

Name: \_\_\_\_\_

Period: \_\_\_\_\_

Seat#: \_\_\_\_\_

1) For each given element, fill in the orbital diagram and then write the electron configuration for the element.

a) Ar	b) Mg	c) N	d) Li	e) P	f) Cl
# of e <sup>-</sup> =	# of e <sup>-</sup> =	# of e <sup>-</sup> =	# of e <sup>-</sup> =	# of e <sup>-</sup> =	# of e <sup>-</sup> =

2) Write the electron configurations of the following elements:

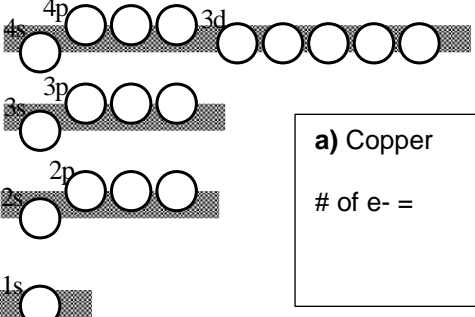
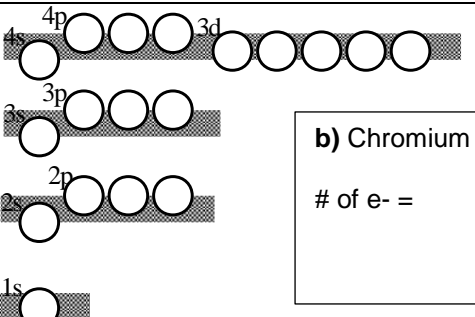
	Long Form (Full Configuration)	Short form (Noble Gas Configuration)
a) Ar		
b) Mg		
c) N		
d) Li		
e) P		
f) Cl		

3) Fill in the orbital diagram for the element, Fe, and write the electron configuration of Fe in the long and short form.

	<b>Long Form (Full Configuration)</b>
	<b>Short form (Noble Gas Configuration)</b>

**Dougherty Valley HS Chemistry - AP**  
**Atomic Structure – Electron Configuration**

4) A few elements do not follow the “rules”. There is some lowering of the energy of the atom by completely filling or half-filling the five d-orbitals. Fill in the following orbital diagrams for the elements indicated, write the electron configurations in long and short form.

 <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>a) Copper</b></p> <p># of e- =</p> </div>	<div style="background-color: #cccccc; text-align: center; padding: 2px;"><b>Long Form (Full Configuration)</b></div> <div style="height: 40px;"></div> <div style="background-color: #cccccc; text-align: center; padding: 2px;"><b>Short form (Noble Gas Configuration)</b></div>
 <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>b) Chromium</b></p> <p># of e- =</p> </div>	<div style="background-color: #cccccc; text-align: center; padding: 2px;"><b>Long Form (Full Configuration)</b></div> <div style="height: 40px;"></div> <div style="background-color: #cccccc; text-align: center; padding: 2px;"><b>Short form (Noble Gas Configuration)</b></div>

5) Shade in the 6 elements that do not follow Aufbau Principle:

Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd
La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg

6) Fill in the orbitals that are filled by these elements.

1s		1s
2s		

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7) Write the orbital occupied by the last electron of each of the following elements:

<b>As</b>	<b>W</b>	<b>Li</b>	<b>U</b>	<b>O</b>	<b>Rn</b>	<b>V</b>