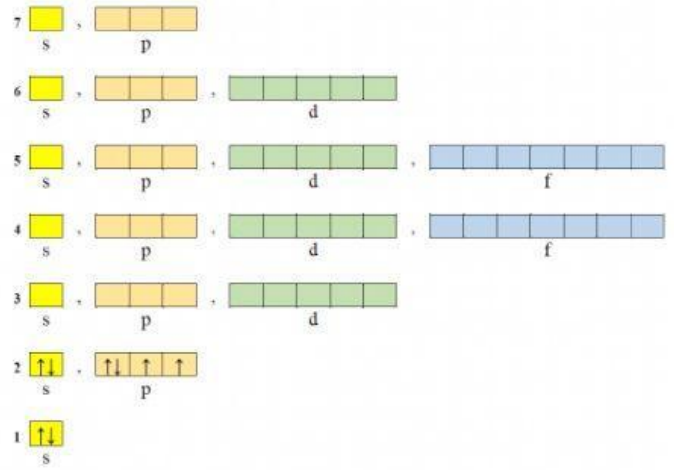
Name: _____ Date: _____

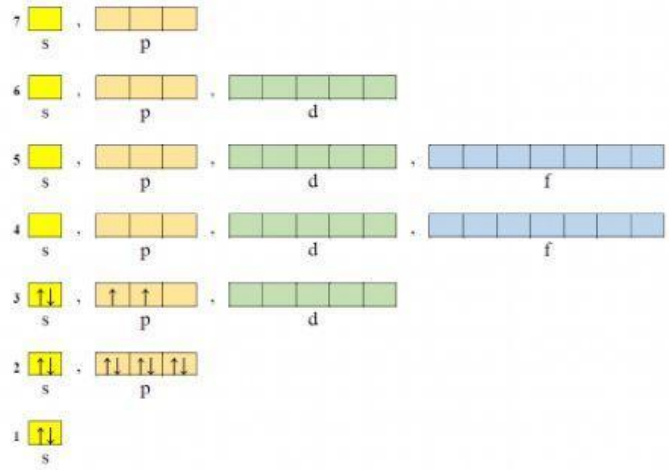
CHEMISTRY
Electron Configuration Review

Part 1: Which atoms of which elements has the following electron configuration (using the orbital diagram)? Type the chemical symbol (one or two letters) for the element on the line above the diagram. The electron configurations are for atoms in the ground state.

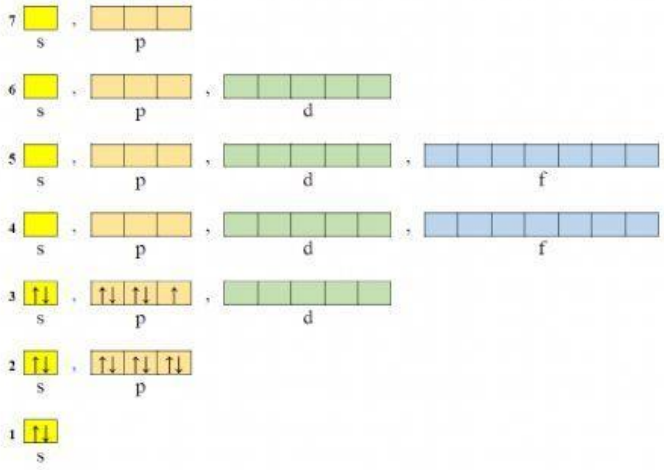
#1: _____



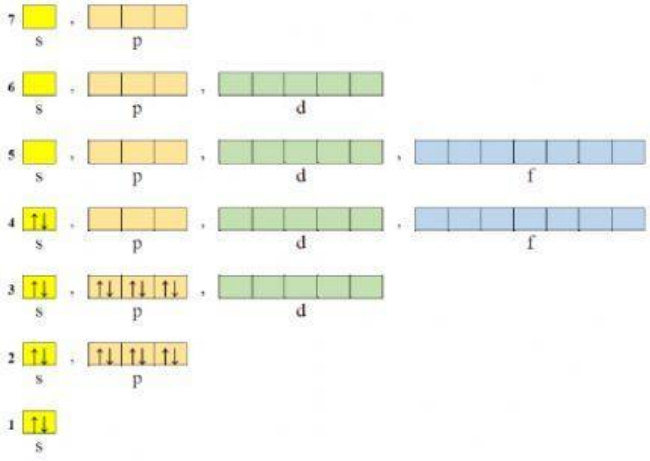
#2: _____



#3. _____



#4. _____



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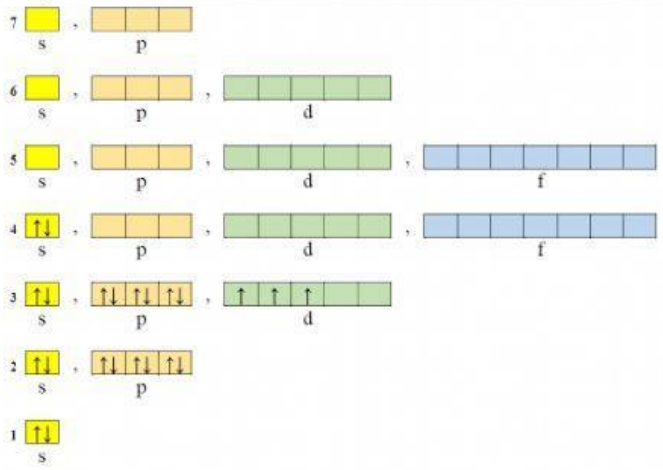
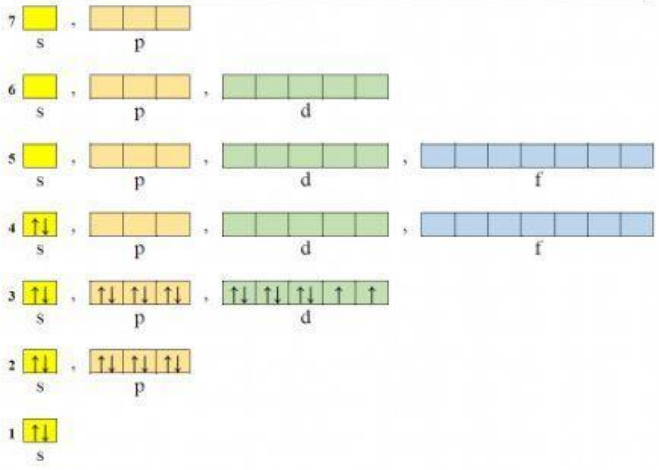
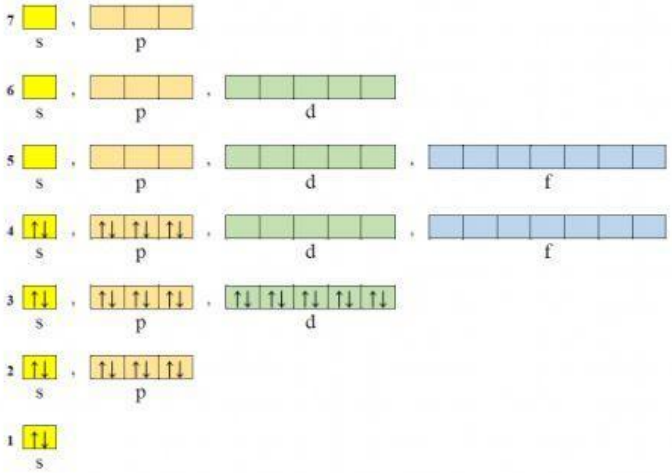
#5: _____



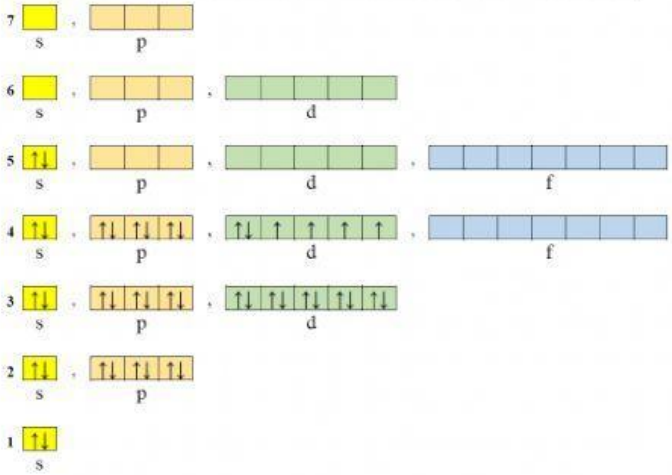
#6: _____



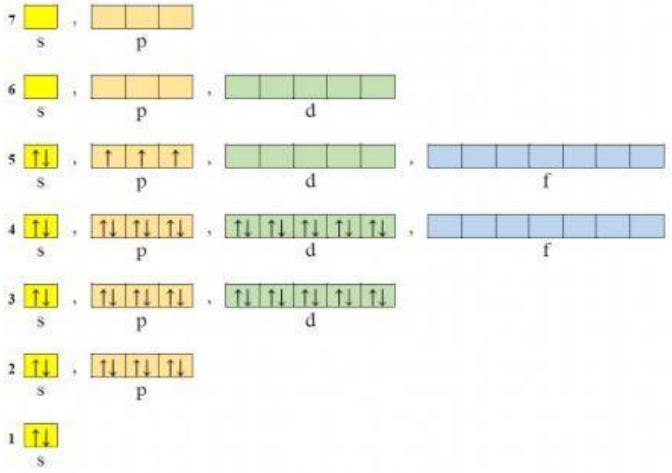
#7. _____



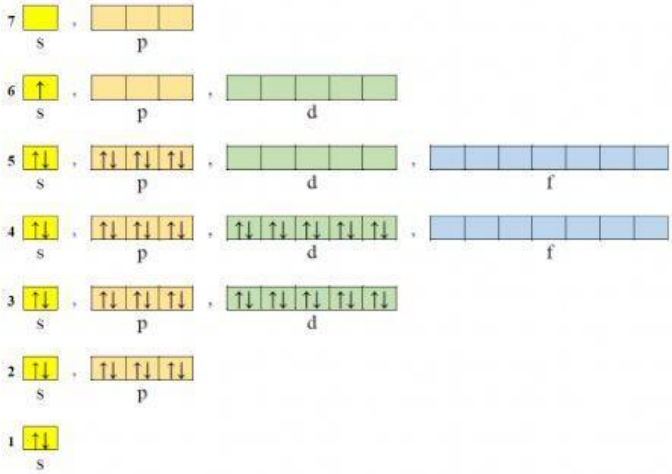
#8. _____



#9. _____



#10. _____



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Part 2: Multiple Choice. Which electron configuration is correct for atoms of the given element? Type the letter answer on the line next to the element. Hint, all electrons must fill the subshells (orbitals) by Aufbau's principle and the "electron snake" diagram.

1. _____ Magnesium
   A. $1s^2, 2s^2, 2p^6, 3s^2$
   B. $1s^2, 2s^2, 2p^6, 3p^2$
   C. $1s^2, 2s^2, 2p^8$
   D. $1s^2, 2s^2, 3s^2, 3p^6$

2. _____ Selenium
   A. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 4p^6, 5s^2, 5p^4$
   B. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 4p^6, 3d^8$
   C. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 3d^{10}, 4p^4$
   D. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 4p^4, 4d^{10}$

3. _____ Cobalt
   A. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 4d^6, 5s^1$
   B. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^1$
   C. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 3d^7$
   D. $1s^2, 2s^2, 2p^6, 3s^2, 3d^{10}, 3p^5, 4s^2$

4. _____ Strontium
   A. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 4p^6, 4d^{10}, 5s^2$
   B. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 3d^{10}, 4p^6, 5s^2$
   C. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 4p^6, 5s^2, 4d^{10}$
   D. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^2, 4p^6, 4d^2$

5. _____ Tellurium
   A. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^2, 4p^6, 4d^{10}, 5p^6$
   B. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 3f^{14}, 4s^2, 4p^6, 4d^2$
   C. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^2, 4p^6, 5s^2, 5p^6, 5d^8$
   D. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 3d^{10}, 4p^6, 5s^2, 4d^{10}, 5p^4$

6. Europium
   A. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^2, 4p^6, 4d^{10}, 5p^6, 4f^2$
   B. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 3d^{10}, 4p^6, 5s^2, 4d^{10}, 5p^6, 6s^2, 4f^1, 5d^1$
   C. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 3f^{14}, 4s^2, 4p^6, 4d^2, 5f^1$
   D. $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^2, 4p^6, 5s^2, 5p^6, 5d^8, 4d^{10}$

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Part 3. Using the Noble Gas core format for the Electron Configuration notation, match the atom/element to the electron configuration. Type the element's chemical symbol onto the line next to the electron configuration notation.

	[He], $2s^2$
	[He], $2s^2$, $2p^2$
	[Ne], $3s^1$
	[Ne], $3s^2$, $3p^5$
	[Ar], $4s^2$, $3d^8$
	[Ar], $4s^2$, $3d^{10}$, $4p^1$
	[Kr], $5s^2$, $4d^6$
	[Kr], $5s^2$, $4d^{10}$, $5p^4$
	[Xe], $6s^2$, $4f^4$, $5d^1$
	[Xe], $6s^2$, $4f^{12}$, $5d^1$
	[Xe], $6s^2$, $4f^{14}$, $5d^5$
	[Xe], $6s^2$, $4f^{14}$, $5d^5$, $6p^3$

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