**Chemistry I**

**Test 2- Review Problems**

1. **Tell whether the following elements are 1) representative, transition, or inner transition elements; and 2) metals, nonmetals, or semimetals**

Representative, transition or inner trans. Metal, nonmetal, or semimetal

**Sr**

**Sb**

**Lu**

**Cu**

**S**

**Al**

**H**

**Kr**

**Ga**

**Cd**

2. A) Calculate the average atomic mass of Boron if the percent abundance of 10B is 19.78% and 11B is

 80.22%.

1. Calculate the average atomic mass for Copper using the following data:

Copper-63 69.09%

Copper-65 30.91%

1. Complete the table for the following ions:

Symbol Atomic # Mass # Protons Neutrons Electrons Name

A) Sr+2 88

B) 83 209 80

C) 7 14 10

D) Cs+1 131

E) 14 29 10

F) 17 18 18

G) B+3 12

H) 8 15 10

1. Write unabbreviated electron configurations for the following:
2. Co
3. Br
4. Xe
5. Ba
6. Au
7. Write abbreviated electron configurations for the following:
8. Cu
9. Pb
10. Ra
11. Sn
12. Lu
13. Draw orbital diagrams for the following:
14. Si
15. Kr
16. Mo
17. Sn
18. Cl
19. Draw electron dot structures for the following:
20. Ge
21. O
22. P
23. Li
24. Write orbital diagrams for neutral atoms of the following. Then write the orbital diagram for the stable ion. What noble gas does this show similarity to?
25. N atom N ion Noble gas?
26. Ca atom Ca ion Noble gas?
27. Arrange the following elements in order of decreasing atomic size:
28. Cl, F, At, Br, I
29. Ga, Ge, Ca, K, Br, Kr, As, Se
30. Arrange the following elements in order of increasing ionization energy and electronegativity:
31. Cl, F, At, Br, I
32. Ga, Ge, Ca, K, Br, As, Se