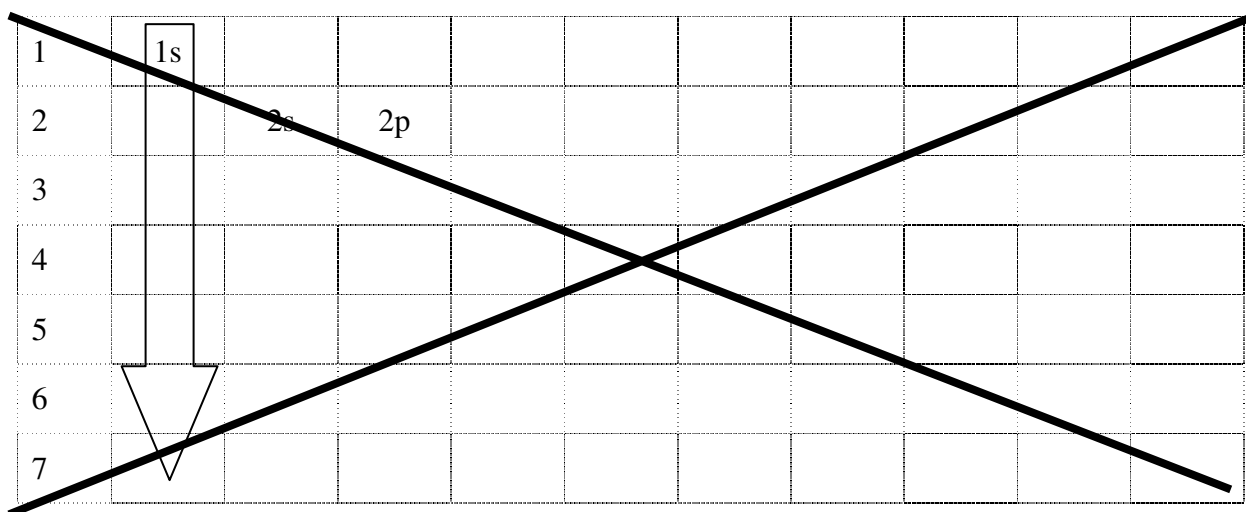


Electron Configuration and Quantum Mechanics

1. What are the four symbols for the Quantum numbers and what do they represent?

2. Complete the electron filling diagram:



3. Draw the Box Orbital Diagram for the following ground state elements:

Element	# of e ⁻	Orbital Diagram			
Lithium	3	1s <input type="checkbox"/>	2s <input type="checkbox"/>	2p <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3s <input type="checkbox"/>
Carbon	6	1s <input type="checkbox"/>	2s <input type="checkbox"/>	2p <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3s <input type="checkbox"/>
Neon	10	1s <input type="checkbox"/>	2s <input type="checkbox"/>	2p <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3s <input type="checkbox"/>
Sodium	11	1s <input type="checkbox"/>	2s <input type="checkbox"/>	2p <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3s <input type="checkbox"/>

4. Sometimes, circles are used instead of boxes:

Element	# of e ⁻	Orbital Diagram			
Lithium	3	1s 	2s 	2p 	3s
Carbon	6	1s 	2s 	2p 	3s
Neon	10	1s 	2s 	2p 	3s
Sodium	11	1s 	2s 	2p 	3s

5. More typically, we will simply write out the electron configuration using notation. Complete the following:

Element	# of e ⁻	Configuration
Oxygen	8	1s ² 2s ² 2p ⁴
Magnesium	12	
Titanium	22	

6. We can also see common ions using this notation:

Element	# of e ⁻	Configuration
Neon	10	1s ² 2s ² 2p ⁶
Na ⁺		
F ⁻		
O ²⁻		