

Topics/concepts covered on post-test:

intramolecular forces

intermolecular forces

polarity of bonds

electronegativity

boiling point/melting point

polarity of molecules

redox

oxidation

reduction

half-reactions

balancing equations

Practice problems:

- How are intermolecular forces and intramolecular forces different? Include an example of each. _____

- What makes a bond polar? _____

- List the three types of intermolecular forces. _____

- Which would have a higher melting point, a chemical with dispersion or a chemical with hydrogen bonding? Explain your answer. _____

- Describe dipole-dipole interaction. _____

- Describe hydrogen bonding. _____

- Use an electronegativity table (from the reading assignment or textbook) to decide if the following bonds are ionic, polar covalent, or nonpolar covalent:

| | Electronegativity Difference | Type of Bond | If polar, show partial charges |
|------------|------------------------------|----------------|--------------------------------|
| ex> C - O | 1.0 | polar covalent | δ^+ C—O δ^- |
| a) F - S | _____ | _____ | |
| b) Li - Cl | _____ | _____ | |
| c) I - I | _____ | _____ | |

- Describe dispersion. _____

9. (a) What is the name of the symbol δ ? _____
 (b) What does it mean in chemistry? _____
 (c) When is it used in chemistry? _____

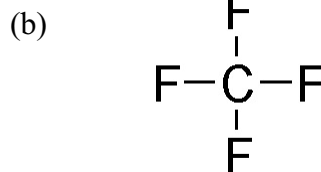
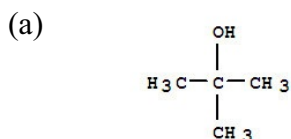
10. Which would have a higher boiling point, a solid or a gas? _____

11. Draw the structures of the following molecules and decide if they are polar or nonpolar:

(a) carbon dioxide (b) heptane

(c) water (d) cyclobutane

12. Look at the following structures. Decide if they are polar or nonpolar:



13. What type of intermolecular forces would the following molecules have?

(a) H_2 _____ (c) H_2S _____
 (b) HCl _____ (d) HF _____

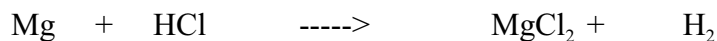
14. Balance the following reaction equation:



- (a) Assign each atom a charge
 (b) List which two elements change charge during the reaction: _____
 (c) Write and balance the half-reactions for those elements:

 (d) What element undergoes oxidation? _____
 (e) What element undergoes reduction? _____

15. Balance the following reaction equation:



Write and balance the half-reactions. Which element is oxidized? Which is reduced?