Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Atomic Theory Review**

1. Draw s, px, py, and pz orbitals:

2. What does an orbital represent?

3. On the periodic table, where is the ‘s block’? ‘p block’? ‘d block’? ‘f block’?

4. How many s orbitals are there? p orbitals? d orbitals? f orbitals?

5. Give the electron configurations (NOT core notation) for each:

Be:

N:

Mn:

6. Give core notation for each:

Al:

F:

Zr:

Cr:

Au:

Es:

Cs:

7. Give core notation for each:

Ca2+

Cu2+:

N3-:

Mn2+:

S2-:

Ag+:

8. a) What is the electron configuration ending for the halogens?

b) How many valence electrons does each halogen have?

c) What is the common ion charge for a halogen and why?

9) Why are noble gases unreactive?

10) Why does Ni make a Ni2+ ion?

11) Give the symbols for and explain the four quantum numbers. Why do we have them?

12) How many valence electrons do each of the following have:

A) Li B) C C) Sn 4) Cr3+ 5) S2- 6) Al 7) Pd4+

13) Define ionization energy:

Which of the following have the highest ionization energy? Li, Al, F, I Why?

14) Which of the following have the smallest atomic radius? Na, K, Cl, Br Why?

15) Define electronegativity:

Which has the highest electronegativity? Li, Fr, F, I Why?