Unit 8: Solutions Practice quiz

Answer Questions #1-4 based on the statement given below.

A 200 mL solution of iced tea is sweetened by adding 3 moles of sucrose ($C_{12}H_{22}O_{11}$).

1.) A _____ mixture was created.
   (heterogeneous or homogeneous?)

2.) Which substance is the solute? _____
                                      (sucrose or H_2O?)

3.) Determine the *molarity* of the sucrose and water solution. Make sure to:
   - Give the correct equation to use
   - Show correct substitution into the equation
   - Solve for the answer with correct units

4.) How many grams is 3.0 moles of $C_{12}H_{22}O_{11}$?

5.) Is $C_{12}H_{22}O_{11}$ an electrolyte? If so is it an acid, base, or salt? How do you know?

6.) When $Mg(SO_4)$ is mixed with water, does it dissolve? _____(yes or no)?
   a) How many magnesium ions will form? _____ ...# of sulfate ions? _____

   b) What is the charge on a magnesium ion? _____ ... on a sulfate ion? _____

   c) Write the dissociation equation representing the dissolving of $Mg(SO_4)$:

7.) a.) Is $Mg(SO_4)$ an electrolyte? How do you know?

   b.) If it IS an electrolyte, is it an acid, base, or salt?   _____

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For Questions #8-9: a.) Write the chemical formula.
b.) Determine if the compound is soluble or insoluble
c.) Write the dissociation equation if the compound is soluble.

8.) Barium hydroxide
    a.)

    b.)

    c.)

9.) Calcium Phosphate
    a.)

    b.)

    c.)

10.) Is magnesium sulfate or barium hydroxide a better electrolyte? How do you know?

11.) In terms of particle attractions, why is a soluble substance able to dissolve in water?

12.) Complete each equation by writing the two products formed. **Balance** and **include phases.**

    a.) ___ $Sr(SO_4)$ (aq) + ___ $Pb(NO_3)_2$ (aq) → ___ _____ (__) + ___ _____ (__)

    b.) ___ $CuCl_2$ (aq) + ___ $Ag(NO_3)$ (aq) → ___ _____ (__) + ___ _____ (__)