AP Chem - Unit 7

WKSt: Intermolecular Force Worksheet

1. Draw the following substances. Then, identify **the strongest** intermolecular force present in pure samples of the following substances:

SO_2 H_2O CH_2Cl_2

SCO PCl_3 SO_3

2. Identify the strongest intermolecular force operating in the condensed phases of the following substances. Fully explain how you determined this.

a. Cl_2	b. CO
c. SO_2	d. CH_2Cl_2
e. HF Hydrogen bonding forces	g. CH_3-O-CH_3

3. Based on the intermolecular forces present, predict the relative boiling points of each of the substances below. Arrange each series of substances in order of increasing boiling point. State your reasons for the order you use (identify the forces and explain how they affect the boiling point).

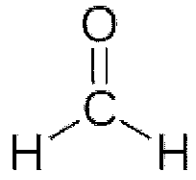
a. dimethyl ether (CH_3OCH_3), ethanol (CH_3CH_2OH), and propane ($CH_3CH_2CH_3$)

b. Br_2, Cl_2, I_2

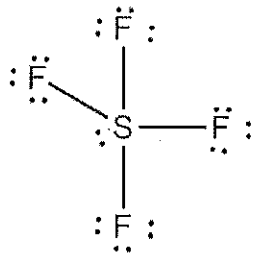
ces are present. London dispersion forces get

4. Circle ***all*** of the intermolecular forces that exist between molecules for the following samples:

A. water:
B. methane (CH_4):
C. CH_2O:



D. SF_4:



E. CH_2F_2:

5. Rank the following substances in terms of increasing boiling points: water, CH_2O, methane, CO_2