

# Electron Configurations

Name \_\_\_\_\_

Date \_\_\_\_\_

## PART A – ORBITAL DIAGRAMS & LONGHAND ELECTRON CONFIGURATION

Use the patterns within the periodic table to draw orbital diagrams and write longhand electron configurations for the following atoms.

	Symbol	# e <sup>-</sup>	Orbital Diagram and Longhand Electron Configuration
1.	Mg		
2.	P		
3.	V		
4.	Ge		
5.	O <sup>2-</sup>		

**PART B – SHORTHAND ELECTRON CONFIGURATION**

Use the patterns within the periodic table to write the shorthand electron configurations for the following elements.

	Symbol	# e <sup>-</sup>	Shorthand Electron Configuration
6.	Sc		
7.	Cl		

8. How many unpaired electrons does cobalt have?

**PART B – RULES OF ELECTRON CONFIGURATIONS**

Which of the following “rules” is being violated in each electron configuration below? Explain your answer for each. **Hund's Rule, Pauli Exclusion Principle, Aufbau Principle**

9.	$\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ _ _ 1s 2s 2p
10	$\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ _ $\uparrow\downarrow$ $\uparrow$ $\uparrow$ 1s 2s 2p 3s 3p
11	$\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\uparrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow$ 1s 2s 2p 3s 3p
12	$\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ _ <b>1s 2s 2p</b> _ _____