Q1W6-Ch.- Chemical reactions and equations- Qs. Bank

True/False

Indicate whether the statement is true or false.

____ 1. Word equations use words to indicate reactants and products of chemical reactions.

____ 2. A piece of paper burns faster than pieces of shredded paper.

____ 3. If the temperature of the reactants is increased, the rate of the reaction will decrease.

Multiple Choice

Identify the choice that best completes the statement or answers the question.

____ 4. What type of reaction takes place when fluorine reacts with sodium bromide?
a. Single-displacement
b. Double-displacement
c. Combination
d. Decomposition

____ 5. What is the probable product of a double-displacement reaction?
a. A new compound and the replaced metal
b. A new compound and the replaced nonmetal
c. Two different compounds
d. A single compound

____ 6. Which of the following factors does not affect the rate of reaction?
a. The physical state of the reactants.
b. The amount of the reactants.
c. The size of the container used.
d. The temperature at which the reaction is carried out.

Completion

Complete each statement.

7. Forest fire releases energy in the form of _____ and _____.

8. A chemical reaction in which two or more substances react to produce a single product is called a(n) _____ reaction.

9. A chemical reaction in which oxygen combines with a substance and releases energy in the form of heat and light is called a(n) _____ reaction.

10. A reaction in which the atoms of one element replace the atoms of another element in a compound is called a(n) _____ reaction.

11. If the temperature at which a reaction occurs increases, the number of collisions _____.

Matching

Match each item with the correct statement below.

a. activation energy
b. catalyst
c. chemical reaction
d. coefficient
e. combustion
f. concentration
g. decomposition
h. enzymes
i. equilibrium
j. inhibitor
k. insoluble
l. product
m. reactant
n. single-displacement
o. soluble
p. synthesis

____ 12. The replacement of hydrogen from water by sodium is an example of a(n) _____ reaction.
____ 13. In order for a chemical reaction to take place, the particles involved must collide with a sufficient amount of _____.
____ 14. In order to balance a chemical equation, it may be necessary to add a(n) _____ before one or more of the symbols or formulas.
____ 15. A precipitate forms in a chemical reaction when a(n) _____ substance is formed during the reaction.
____ 16. _____ is a type of chemical reaction in which a substance combines rapidly with oxygen to form oxides.
____ 17. A chemical reaction is in a state of _____ when the rate of products being formed equals the rate of reactants being reformed.
____ 18. A(n) _____ is any substance that produces other substances in a chemical reaction.
____ 19. Chemists often add a(n) _____ to a reaction if they want to increase the rate at which the reaction is taking place.
____ 20. A(n) _____ reaction is one in which two or more substances combine to form a single product.
____ 21. The human body contains _____, which are catalysts that change the rates of biochemical reactions.
____ 22. Sugar is a(n) _____ substance because it dissolves in water.
____ 23. A chemical change is also known as a(n) _____.
____ 24. An example of a(n) _____ reaction is the electrolysis of water, in which an electric current breaks down water into two new substances.
____ 25. You can slow down a chemical reaction by adding a(n) _____ to the reaction.
____ 26. A term used to describe the amount of substance contained in a certain volume is _____.
____ 27. The carbon dioxide formed when coal burns is a(n) _____ of that reaction because it is formed as a result of the reaction.

Match each statement with the correct item below.

a. $2Na + Cl_2 \rightarrow 2NaCl$
b. burning of coal in oxygen
c. an amount of reactant present in a small enough amount to determine when the reaction will stop
d. NaCl in $2Na + Cl_2 \rightarrow 2NaCl$
e. substance that slows down a reaction
f. energy required to get a reaction started
g. $Cl_2 + 2NaBr \rightarrow Br_2 + 2NaCl$
h. the 2 in 2NaCl
i. substance that speeds up a reaction without being used up
j. any chemical change
k. $2KBr + Pb(NO_3)_2 \rightarrow 2KNO_3 + PbBr_2$
l. substance that appears as a precipitate
m. rate of $A + B \rightarrow AB$ equals rate of $AB \rightarrow A + B$
n. either Na or Cl_2 in $2Na + Cl_2 \rightarrow 2NaCl$

o. $Ca(OH)_2 \rightarrow CaO + 2H_2O$

____ 28. limiting reactant
____ 29. double displacement
____ 30. coefficient
____ 31. catalyst
____ 32. decomposition
____ 33. synthesis
____ 34. insoluble
____ 35. dynamic equilibrium
____ 36. product
____ 37. chemical reaction
____ 38. activation energy
____ 39. combustion
____ 40. reactant
____ 41. single displacement
____ 42. inhibitor

Short Answer

43. Define a chemical reaction.

44. Define reactants in a chemical reaction.

45. Define products in a chemical reaction.

46. Define a decomposition reaction.

47. Find the error in the equation and correct it so the equation is correctly balanced:
$Ca(s) + 2H_2O(l) \rightarrow CaOH_2(aq)$.

48. Find the error in the equation and correct it so the equation is correctly balanced:
$AlCl_3(aq) + NaOH(aq) \rightarrow NaCl_3(aq) + AlOH(s)$.

49. Find the error in the equation and correct it so the equation is correctly balanced:
$2HI(aq) + 2Pb(NO_3)_2(aq) \rightarrow PbI_2(s) + 2HNO_3(aq)$.

50. Find the error in the equation and correct it so the equation is correctly balanced:
$H_2SO_4(aq) + BaCl_2(aq) \rightarrow HCl(aq) + 2BaSO_4(s)$.

51. Wood can burn, but large piles of timber in a lumberyard do not catch fire on their own, even though they are surrounded by oxygen in the air. Why?

52. What feature of a chemical equation is used to make sure the equation obeys the law of conservation of mass?

53. Over time, a piece of magnesium metal will react with oxygen to form magnesium oxides, as shown by the following chemical equation: $2Mg + O_2 \rightarrow 2MgO$. Explain why this is or is not an example of combustion.

54. What property do all products of a combustion reaction have in common with each other?

55. In the reaction $3O_2(g)$ + energy $\leftrightarrows$ $2O_3(g)$, name three ways of increasing the amount of ozone (O_3) that is produced.

56. In the equation $2K(s) + 2H_2O(l) \rightarrow 2KOH(aq) + H_2(g)$, what is the physical state of each reactant and product?

57. Write a balanced chemical equation for the reaction described:
aluminum metal + hydrochloric acid $\rightarrow$ aluminum chloride solution + hydrogen.

58. Give one piece of evidence you expect to see that indicates that a chemical reaction is taking place in each of the following situations: photosynthesis occurs in a plant growing under water, biscuits are baked in an oven, a banana is left on a sunny windowsill for a week, and zinc metal displaces copper in a solution of copper(II) sulfate.

59. Balance the equation $Sr(s) + H_2O(l) \rightarrow Sr(OH)_2(aq) + H_2(g)$.

60. Classify the reaction, $NH_4HS(s) \rightarrow NH_3(g) + H_2S(g)$, as either decomposition, single displacement, combustion, synthesis, or double displacement.

61. In which of the five general types of reactions would you not expect an element to be a reactant?

62. Use a word equation to describe the chemical equation given, and classify the reaction as one of the five major types: $4P(s) + 5O_2(g) \rightarrow 2P_2O_5(s)$.

63. Lithium metal reacts with ammonia gas to form hydrogen gas and crystals of lithium amide, $LiNH_2$. Write a balanced chemical equation for this reaction, and classify the reaction as one of the five major types.

64. When an aqueous solution of lead(II) nitrate is combined with an aqueous solution of sodium sulfate, a white precipitate of lead(II) sulfate forms. Write word and balanced chemical equations for this reaction.

65. Sodium metal will combine with oxygen in dry air to form solid sodium oxide. Write a balanced chemical equation for this reaction. If 90 trillion sodium atoms and 30 trillion oxygen molecules are available to react, which is the limiting reactant?

66. Write a balanced chemical equation for the reversible reaction of carbon monoxide and chlorine gases to form carbonyl chloride gas, $COCl_2$. If more chlorine gas is added after the reaction reaches equilibrium, will the reaction be shifted to the left or to the right?

67. Will an endothermic reaction that is at equilibrium shift to the left or to the right to readjust after products are removed?

68. Will an endothermic reaction that is at equilibrium shift to the left or to the right to readjust after reactants are removed?

69. Carbon dioxide gas can be produced by reacting calcium carbonate and hydrochloric acid, as shown by the equation for the reaction:
$CaCO_3(s) + 2HCl(aq) \rightarrow CaCl_2(aq) + H_2O(l) + CO_2(g)$.
In a particular reaction, 1.0×10^{24} molecules of HCl were mixed with 7.5×10^{23} formula units of $CaCO_3$, which reactant is limiting?

70. Write a balanced equation for the combustion of cyclopentane liquid, C_5H_{10}. How many oxygen molecules will react with 35 trillion cyclopentane molecules?

71. Suppose that the activation energy for a certain exothermic reaction is 150 kilojoules, while the activation energy for another exothermic reaction is 30 kilojoules. Which of the two reactions is more likely to take place spontaneously under normal conditions? Explain.

72. Suppose that the reversible reaction represented by the equation $2SO_2(g) + O_2(g) \leftrightarrows 2SO_3(g)$ has come to equilibrium. If a catalyst is added to the equilibrium mixture, will the reaction shift to the left or to the right?

73. The unbalanced equation for the reaction between aqueous solutions of aluminum nitrate and sodium phosphate is as follows:
$Al(NO_3)_3(aq) + Na_3PO_4(aq) \rightarrow NaNO_3(aq) + AlPO_4(s)$. Balance the chemical equation.

74. Why are peanuts often packed in a partial vacuum?

75. The graph shown in Figure 6-2 represents the concentrations of three compounds, A, B, and C, as they take part in a reaction that reaches equilibrium. Which compound(s) represent the reactant(s) and product(s) in this reaction?

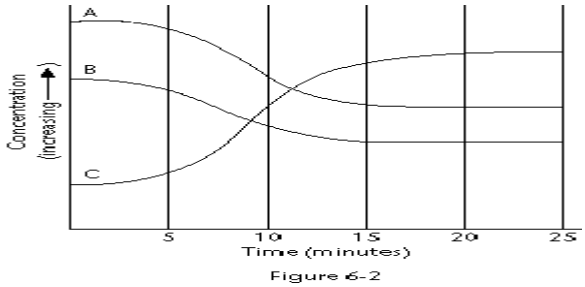

Figure 6-2

Problem

A series of eight test tubes is lined up on top of a laboratory bench. The contents of these test tubes are listed. The contents are exposed to O_2 in the air. Water or energy may be added to the contents, if necessary, for reaction to occur. Predict the type of chemical reaction that is most likely to take place in each of the eight test tubes. If no reaction will take place, explain why. Give a balanced chemical equation for each reaction that takes place.

76. calcium hydroxide:
77. zinc metal:
78. magnesium metal and iron(III) chloride:
79. mercury(II) oxide:
80. neon gas:
81. barium chloride and potassium sulfate:
82. sodium oxide:
83. propane (C_3H_8) gas:

Sulfur dioxide gas (SO_2) reacts with oxygen to form sulfur trioxide gas (SO_3). The graph in Figure 6-1 shows how the concentration of these three gases changes over time in an experiment in which first the concentration of only the sulfur dioxide is increased, and then the concentration of only the oxygen is increased. Answer the following questions relating to this graph.

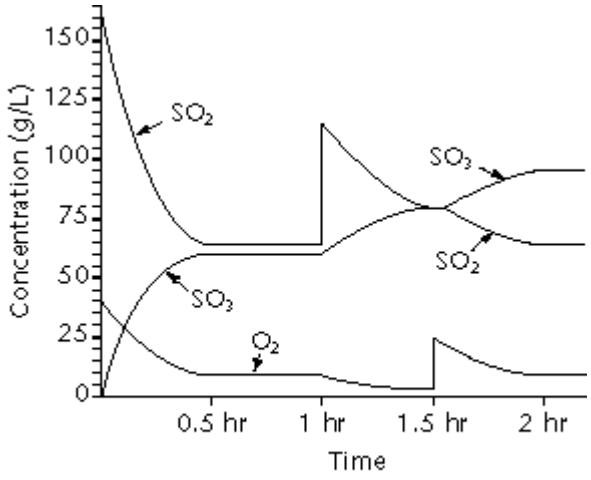

Figure 6-1

84. What are the approximate original concentrations of sulfur dioxide, sulfur trioxide, and oxygen?
85. At about what time did this reaction reach equilibrium?
86. What were the equilibrium concentrations of sulfur dioxide, sulfur trioxide, and oxygen at this time?
87. At approximately what time was the concentration of sulfur dioxide increased?
88. What were the approximate concentrations of sulfur dioxide, sulfur trioxide, and oxygen when the new equilibrium was reached?
89. At approximately what time was the concentration of oxygen increased?
90. What were the approximate concentrations of sulfur dioxide, sulfur trioxide, and oxygen when the next equilibrium was reached?

Q1W6-Ch.-Qs. Bank-Chemical reactions and equations
Answer Section

TRUE/FALSE

1. ANS: T
   Word equations use words or statements to indicate reactants and products.

   PTS: 1 DIF: 1 REF: Page 193
   OBJ: 6.1.2 Demonstrate how chemical equations describe chemical reactions.
   TOP: Demonstrate how chemical equations describe chemical reactions.
   KEY: Word equations MSC: 1
   NOT: /T/ Correct! /F/ Skeleton equations use chemical formulas to indicate reactants and products.
2. ANS: F
   Larger the surface area, faster is the rate of reaction. The surface area of a piece of paper is less than pieces of shredded paper of the same mass.

   PTS: 1 DIF: 1 REF: Page 219
   OBJ: 6.3.2 Classify factors that influence the rate of a reaction.
   TOP: Classify factors that influence the rate of a reaction. KEY: Rate of reaction | Surface area
   MSC: 1
   NOT: /T/ Pieces of shredded paper burn faster than a piece of paper of the same mass. /F/ Correct!
3. ANS: F
   If the temperature of the reactants is increased, the rate of the reaction will increase. Increasing the temperature increases the collisions between the reactants.

   PTS: 1 DIF: 1 REF: Page 219
   OBJ: 6.3.2 Classify factors that influence the rate of a reaction.
   TOP: Classify factors that influence the rate of a reaction.
   KEY: Factors affecting the rate of a reaction MSC: 2
   NOT: /T/ The rate of a reaction is directly proportional to the kinetic energy of the reactants, which increases with increasing collision of reactants. /F/ Correct!

MULTIPLE CHOICE

4. ANS: A
   As fluorine replaces only bromide ions from sodium bromide and forms sodium fluoride as the product, the reaction is a single-displacement reaction.

	Feedback
A	Correct!
B	Since only one ion of more reactive halogen fluorine replaces one ion of less reactive halogen bromine, it is a single ion displacement reaction.
C	Fluorine replaces bromine from its compound.
D	In a decomposition reaction, a single compound breaks into two or more elements or compounds.

   PTS: 1 DIF: 1 REF: Page 205

OBJ: 6.2.2 Classify a reaction as belonging to one of five major types.
TOP: Classify a reaction as belonging to one of five major types.
KEY: Displacement reaction MSC: 2

5. ANS: C
The probable products of a double-displacement reaction are two different compounds.

	Feedback
A	A single-displacement reaction between a metal and a compound results in a new compound and the replaced metal.
B	A new compound and the replaced nonmetal is formed in a single-displacement reaction between a nonmetal and a compound.
C	Correct!
D	A single compound is a product of a synthesis reaction.

PTS: 1 DIF: 1 REF: Page 208
OBJ: 6.2.1 Distinguish among the five major types of chemical reactions.
TOP: Distinguish among the five major types of chemical reactions.
KEY: Chemical reaction MSC: 1

6. ANS: C
The rate of a reaction is not affected by the size of the container.

	Feedback
A	The rate of a reaction is affected by the physical state of the reactants.
B	The amount of a substance affects the rate of a reaction.
C	Correct!
D	The rate of a reaction is affected by the temperature at which the reaction is carried out.

PTS: 1 DIF: 1 REF: Page 218 | Page 219 | Page 222
OBJ: 6.3.2 Classify factors that influence the rate of a reaction.
TOP: Classify factors that influence the rate of a reaction.
KEY: Factors affecting the rate of a reaction MSC: 1

COMPLETION

7. ANS:
heat, light
light, heat

PTS: 1 DIF: 1 REF: Page 190 | Page 191
OBJ: 6.1.1 Relate chemical changes and macroscopic properties.
TOP: Relate chemical changes and macroscopic properties. KEY: Chemical reaction
MSC: 1

8. ANS: synthesis

PTS: 1 DIF: 1 REF: Page 203
OBJ: 6.2.1 Distinguish among the five major types of chemical reactions.
TOP: Distinguish among the five major types of chemical reactions.
KEY: Synthesis reaction MSC: 1

9. ANS: combustion

PTS: 1 DIF: 1 REF: Page 209
OBJ: 6.2.1 Distinguish among the five major types of chemical reactions.
TOP: Distinguish among the five major types of chemical reactions.
KEY: Combustion MSC: 1

10. ANS: single-displacement

PTS: 1 DIF: 1 REF: Page 205
OBJ: 6.2.1 Distinguish among the five major types of chemical reactions.
TOP: Distinguish among the five major types of chemical reactions.
KEY: Single-displacement reaction MSC: 1

11. ANS: increases

PTS: 1 DIF: 1 REF: Page 219
OBJ: 6.3.2 Classify factors that influence the rate of a reaction.
TOP: Classify factors that influence the rate of a reaction. KEY: Rate of reaction | Temperature
MSC: 1

MATCHING

12. ANS: N PTS: 1 DIF: B OBJ: 6-5
13. ANS: A PTS: 1 DIF: B OBJ: 6-7
14. ANS: D PTS: 1 DIF: B OBJ: 6-3
15. ANS: K PTS: 1 DIF: B OBJ: 6-1
16. ANS: E PTS: 1 DIF: B OBJ: 6-5
17. ANS: I PTS: 1 DIF: B OBJ: 6-7
18. ANS: M PTS: 1 DIF: B OBJ: 6-2
19. ANS: B PTS: 1 DIF: B OBJ: 6-7
20. ANS: P PTS: 1 DIF: B OBJ: 6-5
21. ANS: H PTS: 1 DIF: B OBJ: 6-7
22. ANS: O PTS: 1 DIF: B OBJ: 6-1
23. ANS: C PTS: 1 DIF: B OBJ: 6-1
24. ANS: G PTS: 1 DIF: B OBJ: 6-5
25. ANS: J PTS: 1 DIF: B OBJ: 6-7
26. ANS: F PTS: 1 DIF: B OBJ: 6-1
27. ANS: L PTS: 1 DIF: B OBJ: 6-2

28. ANS: C PTS: 1 DIF: B OBJ: 6-6
29. ANS: K PTS: 1 DIF: B OBJ: 6-4
30. ANS: H PTS: 1 DIF: B OBJ: 6-3
31. ANS: I PTS: 1 DIF: B OBJ: 6-7
32. ANS: O PTS: 1 DIF: B OBJ: 6-4
33. ANS: A PTS: 1 DIF: B OBJ: 6-4
34. ANS: L PTS: 1 DIF: B OBJ: 6-1
35. ANS: M PTS: 1 DIF: B OBJ: 6-7
36. ANS: D PTS: 1 DIF: B OBJ: 6-2
37. ANS: J PTS: 1 DIF: B OBJ: 6-1
38. ANS: F PTS: 1 DIF: B OBJ: 6-7

39. ANS: B PTS: 1 DIF: B OBJ: 6-4
40. ANS: N PTS: 1 DIF: B OBJ: 6-2
41. ANS: G PTS: 1 DIF: B OBJ: 6-4
42. ANS: E PTS: 1 DIF: B OBJ: 6-7

SHORT ANSWER

43. ANS:
The process by which the atoms of one or more substances are rearranged to form different substances is called a chemical reaction.

PTS: 1 DIF: 1 REF: Page 190
OBJ: 6.1.1 Relate chemical changes and macroscopic properties.
TOP: Relate chemical changes and macroscopic properties. KEY: Chemical reaction
MSC: 1

44. ANS:
The starting substances of a chemical reaction are called reactants.

PTS: 1 DIF: 1 REF: Page 192
OBJ: 6.1.2 Demonstrate how chemical equations describe chemical reactions.
TOP: Demonstrate how chemical equations describe chemical reactions.
KEY: Chemical reaction MSC: 1

45. ANS:
The substances formed in a chemical reaction are called products.

PTS: 1 DIF: 1 REF: Page 192
OBJ: 6.1.2 Demonstrate how chemical equations describe chemical reactions.
TOP: Demonstrate how chemical equations describe chemical reactions.
KEY: Chemical reaction MSC: 1

46. ANS:
A chemical reaction in which a single compound breaks down into two or more elements or new compounds is called a decomposition reaction.

PTS: 1 DIF: 1 REF: Page 204
OBJ: 6.2.1 Distinguish among the five major types of chemical reactions.
TOP: Distinguish among the five major types of chemical reactions.
KEY: Decomposition reactions MSC: 1

47. ANS:
$Ca(s) + 2H_2O(l) \rightarrow Ca(OH)_2(aq)$

PTS: 1 DIF: B OBJ: 6-3

48. ANS:
$AlCl_3(aq) + 3NaOH(aq) \rightarrow 3NaCl(aq) + Al(OH)_3(s)$

PTS: 1 DIF: B OBJ: 6-3

49. ANS:
$2HI(aq) + Pb(NO_3)_2(aq) \rightarrow PbI_2(s) + 2HNO_3(aq)$

PTS: 1 DIF: B OBJ: 6-3

50. ANS:
$H_2SO_4(aq) + BaCl_2(aq) \rightarrow 2HCl(aq) + BaSO_4(s)$

PTS: 1 DIF: B OBJ: 6-3

51. ANS:
The wood and oxygen do not have enough energy to react with each other (they have less than the activation energy needed for a reaction to occur).

PTS: 1 DIF: B OBJ: 6-7

52. ANS:
Coefficients are used to make sure the same number of atoms are present on both sides of the equation.

PTS: 1 DIF: B OBJ: 6-3

53. ANS:
The term *combustion* is reserved for oxidation reactions that occur rapidly, with the evolution of heat and light.

PTS: 1 DIF: B OBJ: 6-7

54. ANS:
They are all oxides.

PTS: 1 DIF: B OBJ: 6-4

55. ANS:
Answers may include: increase the temperature, increase the concentration of diatomic oxygen, or remove the ozone as it is formed.

PTS: 1 DIF: B OBJ: 6-6

56. ANS:
K: solid, H_2O: liquid, KOH: dissolved in water, H_2: gas

PTS: 1 DIF: B OBJ: 6-2

57. ANS:
$2Al(s) + 6HCl(aq) \rightarrow 2AlCl_3(aq) + 3H_2(g)$

PTS: 1 DIF: B OBJ: 6-3

58. ANS:
Oxygen bubbles are slowly released; the biscuits rise, change color, and release an odor; the banana turns brown; and copper metal forms on the zinc metal, and the blue color of the solution fades.

PTS: 1 DIF: B OBJ: 6-1

59. ANS:
$Sr(s) + 2H_2O(l) \rightarrow Sr(OH)_2(aq) + H_2(g)$

PTS: 1 DIF: B OBJ: 6-3

60. ANS:
decomposition

PTS: 1 DIF: B OBJ: 6-5

61. ANS:

decomposition, double displacement

PTS: 1 DIF: B OBJ: 6-4

62. ANS:
phosphorus + oxygen → diphosphorus pentoxide; synthesis or combustion

PTS: 1 DIF: B OBJ: 6-5

63. ANS:
$2Li(s) + 2NH_3(g) \rightarrow 2LiNH_2(s) + H_2(g)$; single displacement

PTS: 1 DIF: B OBJ: 6-2

64. ANS:
lead(II) nitrate + sodium sulfate → sodium nitrate + lead(II) sulfate.
$Pb(NO_3)_2(aq) + Na_2SO_4(aq) \rightarrow 2NaNO_3(aq) + PbSO_4(s)$.

PTS: 1 DIF: B OBJ: 6-3

65. ANS:
$4Na(s) + O_2(g) \rightarrow 2Na_2O(s)$
Sodium is limiting, since 120 trillion sodium atoms are needed to react with all the oxygen.

PTS: 1 DIF: B OBJ: 6-7

66. ANS:
$CO(g) + Cl_2(g) \leftrightarrows COCl_2(g)$, to the right

PTS: 1 DIF: B OBJ: 6-3

67. ANS:
to the right

PTS: 1 DIF: B OBJ: 6-6

68. ANS:
to the left

PTS: 1 DIF: B OBJ: 6-6

69. ANS:
HCl, because only 5.0×10^{23} $CaCO_3$ formula units will react with all of the HCl.

PTS: 1 DIF: B OBJ: 6-2

70. ANS:
$2C_5H_{10}(l) + 15O_2(g) \rightarrow 10CO_2(g) + 10H_2O(g)$
(35 trillion) × 15/2 = 260 trillion O_2 molecules

PTS: 1 DIF: B OBJ: 6-3

71. ANS:
The reaction with an activation energy of 30 kilojoules is more likely to be spontaneous, since the reactants do not need to collide with as much energy in order to react.

PTS: 1 DIF: B OBJ: 6-7

72. ANS:
A catalyst does not change the position of equilibrium, so no shift occurs.

PTS: 1 DIF: B OBJ: 6-6

73. ANS:
$Al(NO_3)_3(aq) + Na_3PO_4(aq) \rightarrow 3NaNO_3(aq) + AlPO_4(s)$

PTS: 1 DIF: A OBJ: 6-1

74. ANS:
Removing most of the air reduces the concentration of gas particles, particularly oxygen, that may react with the peanuts. This helps to preserve the peanuts.

PTS: 1 DIF: B OBJ: 6-7

75. ANS:
A and B are reactants; C is the product.

PTS: 1 DIF: A OBJ: 6-7

PROBLEM

76. ANS:
Decomposition will occur with heating. $Ca(OH)_2 + \text{energy} \rightarrow CaO + H_2O$

PTS: 1 DIF: A OBJ: 6-5

77. ANS:
Synthesis (with oxygen) will occur with heating. $2Zn + O_2 \rightarrow 2ZnO$

PTS: 1 DIF: A OBJ: 6-5

78. ANS:
Single displacement will occur if the iron(III) chloride is in solution. $3Mg + 2FeCl_3 \rightarrow 3MgCl_2 + 2Fe$

PTS: 1 DIF: A OBJ: 6-5

79. ANS:
Decomposition will occur if sufficient heat is available. $2HgO \rightarrow 2Hg + O_2$

PTS: 1 DIF: A OBJ: 6-5

80. ANS:
Neon is an inert gas that will not take part in a chemical reaction.

PTS: 1 DIF: A OBJ: 6-5

81. ANS:
Double displacement will occur if both compounds are in solution. $BaCl_2 + K_2SO_4 \rightarrow BaSO_4 + 2KCl$

PTS: 1 DIF: A OBJ: 6-5

82. ANS:
Synthesis will occur if water is added. $Na_2O + H_2O \rightarrow 2NaOH$

PTS: 1 DIF: A OBJ: 6-5

83. ANS:
Combustion will occur if heat is provided. $C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$

PTS: 1 DIF: A OBJ: 6-5

84. ANS:
160 g/L; 0 g/L; 40 g/L

PTS: 1 DIF: A OBJ: 6-1

85. ANS:
30 minutes

PTS: 1 DIF: B OBJ: 6-7

86. ANS:
64 g/L; 60 g/L; 8 g/L

PTS: 1 DIF: A OBJ: 6-6

87. ANS:
about 1 hour

PTS: 1 DIF: B OBJ: 6-7

88. ANS:
80 g/L; 80 g/L; 3.2 g/L

PTS: 1 DIF: A OBJ: 6-6

89. ANS:
about 1 hour 30 minutes

PTS: 1 DIF: B OBJ: 6-7

90. ANS:
64 g/L; 100 g/L; 8 g/L

PTS: 1 DIF: A OBJ: 6-6