RQ Polar or Nonpolar

Name: _____ **Date:** _____

1. Which of the following statements *best* explains why ionic solids dissolve in water?

   A. Water has high surface tension.

   B. Water is a highly polar molecule.

   C. Water is more dense as a liquid than as a solid.

   D. Water has a higher boiling point than predicted by its molar mass.

2. How are the bonds formed in a polar covalent compound?

   A. Electrons are shared unequally.

   B. Electrons are shared equally.

   C. Electrons are gained.

   D. Electrons are lost.

3. Which of the following molecules has a nonpolar covalent bond?

   A. H – Br B. H – Cl

   C. H – F D. H – H

4. Which of the following statements explains why the bond in hydrogen chloride (HCl) is polar covalent?

   A. The atomic mass of chlorine is greater than that of hydrogen.

   B. The chlorine atom is a lot larger than the hydrogen atom, so electrons tend to stay around the chlorine atom more than the hydrogen atom.

   C. The magnetic charge of a chlorine atom is greater than that of a hydrogen atom.

   D. The number of valence electrons in a chlorine atom is greater than that in a hydrogen atom.

5. How are the bonds formed in a nonpolar covalent compound?

   A. Electrons are shared unequally.

   B. Electrons are shared equally.

   C. Electrons are gained.

   D. Electrons are lost.

6. How is soap and grease similar?

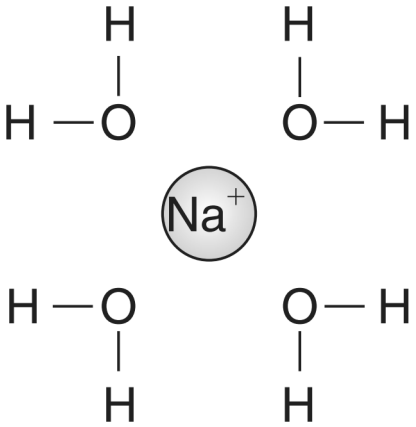
   A. They both have polar ends that hate water

   B. They both have nonpolar ends that like water

   C. They both have a polar end that likes water and a nonpolar end that hates water

   D. None of the above

7. The diagram below represents a sodium ion surrounded by several water molecules.



   This diagram can be used to represent which of the following?

   A. how sodium ions dissolve in water

   B. how sodium is neutralized by water

   C. how sodium metal makes bubbles in water

   D. how sodium ions precipitate out as a solid in aqueous solution

8. A substance dissolves well in water but not in benzene. Which of the following can be concluded about the substance?

   A. The substance may be either polar or nonpolar.

   B. The substance is nonpolar.

   C. The substance is polar.

   D. The substance is neither polar nor nonpolar.

9. Why is potassium chloride able to dissolve in water?

   A. because potassium ions are attracted to the partial negative charge of hydrogen

   B. because potassium ions are attracted to the partial positive charge of hydrogen

   C. because potassium ions are attracted to the partial negative charge of oxygen

   D. because potassium ions are attracted to the partial positive charge of oxygen

10. When salt (NaCl) is dissolving in water (H_2O), what happens to the attraction between the salt ions and the oxygen atoms of the water?

   A. The chlorine ion is attracted to the partial negative charge of the oxygen atoms.

   B. The chlorine ion is attracted to the partial positive charge of the oxygen atoms.

   C. The sodium ion is attracted to the partial negative charge of the oxygen atoms.

   D. The sodium ion is attracted to the partial positive charge of the oxygen atoms.