Isotope and Ions Practice Worksheet Name: _____

Part I: Isotopes

1. Define an isotope.

2. What would happen if the number of protons were to change in an atom?

3. Another way to write isotopes is to write the name of the element then add the mass number after a dash, for example, $^{14}_{6}C$ is carbon-14. Why isn't the atomic number needed for this notation?

4. Here are three isotopes of an element: $_{6}^{12}C$ $_{6}^{13}C$ $_{6}^{14}C$
   a. The element is: _____
   b. The number 6 refers to the _____
   c. The numbers 12, 13, and 14 refer to the _____
   d. How many protons and neutrons are in the first isotope? _____
   e. How many protons and neutrons are in the second isotope? _____
   f. How many protons and neutrons are in the third isotope? _____

Complete the following chart:

Isotope name	atomic #	mass #	# of protons	# of neutrons	# of electrons
92 uranium-235					
92 uranium-238					
5 boron-10					
5 boron-11					

Part II: Ions

Determine the charges on the following using the diagram above as a guide:

1. An atom having lost two electrons _____
2. An atom having lost six electrons _____
3. An atom having gained one electron _____
4. An atom having gained three electrons _____
5. An atom having lost five electrons _____
6. An atom having gained two electrons _____
7. An atom having lost one electron _____
8. An atom having gained four electrons _____

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