1. Write the electronic configurations for the following species. You may use the noble gas shortcut notation if you wish.

Se
Tl
Ba
Mg$^{2+}$
Pt

2. Give an example of five species (ions and/or atoms) that are isoelectronic.

3. Write the electronic configuration for the following species. You may use the noble gas shortcut notation if you wish.

In
Se$^{2-}$
Os
Ba$^{2+}$
At

4. a. The elements of which group on the periodic table have electron configurations which end in ns$^2$np$^3$ where n could be 2, 3, 4, 5, or 6.

b. What would be the charge on the ions formed by the nonmetallic members of the above group in the periodic table?

c. The nonmetallic ions (given the symbol N here) of the above named group would react with the alkaline earth elements (given the symbol M here) to form compounds of which general formula: MN, M$_2$N, MN$_2$, M$_2$N$_3$, M$_3$N$_2$, M$_3$N, or MN$_3$?
5. The actual electron configuration for Mo is [Kr]5s^14d^5. Give the expected electron configuration based on the standard filling of electrons into orbitals and describe why the actual electron configuration of Mo is different than the expected.

6. Element 114 was recently discovered and seems to have interesting properties compared to some of its neighboring synthetic elements. What would you predict for the electron configuration of element 114?

7. Write electron configurations for the following species. You may use the noble gas shortcut notation if you wish.

   As

   Ba^{2+}

   Fe

   Se^{2-}

   Os

8. Write the electron configurations for the following species. You may use the noble shortcut notation if you wish.

   Te

   Ba^{2+}

   Os

   Se^{2-}

   I
9. Write the electronic configurations for the following species. You may use the noble gas shortcut method if you wish.

Hf
As
Te^{2-}
Sr^{2+}
Sm