## Unit 9 Review Quiz: Accel Chem

1. Which of the following is NOT a solution?
a. air
c. orange juice with pulp
b. brass
d. lemonade
2. A solution is made by dissolving salt in a beaker of water. The salt is referred to as the...
a. solution
c. solvent
b. solute
d. dissolver
3. When KCl is dissolved in water, the following will be produced:
a. $\mathrm{K}+\mathrm{Cl}$
b. $\mathrm{K}+\mathrm{Cl}_{2}$
c. $\mathrm{K}^{+}+\mathrm{Cl}_{2}^{-}$
d. $\mathrm{K}^{+}+\mathrm{Cl}^{-}$
4. What is the mass percent of an aqueous solution containing 15 g of KCl in 500 mL of water?
a. $0.7 \%$
c. 0.04\%
b. $3 \%$
d. 40.5\%
5. What is the molarity of solution that contains 1.5 moles in 2.5 L of solution?
a. $\quad 3.75 \mathrm{M}$
b. 0.6 m
c. $\quad 1.67 \mathrm{M}$
d. 0.6 M
6. A solution containing the maximum amount of dissolved solute is...
a. unsaturated
c. super saturated
b. saturated
d. none of the above
7. A student adds one crystal to a solution and observes additional crystals forming. This solution is...
a. unsaturated
c. supersaturated
b. saturated
d. a chemical reaction
8. Which of the following will increase the solubility of a gas in water?
a. increasing the temperature
c. increasing the volume
b. increasing the pressure
d. decreasing the pressure
9. How many moles of NaCl will be needed to make 500 mL of a 2.0 M aqueous solution?
a. 4 mol
b. $\quad 1.0 \mathrm{~mol}$
c. $\quad 0.017 \mathrm{~mol}$
d. 0.25 mol
10. What is the molality of a solution containing 0.5 moles of solute in 500 g of water?
a. 1 M
b. 1 m
c. $\quad 0.001 \mathrm{M}$
d. 0.001 m
11. A $40 \%$ alcohol solution contains...
a. 40 mL of alcohol in 100 mL of water
b. 100 mL of alcohol in 40 mL of water
c. $\quad 60 \mathrm{~mL}$ of alcohol in 100 mL of water
d. 40 mL of alcohol in 60 mL of water
12. How much 12 M HCl is needed to prepare 500 mL of 0.5 M solution of HCl ?
a. $\quad 20.8 \mathrm{~mL}$
b. $\quad 229.2 \mathrm{~mL}$
c. $\quad 250 \mathrm{~mL}$
d. 270.8 mL
13. Which of the following is a colligative property?
a. heating of a solvent
b. allowing a carbonated beverage to warm to room temperature
c. adding to salt into the water that pasta is being cooked in
d. pouring a concentrated solution into a dilute solution
14. Water is known as...
a. the oddity of molecules
c. the great dissolver
b. the universal solvent
d. the molecule of living things
15. Which of the following molecules are polar?
a. $\mathrm{CF}_{4}$
b. $\mathrm{CO}_{2}$
c. $\mathrm{PCl}_{3}$
d. $\mathrm{PH}_{3}$
16. Which of the following compounds is most likely to dissolve in water?
a. $\mathrm{CH}_{4}$
b. $\mathrm{CaCl}_{2}$
c. $\mathrm{I}_{2}$
d. $\mathrm{C}_{12} \mathrm{H}_{22} \mathrm{O}_{11}$
17. Which of the following would lower the freezing point of water the most?
a. $\mathrm{NaC}_{2} \mathrm{H}_{3} \mathrm{O}_{2}$
b. $\mathrm{Sr}(\mathrm{OH})_{2}$
c. $\mathrm{C}_{6} \mathrm{H}_{12} \mathrm{O}_{6}$
d. NaCl
18. What volume of solution is needed to make a 1.0 M solution from 116 grams of NaCl ?
a. $\quad 0.116 \mathrm{~L}$
b. 2.0 L
c. $\quad 0.0086 \mathrm{~L}$
d. $\quad 116 \mathrm{~mL}$


Use the phase diagram on the right to answer questions 21-22.
21. What is the normal boiling point for the substance represented in the phase diagram?
a. $30^{\circ} \mathrm{C}$
b. $1.0^{\circ} \mathrm{C}$
c. $100^{\circ} \mathrm{C}$
d. $80^{\circ} \mathrm{C}$
22. What is point A called on the graph?
a. freezing point
b. melting point
c. sublimation
d. triple point
23. What is the freezing point of an aqueous solution containing . 05 moles of $\mathrm{Na}_{2} \mathrm{SO}_{4}$ in 100 grams of solution? ( $\mathrm{Kf}=$ $1.86^{\circ} \mathrm{C} / \mathrm{m}$ )
a. $\quad 2.79^{\circ} \mathrm{C}$
b. $1.86^{\circ} \mathrm{C}$
c. $-2.79^{\circ} \mathrm{C}$
d. $-1.86^{\circ} \mathrm{C}$
24. Which of the following is an electrolyte?
a. sodium chloride
c. sugar
b. pure water
d. glass

