Name _____ Period _____

College Prep Chemistry

Assignment 1M – 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^o)

Define *Z-Ratio*	How does Z-Ratio determine the stability of an isotope of an element?

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

Calculate the Z-Ratio for the following isotopes of Carbon $Z_{ratio} = \#n^o / \#p^+$		
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