

CHEM-01A
Work Session 7: Electron configuration and Chemical Periodicity

Name _____

Date _____

Grade _____

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- What are the values of n and l for electrons in the following orbitals?

5s
4d
3p
6p
6f
7f
- There are three 2p orbitals. Sketch each one on a separate xyz set of Cartesian coordinates.
- If there were 3 electrons in these 2p orbitals, what would the set of 4 quantum numbers for each electron be? Write the set of quantum number under each set of coordinates from question 2.

- If a 4th electron went into the 2p orbitals, what would its set of quantum numbers be? Where would it go in the #2 sketches?
- _____

1s
2s
2p
3s
3p
4s
3d
4p
5s
4d
5p
6s

Explain how the above diagram corresponds with the energy level diagram in the text. Why are there 3 places for the p orbitals and 5 places for the d orbitals shown on the above diagram? What would the next set of orbitals that appears after the 6s be? How many places would be shown for this set?

- Fill in electrons for elements H through Ba using arrows pointing up or down in the following lines. Fill in all the arrows; do not use shorthand notations. Put the symbol for the element on the left, along with its atomic number:

_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
1s	2s	2p	3s	3p	4s	3d	4p	5s	4d	5p	6s		
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
1s	2s	2p	3s	3p	4s	3d	4p	5s	4d	5p	6s		
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
1s	2s	2p	3s	3p	4s	3d	4p	5s	4d	5p	6s		
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
1s	2s	2p	3s	3p	4s	3d	4p	5s	4d	5p	6s		
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
1s	2s	2p	3s	3p	4s	3d	4p	5s	4d	5p	6s		

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1s 2s 2p 3s 3p 4s 3d 4p 5s 4d 5p 6s

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[illegible]

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Oops! One of your arrows is crooked. Start over.

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