

## Ionic Bonding, Compounds, and Naming

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. Which compound is formed from a tight network of oppositely charged ions?
- sugar,  $C_{12}H_{22}O_{11}$
  - quartz,  $SiO_2$
  - water,  $H_2O$
  - salt,  $NaCl$
- \_\_\_\_\_ 2. Often atoms join so that each atom will have
- an even number of electrons.
  - an outermost energy level that is full of electrons.
  - an equal number of protons and electrons.
  - more electrons than either protons or neutrons.
- \_\_\_\_\_ 3. The bonds that hold atoms together behave most like
- snap-together blocks.
  - glue.
  - rubber cement.
  - flexible springs.
- \_\_\_\_\_ 4. An ionic bond is a bond that forms between
- ions with opposite charges.
  - atoms with neutral charges.
  - one atom's nucleus and another atom's electrons.
  - the electrons of two different atoms.
- \_\_\_\_\_ 5.  $Fe_2O_3$  is named *iron (III) oxide* because it contains
- three oxygen atoms.
  - $Fe^{3+}$  ions.
  - three iron atoms.
  - $O^{3+}$  ions.
- \_\_\_\_\_ 6. When nickel combines with fluorine to form nickel (III) fluoride, the charge of the nickel ion is
- $Ni^{1+}$ .
  - $Ni^{2+}$ .
  - $Ni^{3+}$ .
  - $Ni^{4+}$ .
- \_\_\_\_\_ 7. The name for the compound with the formula  $Cr_2O_3$  would be written as
- chromium(I) oxide.
  - chromium(II) oxide.
  - chromium oxygen.
  - chromium(III) oxide.
- \_\_\_\_\_ 8. Atoms sometimes form bonds to
- lose energy.
  - become more stable.
  - give away neutrons.
  - give away protons.
- \_\_\_\_\_ 9. Sodium has one electron in its outer shell and chlorine has seven electrons in its outer shell. The atoms will form a(n) \_\_\_\_\_ bond by \_\_\_\_\_ their electrons.
- covalent, transferring
  - covalent, sharing
  - ionic, transferring
  - ionic, sharing
- \_\_\_\_\_ 10. An ionic compound of calcium and chlorine would be named
- calcium chlorine.
  - calcium chlorite.
  - calcium chloride.
  - chlorine calcium.
- \_\_\_\_\_ 11. An ionic compound made of copper ( $Cu^{2+}$ ) and oxygen would be named
- copper oxygen.
  - copper oxide.
  - dicopper oxide.
  - copper(II) oxide.

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- ## Completion

19. The charge of each iron ion in the ionic compound  $\text{FeS}$  is \_\_\_\_\_.
20. The chemical formula for the ionic compound consisting of nitride ions and titanium(III) ions is \_\_\_\_\_.
21. Formula units of salt,  $\text{NaCl}$ , contain equal numbers of \_\_\_\_\_ and \_\_\_\_\_.
22. In ionic compounds, the positively charged ions are formed from \_\_\_\_\_ elements.
23. A compound consisting of  $\text{Br}^-$  and  $\text{Cd}^{2+}$  ions would be named \_\_\_\_\_.