

Chemistry 1020  
Electron configurations worksheet

Write the full electron configurations for the following neutral atoms:

1. Ne  $1s^2 2s^2 2p^6$
2. Co  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^7$
3. P  $1s^2 2s^2 2p^6 3s^2 3p^3$
4. C  $1s^2 2s^2 2p^2$
5. Se  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^4$
6. Ag  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^9$

Write the full electron configuration for the following ions and indicate whether the ions are stable or unstable.

7.  $\text{Be}^+$   $1s^2 2s^1$  Not a full valence shell = unstable ion
8.  $\text{Be}^{2+}$   $1s^2 = [\text{He}]$  = stable ion
9.  $\text{O}^{2+}$   $1s^2 2s^2 2p^2 =$  unstable ion
10.  $\text{O}^{2-}$   $1s^2 2s^2 2p^6 = [\text{Ne}]$  = stable ion
11.  $\text{Al}^{3+}$   $1s^2 2s^2 2p^6 = [\text{Ne}]$  = stable ion
12.  $\text{Al}^{3-}$   $1s^2 2s^2 2p^6 3s^2 3p^4 =$  unstable ion
13.  $\text{K}^+$   $1s^2 2s^2 2p^6 3s^2 3p^6 = [\text{Ar}]$  = stable ion
14.  $\text{K}^-$   $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 =$  unstable ion