CHEM 1310 General Chemistry: Kinetics

1. What is the rate of a reaction?

A. The speed of the reaction
B. The amount of reactant consumed in a given time
C. The amount of product formed in a given time
D. The change in concentration of a reactant or product over time

2. Which of the following is NOT a factor that affects the rate of a reaction?

A. The nature of the reactants
B. The concentration of the reactants
C. The temperature of the reactants
D. The amount of light present

3. Which of the following is NOT a unit of measurement for the rate of a reaction?

A. mol/L/s
B. m/s
C. mol/L/min
D. g/L/s

4. The rate of a reaction can be increased by _____.

A. Increasing the concentration of the reactants
B. Decreasing the concentration of the reactants
C. Increasing the temperature of the reactants
D. All of the above

5. The rate of a reaction can be decreased by _____.

A. Increasing the concentration of the reactants
B. Decreasing the concentration of the reactants
C. Increasing the temperature of the reactants
D. All of the above

6. The activation energy of a reaction is _____.

A. The minimum amount of energy needed for the reaction to occur
B. The amount of energy needed to break the bonds of the reactants
C. The amount of energy needed to form the bonds of the products
D. The difference in energy between the reactants and products

7. The activation energy of a reaction can be decreased by _____.

A. Increasing the concentration of the reactants
B. Decreasing the concentration of the reactants
C. Increasing the temperature of the reactants
D. All of the above

8. The activation energy of a reaction can be increased by _____.

A. Increasing the concentration of the reactants
B. Decreasing the concentration of the reactants
C. Increasing the temperature of the reactants
D. All of the above

9. The rate of a reaction is proportional to _____.

A. The concentration of the reactants
B. The square of the concentration of the reactants
C. The reciprocal of the concentration of the reactants
D. The square root of the concentration of the reactants

10. The rate constant of a reaction is _____.

A. The rate of the reaction
B. The concentration of the reactants
C. The square of the concentration of the reactants
D. The reciprocal of the concentration of the reactants

11. The half-life of a reaction is _____.

A. The time it takes for the concentration of the reactants to decrease by half
B. The time it takes for the concentration of the products to increase by half
C. The time it takes for the rate of the reaction to decrease by half
D. The time it takes for the rate constant of the reaction to decrease by half

12. The order of a reaction is _____.

A. The exponent of the concentration of a reactant in the rate equation
B. The exponent of the concentration of a product in the rate equation
C. The exponent of the rate constant in the rate equation
D. The exponent of the time in the rate equation

13. A zero order reaction is _____.

A. A reaction that is not affected by the concentration of the reactants
B. A reaction that is not affected by the concentration of the products
C. A reaction that is not affected by the temperature of the reactants
D. A reaction that is not affected by the time

14. A first order reaction is _____.

A. A reaction that is affected by the concentration of the reactants
B. A reaction that is affected by the concentration of the products
C. A reaction that is affected by the temperature of the reactants
D. A reaction that is affected by the time

15. A second order reaction is _____.

A. A reaction that is affected by the square of the concentration of the reactants
B. A reaction that is affected by the square of the concentration of the products
C. A reaction that is affected by the square of the temperature of the reactants
D. A reaction that is affected by the square of the time

16. The rate law of a reaction is _____.

A. The rate of the reaction
B. The concentration of the reactants
C. The order of the reaction
D. The rate constant of the reaction

17. The integrated rate law of a reaction is _____.

A. The rate of the reaction
B. The concentration of the reactants

C. The order of the reaction
D. The rate constant of the reaction

18. The rate constant of a first order reaction is _____.

A. The rate of the reaction
B. The concentration of the reactants
C. The order of the reaction
D. The rate constant of the reaction

19. The rate constant of a second order reaction is _____.

A. The rate of the reaction
B. The concentration of the reactants
C. The order of the reaction
D. The rate constant of the reaction

20. The half-life of a first order reaction is _____.

A. The time it takes for the concentration of the reactants to decrease by half
B. The time it takes for the concentration of the products to increase by half
C. The time it takes for the rate of the reaction to decrease by half
D. The time it takes for the rate constant of the reaction to decrease by half

21. The half-life of a second order reaction is _____.

A. The time it takes for the concentration of the reactants to decrease by half
B. The time it takes for the concentration of the products to increase by half
C. The time it takes for the rate of the reaction to decrease by half
D. The time it takes for the rate constant of the reaction to decrease by half

22. The order of a reaction can be determined by _____.

A. The rate law of the reaction
B. The integrated rate law of the reaction
C. The rate constant of the reaction
D. The half-life of the reaction

23. The rate constant of a reaction can be determined by _____.

A. The rate law of the reaction
B. The integrated rate law of the reaction
C. The order of the reaction
D. The half-life of the reaction

24. The half-life of a reaction can be determined by _____.

A. The rate law of the reaction
B. The integrated rate law of the reaction
C. The order of the reaction
D. The rate constant of the reaction

25. The rate of a reaction can be determined by _____.

A. The rate law of the reaction
B. The integrated rate law of the reaction
C. The order of the reaction
D. The rate constant of the reaction

1. D
2. D
3. B
4. D
5. D
6. A
7. D
8. D
9. A
10. D
11. A
12. A
13. A
14. A
15. A
16. D
17. B
18. D
19. D
20. D
21. D
22. A
23. D
24. D
25. A