

Assessment

States of Matter**Section Quiz: Water**

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

- _____ 1. What is the approximate angle between two hydrogen-oxygen bonds in water?
- a. 90°
 - b. 102°
 - c. 105°
 - d. 120°
- _____ 2. The bond between oxygen and hydrogen in a water molecule is
- a. ionic.
 - b. hydrogen.
 - c. polar-covalent.
 - d. dipole-dipole.
- _____ 3. The molecular geometry of a water molecule is
- a. linear.
 - b. bent.
 - c. trigonal planar.
 - d. triangular.
- _____ 4. Liquid water forms molecular groups. How many molecules of water are there in each group?
- a. one to two
 - b. two to four
 - c. three to six
 - d. four to eight
- _____ 5. If water molecules were not linked by hydrogen bonds to form groups in liquid water, what would be the physical state of water at room temperature?
- a. solid
 - b. liquid
 - c. gas
 - d. a mixture of liquid and gas

Section Quiz, *continued*

- _____ 6. What is the reason for the relatively low density of ice?
- a. empty spaces between molecules
 - b. the high number of hydrogen bonds
 - c. the small size of hydrogen and oxygen atoms
 - d. the low molar mass of water
- _____ 7. Compared with nonpolar substances of comparable molecular mass, water's molar enthalpy of vaporization is
- a. higher.
 - b. lower.
 - c. similar.
 - d. equal.
- _____ 8. Water's relatively high boiling point is the result of
- a. covalent bonding.
 - b. hydrogen bonding.
 - c. ionic bonding.
 - d. London forces.
- _____ 9. The molar enthalpy of fusion of ice is
- a. equal to the enthalpy of many other solids.
 - b. approximately the same as the enthalpy of many other solids.
 - c. larger than the enthalpy of many other solids.
 - d. smaller than the enthalpy of many other solids.
- _____ 10. Compared with the boiling point of nonpolar substances of comparable molar mass at 1 atm, the boiling point of water at 1 atm is
- a. higher.
 - b. lower.
 - c. equal.
 - d. approximately the same.