

Unit 1.2

Mass Spectroscopy

1. What is an isotope? _____

Questions 2 – 5 refer to the U-238 isotope.

2. How many protons are contained within the nucleus? _____

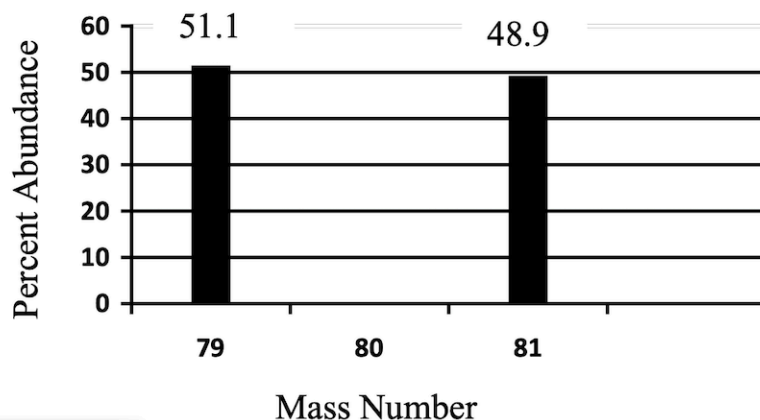
3. How many neutrons are contained within the nucleus? _____

4. How many electrons are contained within a single neutral isotope of this element? _____

5. What is the mass of this isotope in amu? _____

6. Which isotope is more likely to bond with oxygen? C-12 or C14 and explain. _____

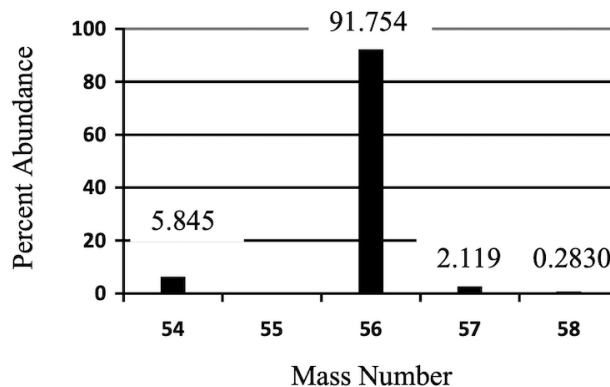
7. A pure sample of bromine was vaporized and injected into a mass spectrometer and the data was plotted in the graph below. The mass value for Br-79 is 78.918 amu. Find the mass of Br-81.



Name: _____

Date: _____

8. A pure sample of an element was vaporized and injected into a mass spectrometer and the data was plotted on the graph below. The mass values for the isotopes were found to be: A-56 (55.935 amu), A-54 (53.940 amu), A-57 (56.935 amu) and A-58 (57.933 amu). Find the average atomic mass and identify the element.



9. A pure sample of an element was vaporized and injected into a mass spectrometer and the data was plotted on the graph below. The mass values for the isotopes were found to be: A-50 (49.946 amu), A-52 (51.941 amu), A-53 (52.941 amu) and A-54 (53.939 amu). Find the average atomic mass and identify the element.

