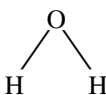
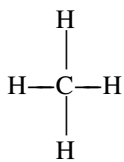
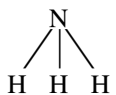


Solubility Practice 2

Name: _____

Date: _____

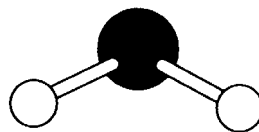
- Which solution will freeze at the *lowest* temperature?
 - 1 mole of sugar in 500 g of water
 - 1 mole of sugar in 1,000 g of water
 - 2 moles of sugar in 500 g of water
 - 2 moles of sugar in 1,000 g of water
- Which solution would have the *lowest* freezing point?
 - 1 mole of NaCl dissolved in 500 g of water
 - 1 mole of NaCl dissolved in 1,000 g of water
 - 0.5 mole of NaCl dissolved in 500 g of water
 - 0.5 mole of NaCl dissolved in 1,000 g of water
- When 2.00 moles of sugar ($C_6H_{12}O_6$) are dissolved in 1.000 grams of water, the boiling point of the resulting solution is closest to
 - 99.0° C
 - 99.5° C
 - 100° C
 - 101° C
- Which of the following solutions, each containing a nonvolatile solute, will boil at the highest temperature?
 - 1 mole of electrolyte dissolved in 1000 g of H_2O
 - 2 moles of electrolyte dissolved in 1000 g of H_2O
 - 1 mole of nonelectrolyte dissolved in 1000 g of H_2O
 - 2 moles of nonelectrolyte dissolved in 1000 g of H_2O
- Compared to the normal freezing point and boiling point of water, a 1-molar solution of sugar in water will have a
 - higher freezing point and a lower boiling point
 - higher freezing point and a higher boiling point
 - lower freezing point and a lower boiling point
 - lower freezing point and a higher boiling point
- When ethylene glycol (an antifreeze) is added to water, the boiling point of the water
 - decreases, and the freezing point decreases
 - decreases, and the freezing point increases
 - increases, and the freezing point decreases
 - increases, and the freezing point increases
- Which compound decreases in solubility as the temperature of the solution is increased from 10° C to 50° C?
 - NH_4Cl
 - NaCl
 - NH_3
 - $NaNO_3$
- What is the maximum number of grams of NH_4Cl that will dissolve in 200 grams of water at 70° C?
 - 60
 - 70
 - 100
 - 120

9. Which compound shows the *least* increase in solubility in water from 50°C to 60°C ?
- A. KCl B. NaCl
C. KNO_3 D. NaNO_3
10. A solution containing 55 grams of NH_4Cl in 100 grams of water is saturated at a temperature of
- A. 47°C B. 57°C C. 67°C D. 77°C
11. As 1 gram of sodium hydroxide dissolves in 100 grams of water, the conductivity of the solution
- A. decreases B. increases
C. remains the same
12. When sodium chloride is dissolved in water, the resulting solution is classified as a
- A. heterogeneous compound
B. homogeneous compound
C. heterogeneous mixture
D. homogeneous mixture
13. How many grams of KCL must be dissolved in 200 grams of water to make a saturated solution at 60°C ?
- A. 30 g B. 45 g C. 56 g D. 90 g
14. According to Reference Table G, which solution is saturated at 30°C ?
- A. 12 grams of KClO_3 in 100 grams of water
B. 12 grams of KClO_3 in 200 grams of water
C. 30 grams of NaCl in 100 grams of water
D. 30 grams of NaCl in 200 grams of water
15. At STP, which of these substances is most soluble in H_2O ?
- A. CCl_4 B. CO_2 C. HCl D. N_2
16. Which formula represents a polar molecule containing polar covalent bonds?
- A. H_2O B. CO_2 C. NaCl D. Cl_2
17. Which structural formula represents a nonpolar symmetrical molecule?
- A.  B. 
- C. $\text{H}-\text{F}$ D. 
18. When two atoms form a chemical bond by sharing electrons, the resulting molecule will be
- A. polar, only
B. nonpolar, only
C. either polar or nonpolar
D. neither polar nor nonpolar

19. The attraction between water molecules and a Na^+ ion or a Cl^- ion occurs because water molecules are

- A. linear
- B. symmetrical
- C. polar
- D. nonpolar

20. The diagram represents a water molecule. This molecule is best described as



- A. polar with polar covalent bonds
- B. polar with nonpolar covalent bonds
- C. nonpolar with polar covalent bonds
- D. nonpolar with nonpolar covalent bonds

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1.
Answer: C
2.
Answer: A
3.
Answer: D
4.
Answer: B
5.
Answer: D
6.
Answer: C
7.
Answer: C
8.
Answer: D
9.
Answer: B
10.
Answer: B
11.
Answer: B
12.
Answer: D
13.
Answer: D
14.
Answer: A
15.
Answer: C
16.
Answer: A
17.
Answer: B
18.
Answer: C
19.
Answer: C
20.
Answer: A