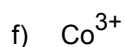
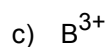
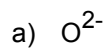


Part A: Electron Configuration

1) Write the ground state electron configuration for the following ions. Remember that ions have a change in the total number of electrons (positive have lost electrons and negative have gained).

**Part B: Atomic Size, Ionization Energy, and Electronegativity**

2) Atomic Size

a) Which element has the largest atomic radius?

Al Si P S Cl

b) Which element has the smallest radius?

K Na Rb Mg Cl

3) Ionization Energy

a) Which element has the lowest first ionization energy?

F Cl Br I At

b) Which element has the highest first ionization energy?

Li Cs Cl I Ar

4) Electronegativity

a) Which element has the lowest electronegativity?

H Li Na K Cs

b) Which element has the highest electronegativity?

Li N K As Ba

Part C: Oxidation States

5) List the most common (most stable oxidation states for the following transition metals)

a) Sc

b) Ti

c) Mn

d) Ni

e) Cu

f) Z

Part D: Coordination Compounds

6) Complete the following with the correct words from the word bank below:

Word Bank	
coordination	cookie
compounds ligands	yummy cookie
counterions	complex ion

A _____ contains a central metal ion bound to one or more ligands.

_____ is a Lewis base (or electron donor) that forms a bond with the metal.

When a complex ion combine with one or more _____ (ions of opposite charge that are not acting as ligands). The resulting neutral compound is called a

_____.

Coordinate Covalent Bonds

7) Ligands that donate only one electron pair to the central metal are called

_____. Provide an example

8) Ligands that have the ability to donate two pairs of electrons (from two different atoms)

to the metal; these are called _____. Provide an example.

Part E: Naming Coordination Compounds

9) Name the following coordination compounds:

