

# Solutions

## Section Quiz: The Solution Process

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- \_\_\_\_\_ 1. Two immiscible substances are
- water and ammonia.
  - water and ethanol.
  - carbon tetrachloride and benzene.
  - benzene and water.
- \_\_\_\_\_ 2. A substance that is *not* soluble in a polar solvent is most likely
- nonpolar.
  - ionic.
  - polar.
  - hydrogen bonded.
- \_\_\_\_\_ 3. Sugar is soluble in water because sugar molecules are
- massive.
  - large.
  - nonpolar.
  - polar.
- \_\_\_\_\_ 4. Which of the following actions does *not*, in general, increase the solubility of a solid in a liquid?
- increasing the temperature of the solvent
  - increasing the surface area of the solute
  - increasing the pressure of the solution
  - shaking or stirring the solution
- \_\_\_\_\_ 5. A solubility table shows that almost all compounds of Group 1 metals are soluble in water. This general rule tells you that
- KI is soluble.
  - RbNO<sub>3</sub> is insoluble.
  - CaCl<sub>2</sub> is soluble.
  - CO<sub>2</sub> is soluble.

**Section Quiz, *continued***

- \_\_\_\_\_ 6. If the amount of dissolved solute in a solution at a given temperature is greater than the amount that can permanently remain in solution at that temperature, the solution is said to be
- saturated.
  - unsaturated.
  - supersaturated.
  - diluted.
- \_\_\_\_\_ 7. All of the KBr that will dissolve in a solution has dissolved, and several undissolved crystals remain on the bottom of the beaker. The solution is
- saturated.
  - supersaturated.
  - unsaturated.
  - at the incorrect pressure to dissolve the solid.
- \_\_\_\_\_ 8. How can you best increase the solubility of a gas in a liquid?
- Increase both the temperature and the pressure.
  - Decrease both the temperature and the pressure.
  - Increase the temperature and decrease the pressure.
  - Decrease the temperature and increase the pressure.
- \_\_\_\_\_ 9. The enthalpy of solution for solid  $\text{AgNO}_3$  is positive. What does this tell you about the formation of a  $\text{AgNO}_3$  solution?
- $\text{AgNO}_3$  will not form a solution.
  - Energy is released during the solution process.
  - $\text{AgNO}_3$  will dissolve only under high pressure.
  - Energy is absorbed during the solution process.
- \_\_\_\_\_ 10. Which statement correctly represents the equilibrium between gas molecules entering and leaving the liquid phase of a solution?
- gas + solution  $\rightleftharpoons$  solvent
  - gas + solvent  $\rightarrow$  solution
  - gas  $\leftarrow$  solvent + solution
  - gas + solvent  $\rightleftharpoons$  solution