

# REVIEW

## Chapter 5 : Lesson 5C

### 1. Silicon has the following Electron Configuration :

**$1s^2 2s^2 2p^6 3s^2 3p^2$**

**Explain the notation.**

The \_\_\_\_\_ represent the Main Energy Levels and can range from \_\_\_\_\_ to \_\_\_\_\_.

The \_\_\_\_\_ represent the Sub-Levels for each Main Energy Level.

The \_\_\_\_\_ indicate the Number of Electrons in each Sub-Level.

### 2. Utilize the Aufbau Principle to find the Electron Configuration for Chlorine.

Chlorine's Atomic Number =

#Protons = #Electrons =

Chlorine is in Period \_\_\_\_\_ on the Periodic Table.

Chlorine has \_\_\_\_\_ Main Energy Levels.

Chlorine is in the \_\_\_\_\_ Block on the Periodic Table.



Using the Aufbau Principle (or “reading” the Periodic Table from left to right) :

The Noble Gas that just before Chlorine on the Periodic Table, is Neon. Use this information to provide a “shorthand” for the Electron Configuration that you figured out above:

### 3. Utilize the Aufbau Principle to find the Electron Configuration for Calcium.

Calcium's Atomic Number =

#Protons = #Electrons =

Calcium is in Period \_\_\_\_ on the Periodic Table.

Calcium has \_\_\_\_ Main Energy Levels.

Calcium is in the \_\_\_\_ Block on the Periodic Table.



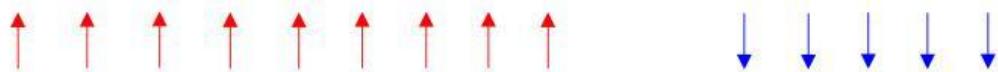
Using the Aufbau Principle (or “reading” the Periodic Table from left to right) :

Provide a “shorthand” for the Electron Configuration that you figured out above:

### 4. The Electron Configuration for Oxygen is :

$$1s^2 \ 2s^2 \ 2p^4$$

Write this in Orbital Notation using Hund's Rule (you have the exact amount of arrows to drag and drop):



1s

2s

2p

3s

O :

Now provide the “shorthand” Orbital Notation :

2s

2p

**5. Provide the Orbital Notation for Sodium :**



Na:

**Now provide the “shorthand” Orbital Notation :**

3s

\_\_\_\_\_

**6. Complete the following statements :**

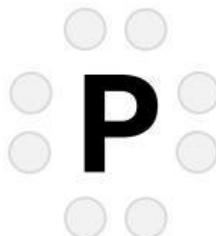
The Electron Dot Notation uses dots around an Element's \_\_\_\_\_. The dots represent \_\_\_\_\_ Electrons. A max of \_\_\_\_\_ dots are used. The dots are placed as follows :

- The first 2 dots are placed as a pair (s-Orbital) to the \_\_\_\_\_ of the Chemical Symbol.
- The 3<sup>rd</sup> dot is placed at the \_\_\_\_\_ of the Chemical Symbol (p Orbital).
- The 4<sup>th</sup> dot is placed to the \_\_\_\_\_ of the Chemical Symbol (p Orbital).
- The 5<sup>th</sup> dot is placed \_\_\_\_\_ the Chemical Symbol (p Orbital).
- The remaining Electrons are now paired up with the 3 unpaired Electrons in the same order until the p-Orbital is filled

7. Provide the Electron Dot Notation for Phosphorus. Only use the required amount of dots. Throw the un-used dots in the trash can :

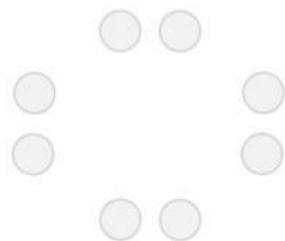
1 2 3 4 5 6 7 8

Phosphorus is in Group \_\_\_\_\_ on the Period Table. This means it has \_\_\_\_\_ Valence Electrons.



8. Provide the Electron Dot Notation for Argon. Only use the required amount of dots. Throw the un-used dots in the trash can :

1 2 3 4 5 6 7 8



9. Provide the Electron Dot Notation for Helium. Only use the required amount of dots. Throw the un-used dots in the trash can :

1 2 3 4 5 6 7 8



10. Provide the Electron Dot Notation for the element that has the following Electron Notation :



Only use the required amount of dots. Throw the un-used dots in the trash can :

1 2 3 4 5 6 7 8



11. Drag & Drop each of the following items into the correct box :

Has a positive charge.	Forms when an Atom loses an Electron.	$[\text{Mg}]^{2+}$
Has a negative charge.	Forms when an Atom gains an Electron.	$[\text{Cl}]^-$

Anion	Cation