Answers to questions in page 198 and page 216.

11. HF is the most polar, followed by HCl, then HBr, and finally HI.
12. Yes, two fluorine atoms can equally share a pair of electrons to form a nonpolar covalent bond.
13. For single bonds, the smaller the electronegativity difference, the weaker the bond.
14. Cs—Br has the highest ionic character because the electronegativity difference is higher than that of H—S (nonpolar covalent bond) and Si—Cl (polar covalent bond).

length.

15. a. ionic
    b. polar covalent
    c. nonpolar covalent
    d. polar covalent
    e. polar covalent
    f. nonpolar covalent
    g. nonpolar covalent
    h. ionic
16. The bonding electrons are found in a molecular orbital that is formed by the overlap of two atomic orbitals.
17. The attractive and repulsive forces balance.
18. from least to most polar: I—Cl, H—Br, H—F
19. The electronegativity difference between the two atoms determines the bond's electron distribution. The more electronegative atom holds electrons more closely than the less electronegative atom.