

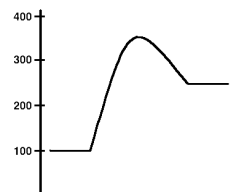
Name: \_\_\_\_\_

Date: \_\_\_\_\_

Quiz name: **Rate and Equilibrium**

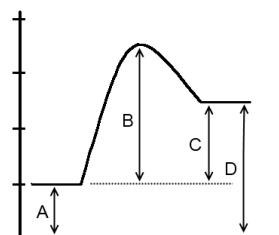
1. From this energy profile diagram, what is the value of the activation energy?.

- (A) 100
- (B) 200
- (C) 250
- (D) 350



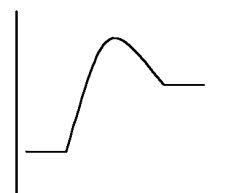
2. Which measurement on this energy profile diagram represents the enthalpy change?.

- (A) A
- (B) B
- (C) C
- (D) D



3. Which of the following statements about this energy profile diagram is true?.

- (A) The reaction is exothermic
- (B) The enthalpy change is negative
- (C) The x-axis represents time
- (D) This reaction makes the surroundings colder



4. Which of the following does not affect the frequency of collisions?.

- (A) Temperature
- (B) Pressure
- (C) Catalyst
- (D) Surface area
- (E) Concentration

5. Which of the following does not affect the productivity of collisions?.

- (A) Temperature
- (B) Catalyst
- (C) Enzymes
- (D) Concentration

6. Which of the following about enzymes is not true?.

- (A) They decrease the activation energy
- (B) They decrease the enthalpy change
- (C) They are biological catalysts
- (D) They provide an alternate reaction pathway

7. For which of the following sets of graph axes would slope represent rate of reaction?

- (A) "Enthalpy" against "Course of reaction"
  - (B) "Concentration" against "Time"
  - (C) "Yield" against "Temperature"
  - (D) "Kinetic energy" against "Temperature"
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8. Which of the following conditions is not required for dynamic equilibrium?

- (A) Closed system
  - (B) Fixed temperature
  - (C) Reversible reaction
  - (D) Equal amount of reactants and products
- 

9. If temperature is increased for an equilibrium system, the net reaction to oppose the change will:

- (A) Increase the temperature
  - (B) Decrease the temperature
  - (C) Absorb energy
  - (D) Release energy
- 

10. If temperature is increased for an exothermic reaction at equilibrium, the net reaction will be:

- (A) Forwards
  - (B) Backwards
  - (C) In the exothermic direction
  - (D) Zero
- 

11. If pressure is increased for an equilibrium system, the equilibrium position will shift in the direction that:

- (A) Increases the molecules of gas
  - (B) Decreases the molecules of gas
  - (C) Increases the number of total particles
  - (D) Decreases the number of total particles
- 

12. If reactant concentration is increased for an equilibrium system, the net reaction will favour:

- (A) The formation of reactants
  - (B) The formation of products
  - (C) The side with the least particles
  - (D) The side with the most particles
- 

13. If reactant concentration is decreased for an equilibrium system, the net reaction will be:

- (A) Forwards
  - (B) Backwards
  - (C) Left-to-right
  - (D) Zero
- 

14. If a reaction is at equilibrium, increasing the concentration of a reactant will:

- (A) Increase  $K_c$

- B Decrease  $K_c$
  - C Temporarily alter  $K_c$ , but it will return to the original value over time
  - D Not affect  $K_c$  at all
- 

15. If an endothermic reaction is at equilibrium, increasing the temperature will:

- A Increase  $K_c$
  - B Decrease  $K_c$
  - C Temporarily alter  $K_c$ , but it will return to the original value over time
  - D Not affect  $K_c$  at all
- 

16. An industrial reaction which is exothermic and has more reactant gas molecules than product gas molecules will have highest yield when:

- A Temperature is high and pressure is high
- B Temperature is high and pressure is low
- C Temperature is low and pressure is high
- D Temperature is low and pressure is low