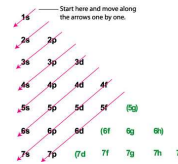


Electron Configuration Part I



A. Ground State Electron Configuration

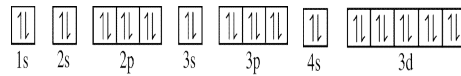
- Ground state: lowest possible energy state for electrons. Fills up electrons according to the rules.



Orbital Diagram → Electron Configuration



Try this one



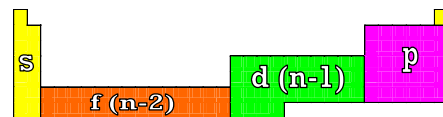
What element is this? $30 e^- = \text{Zn}$

B. Electron config from P-table

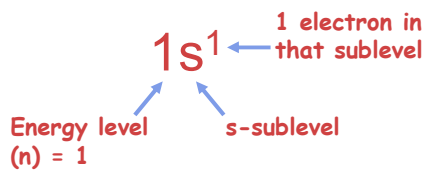
Color your periodic table

$n=1$	s												p		1s
2	1s		$d(n-1)$										2p		
3	2s												3p		
4	3s												4p		
5	4s												5p		
6	5s												6p		
7	6s												7p		
													7d		
													7f		
													8f		
													9f		

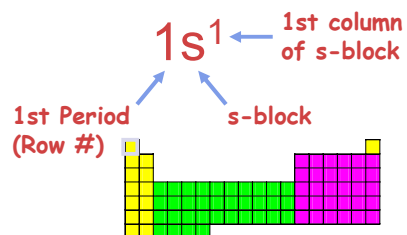
B. Electron config from P-table



Meaning:

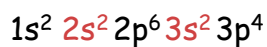
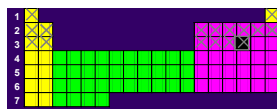


On Periodic Table:

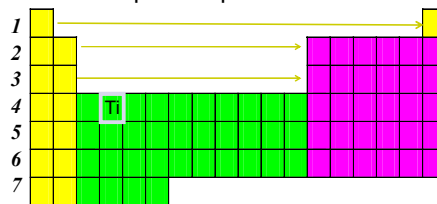
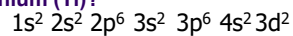


B. Electron Configuration From the Periodic Table

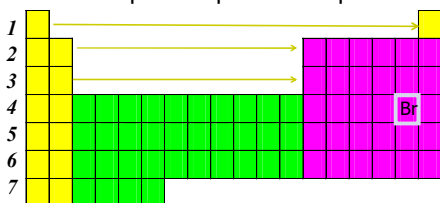
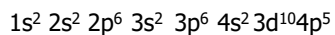
- Example: S



What is the electron configuration for Titanium (Ti)?



What is the electron configuration for Br?



Electron Configuration → Orbital Diagram

Shape	# orbitals
s	1
p	3
d	5
f	7

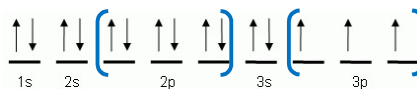
1. Write the Electron configuration using the periodic table
2. Make boxes for each sublevel (ex: $2s^2$). The number of boxes depends on the shape (s, p, d, or f – see table)
3. Add electrons according to aufbau, Hund's, and Pauli

Electron Configuration → Orbital Diagram

Shape	# orbitals	Ti: $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^2$
s	1	$\uparrow\downarrow$
p	3	$\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$
d	5	$\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$
f	7	

$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow\downarrow$	\uparrow	\uparrow				
1s	2s	2p	3s	3p	4s	3d		

If you insist...



Electron Configuration Practice (You Try)

- Electron configuration & orbital diagram
 - Phosphorus (P)
 - Aluminum (Al)

Electron Configuration Practice (You Try)

- Phosphorus (P): $1s^2 2s^2 2p^6 3s^2 3p^3$
- Aluminum (Al): $1s^2 2s^2 2p^6 3s^2 3p^1$