SI Worksheet

4-21-22

Agenda:

Electron Configuration Bingo OR Worksheet

1. What are the allowed values for each of the four quantum numbers: *n, l, ml, ms*? AND what does each mean?

n:

l:

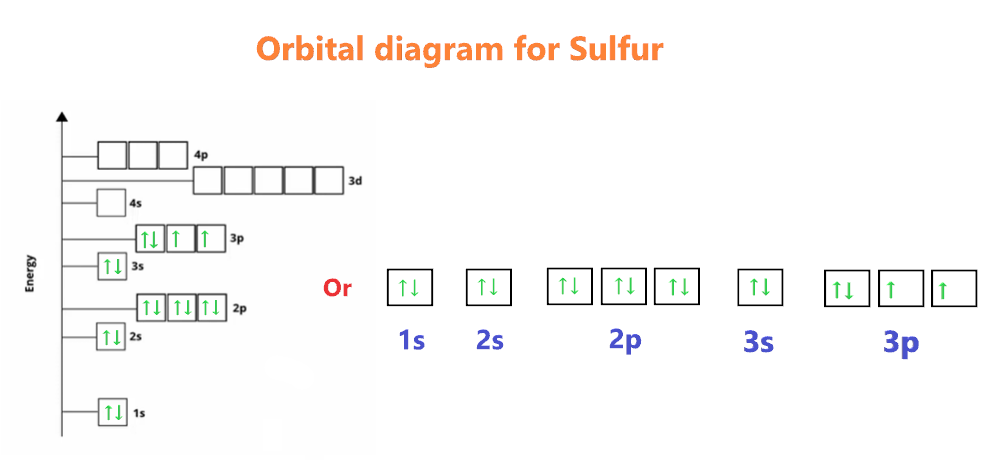
ml:

ms:

1. Identify the subshell in which electrons with the following quantum numbers are found:
   1. n=2, l=1
   2. n = 4, l= 2
   3. n=6, l=0
2. Fill in the table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Orbital | n | l | ml | # of orbitals |
| 4f |  |  |  |  |
| 3s |  |  |  |  |
|  | 3 | 2 |  |  |
|  | 5 |  |  | 3 |
|  | 6 | 3 |  |  |

1. Write the four quantum numbers of the circled electron below.



1. Draw the box diagram and electron configuration for each of the following elements.

|  |  |  |
| --- | --- | --- |
| Element | Box Diagram | Electron Configuration |
| Boron |  |  |
| Lithium |  |  |
| Oxygen |  |  |
| Phosphorus |  |  |
| Chlorine |  |  |
| Potassium |  |  |
| Aluminum |  |  |

1. Write the electron configuration of each transition metal, then the electron configuration of the ion of the transition metal.

|  |  |
| --- | --- |
| Transition Metal Ion | Electron Configuration |
| Zn2+ |  |
| Fe3+ |  |
| Cr3+ |  |