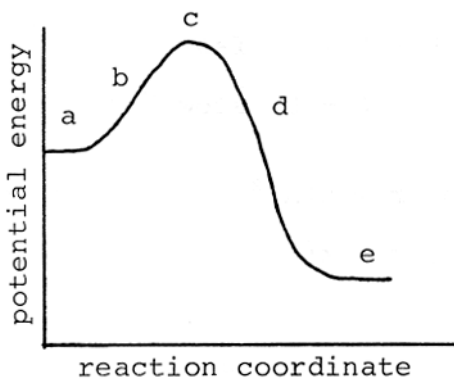
- collision frequency
- collision energy
- collision orientation
- collision rebound direction
- none of these

8. What distance corresponds to the activation energy for the reaction of X to Y?



- a) a d) d
 b) b e) e
 c) c

9. At what point on the potential energy diagram given below does the transition state (activated complex) occur?



- a) a d) d
 b) b e) e
 c) c

10. Which of the following is NOT true about a catalyst?

- a) it speeds up the forward reaction
 b) is acts as an inhibitor
 c) it speeds up the reverse reaction
 d) it may be homogeneous
 e) it may be heterogeneous

Answers: (please use **CAPITAL** letters)

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

Useful Formulae:

$$\ln \frac{[A]_o}{[A]_t} = kt$$

the special case of half-life

$$\ln(2) = 0.693 = kt_{1/2}$$