General Chemistry II
Problem Set 5
Due Friday, October 15, 2004

1. (8 points) Classify the eight species from Problem Set 4, #1 and #2 ((a) PF_3; (b) TeH_2; (c) PF_6^-; (d) ClO_2^-; (e) GeH_4; (f) AsF_3; (g) PCl_4^+; (h) SF_2) as polar or nonpolar. You need not justify your answers.

2. (15 points) Atkins and Jones Exercise 3.46

3. (12 points) Atkins and Jones Exercise 3.48

4. (6 points) Atkins and Jones Exercise 3.52

5. (10 points) Atkins and Jones Exercise 3.56

Revision to Course Syllabus

10/8	F	**PS 4**	370	Molecular Orbital Theory (3.9-3.12)
10/11	M	Meet with	370	(Molecular Orbital Theory continued)
10/12	Tu	Writing		
10/13	W	Assistant	370	(Molecular Orbital Theory continued)
10/14	Th	**Exp 4**	370	Hybridization (3.4-3.8; 3:13)
10/15	F	**PS 5**	341	**Exp 5:** Visualizing Molecular Orbitals
10/18	M		370	(Hybridization continued)
10/19	Tu	**Exp 3-Final**		
10/20	W		370	Intermolecular Forces (skim 4.17; 5.1-5.5)
10/21	Th	**Exp 5**	347	**Exp 6:** Reaction of Al/Zn with HCl **(with report)**
10/22	F	**PS 6**	370	(Intermolecular Forces continued)

I have decided to expand our coverage of chemical structure. Specifically, I want to apply hybridization concepts to organic molecules. This will help prepare you for Organic Chemistry I next fall. To make time for this, I will be skipping our in-class coverage of gases (Chapter 4). All of you have already done calculations in high school using the ideal gas law, and you will be reviewing this material as we do Experiment 6 and start talking about thermodynamics (Chapter 6).