Name _____ Period _____

Intermolecular Forces Homework

1) What is a dipole moment?

2) What happens to the forces between two charges as the distance between them is increased?

3) Distinguish between intermolecular and intramolecular forces.

4) Name the three intermolecular forces.

5) What causes London Dispersion Forces?

6) What causes a dipole-dipole force?

7) a)Name all the elements that can give rise to hydrogen bonding?

b) Which one needs to be present every time?

8) Draw the structural formula for H_2O and show why the molecule has a dipole moment.

9) Why is water a liquid at room temperature?

10) a) Draw the structural formula for CH_4. b) Are the bonds polar covalent? Show them.
c) Does the molecule have a dipole moment? Show it

11) a) Draw the structural formula for SF_4. b) Are the bonds polar covalent? Show them.
c) Does the molecule have a dipole moment? Show it

12) a) Draw the structural formula for NH_3. b) Are the bonds polar covalent? Show them.
c) Does the molecule have a dipole moment? Show it

13) a) Draw the structural formula for H_2. b) Are the bonds polar covalent? Show them.
c) Does the molecule have a dipole moment? Show it

14) a) Draw the structural formula for CO_2. b) Are the bonds polar covalent? Show them.
c) Does the molecule have a dipole moment? Show it

15) Identify all the molecular forces that would be present in the following species.
Fill in the empty box with a “yes” or “no”.

	London Forces	Dipole-Dipole	Hydrogen Bonding
H_2			
HCl			
H_2O			
NH_3			
HF			
NaF			