



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

## WP Practice

### Exam 2: Models of the Atom

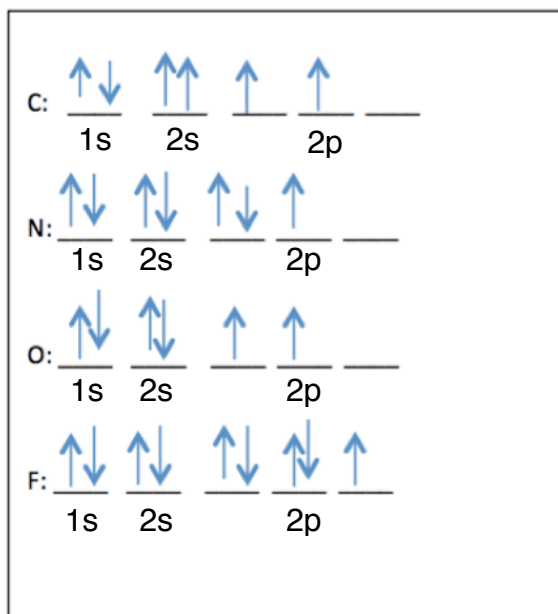
(Also review unit 1 and unit 2 pretest packets and unit 2 test prep check sheet)

- An atom with  $Z$  (atomic number) = 9 and  $A$  (mass number) = 19 contains  
\_\_\_\_\_ p      \_\_\_\_\_ n      \_\_\_\_\_ e<sup>-</sup>
  - If an atom is neutral, what can be said about the number of protons and electrons?
- Atoms of the same element that differ in the number of neutrons are called \_\_\_\_\_.
- Elements in the same \_\_\_\_\_ have similar chemical properties.
- Write the symbolic notation for an atom with 17 protons, 18 neutrons, and 18 electrons.
- An imaginary element Xy consists of two isotopes having masses of 122.0 amu and 124.0 amu. A sample of Xy was found to contain 65.0% of the  $^{122}\text{Xy}$  isotope and 35.0% of the  $^{124}\text{Xy}$  isotope. Calculate the atomic mass of Xy (give your answer to one decimal place).
- Gallium ( $_{31}\text{Ga}$ ) has two cations with a +2 and +3 charge. Write the electron configuration for a neutral gallium atom and explain why its electronic structure (electron configuration) leads to these two ions (use electron configurations in your explanation).
  - Boron is in the same family as gallium. Why doesn't boron also display this ionization pattern?

7. Copper occurs naturally as  $^{63}\text{Cu}$  and  $^{65}\text{Cu}$ . Which isotope is more abundant?

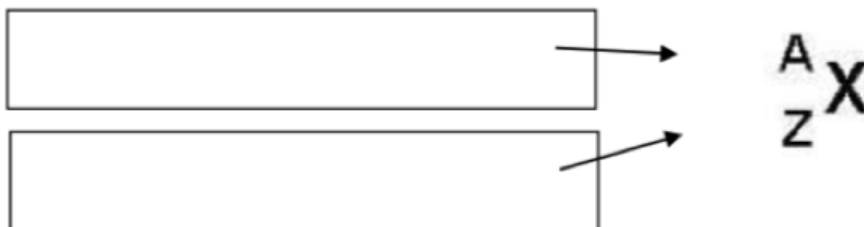
8. Below is a representation of the valence electrons of several period 2 elements.

- Identify which is incorrect (more than one are incorrect).
- Show the corrected electron configuration.
- Which rule does it violate?



9. Bromine has two stable isotopes (Br-79 and Br-81). Look at the periodic table and answer the following questions about Bromine, Br.

- Fill in the isotope notation below for the most abundant isotope of bromine (give values for A and Z).



- Fill in the table below for the bromine isotope:

Protons	Neutrons	Electrons	Electrons in Br <sup>-</sup> ion