

Name \_\_\_\_\_ Period \_\_\_\_\_

College Prep Chemistry

Assignment 1L – Nuclear Decay

20 Points

Answer the following questions based on the in class notes

Define the role of the following subatomic particles		
Protons ( $p^+$ )	Electron ( $e^-$ )	Neutron ( $n^0$ )

Define <i>Z-Ratio</i>	How does <i>Z-Ratio</i> determine the stability of an isotope of an element?

What is the optimal <i>Z-Ratio</i> for the following size atoms?		
Small Atoms	Medium Atoms	Large Atoms

Calculate the <i>Z-Ratio</i> for the following isotopes of Carbon					
$Z_{ratio} = \#n^0 / \#p^+$					
Carbon-12		Carbon-13		Carbon-14	
$Z_{ratio} =$		$Z_{ratio} =$		$Z_{ratio} =$	

For each nuclear decay particle, identify when the particle will be given off by an isotope		
Alpha Particle	Beta + Particle	Beta - Particle