

**General Chemistry II****Problem Set 2**

(on the second half of Chapter 1 of Atkins and Jones)

**Due Wednesday, September 22, 2004 (at 5 p.m.)**

1. Exercise 1.62 (5 points). Note that for each of the electron configurations, the  $3d$  subshell is filled. You should briefly justify your choice for the ground state.
2. (5 points) What is the ground-state electron configuration expected for each of the following elements: (a) sulfur; (b) cesium; (c) polonium; (d) molybdenum; (e) rhenium; (f) vanadium?
3. Exercise 1.70 (5 points)
4. Exercise 1.74 (5 points). Justify each of your answers with an orbital diagram showing the valence electron configuration.
5. Exercise 1.82 (5 points). Briefly explain your answers.
6. Exercise 1.84 (5 points). Briefly explain your answers.
7. Exercise 1.102 (5 points). Hint: Your answer should involve a discussion of orbital energy.