

Electron Configuration

Practice Sheet # 10

1. Fill in the following blanks:

1. The principle quantum number describes the _____ level of an orbital and is given the letter designation _____. The higher the principle quantum number, the _____ the energy level of the orbital and the _____ the size of the orbital.
2. The angular momentum number describes the _____ of an orbital. Each shape is given a letter designation. There are four letter designations for orbitals: _____, _____, _____ and _____.
3. The magnetic quantum number gives the _____ of the orbital. For "s" orbitals there is _____ orientation, for the "p" orbitals there are _____ orientations, for the "d" orbitals there are _____ orientations, and for "f" orbitals there are _____ orientations. Each different orientation is shown as a "dash" in the orbital notation diagram to represent the number of subshells for that orbital.
4. The spin quantum number gives the spin of an _____. There are two different values for the spin quantum number: _____ or _____. A positive spin quantum number is represented as an arrow pointing _____ and a negative spin quantum number is represented as an arrow pointing _____. Each subshell or an orbital can hold _____ electrons of opposite sign.
5. Electrons fill up orbitals by occupying the _____ energy level available.
6. Orbitals of equal energy are each occupied by _____ electron, with each electron having the _____ spin, before they are _____ with electrons having the _____ spin.
7. Each type of orbital can hold a maximum number of electrons: s orbital can hold up to _____ electrons, p orbitals can hold up to _____ electrons, d orbitals can hold up to _____ electrons, and f orbitals can hold up to _____ electrons.

2. Complete the following table:

Element	<i>Symbol and # Electrons</i>	<i>Orbital Notation</i>	<i>Electron Configuration Notation</i>
Hydrogen			
Helium			
Lithium			
Beryllium			
Boron			
Carbon			

Name: _____ Per _____

Nitrogen			
Oxygen			
Fluorine			
Neon			
Sodium			
Magnesium			

3. Give the electronic configuration notation and the noble gas notation for the following elements:

Element	Electron Configuration Notation	Noble Gas Configuration
Be		
F		
Na		
P		
Ti		

4. Give the Electron configuration and the noble gas notation for the following IONS!

Element	Electron Configuration Notation	Noble Gas Configuration
Rb⁺		
Ca²⁺		
I⁻		
N³⁻		
Li⁺		