Intermolecular Forces Name:_____ Period: _____

1. List the intermolecular forces in order of increasing strength.

2. Which of the following compounds can form dipole-dipole forces: Cl_2, CO, NO, CH_4
3. Why are dipole-dipole forces stronger than dispersion forces for molecules of comparable mass?

4. Which of the molecules listed below can form hydrogen bonds? Give reasons for your answers.
    a. H_2
    b. NH_3
    c. HCl
    d. HF
    e. H_2O
    f. NaF
    g. NO
    h. H_2O_2
    i. CH_4
    j. F_2
5. Which of the molecules listed below would dispersion forces be the only intermolecular force? Give reasons for your answers.
    a. H_2
    b. NH_3
    c. HCl
    d. HF
    e. CBr_4
    f. SiO_2
6. Explain the difference between a temporary dipole and a permanent dipole.

7. Use intermolecular forces to explain why oxygen is a gas at room temperature and water is a liquid.

8. List the following in order of increasing boiling point: H_2, RbCl, NH_3

9. Which of the following will have a higher melting point?
    a. NaI or CH_4
    b. O_2 or H_2S
    c. SCl_2 or NH_3
10. Which of the following has a higher boiling point? CF_4, CCl_4, CBr_4 Why?