Name _____ Period _____

CP Chemistry of the Earth

Assignment 1S – Unit 1 Review 20 Points

Answer the following questions based on the in class notes

Isotope A - X	Atomic #	Mass #	Protons (p^+)	Electrons (e^-)	Neutrons (n^o)	Atomic Mass (*amu*)
$^{51}_{23}V$						
Zinc-65						
	74	184				
Tin - _____			50		69	

Complete the following Chart to find the average atomic mass

Cobalt has the following isotopes

Isotope	Fractional Abundance
Co-57	0.098
Co-58	0.182
Co-59	0.720

Calculate the Average Atomic Mass of Lu

Isotope	Atomic Mass		Frac. Abund.		Ratio
Co-57		x		=	
Co-58		x		=	
Co-59		x		=	

Ratio Co-57		Ratio Co-58		Ratio Co-59		Avg Atomic Co
	+		+		=	

Complete the following nuclear decay equations

225 89	Ac	→	4 2	He	+		
188 74	W	→	0 -1	e^-	+		
38 18	Ar	→	0 +1	e^+	+		

		→	4 2	He	+	247 96	Cm
		→	0 -1	e^-	+	45 21	Sc
		→	0 +1	e^+	+	99 42	Mo

Complete the following nuclear decay chain

Cesium-135 Decay Chain

Decay 1 (α decay)

135 55	Cs	→	4 2	He	+		

Decay 2 (β- decay)

		→	0 -1	e^-	+		

Decay 3 (β+ decay)

		→	0 +1	e^+	+		

Decay 4 (α decay)

		→	4 2	He	+		

Complete the following charts based on the half-life of nuclear particles

Isotope	Starting Particles (N^o)	Number HL passed (n)	Remaining Particles (N_t)	Number HL passed (n)	Remaining Particles (N_t)
^{10}Be	100000	4		8	

Isotope	Starting Particles (N^o)	HL Time	Total Time	# HL Passed	Remaining Particles (N_t)
^{33}P	100000	15.6days	93.6days		