Exam 1 For Chem 1124, Fall 2011
Name_____

By submitting this exam, I affirm that I have neither given nor received unauthorized aid on this assignment.
You must show all work for credit. Express each answer to the correct number of significant figures.

Useful information: 1 m = 1.094 yd, $^\circ C = \frac{5}{9}(^\circ F - 32)$ $^\circ F = \frac{9}{5}(^\circ C) + 32$, 1 in =2.54 cm, 1 kg = 2.2 lbs, 1 mL= 1 cm^3, 1 L = 1.056 qt, 1 mile = 1.609 km,

(1)(4 points) Who is credited with the discovery of the electron and how did he do it?

(2)(2 points) Fill in the following table

Species	protons	neutrons	electrons
^{15}N			
^{19}F			
$^{23}Na^{+}$			

(3)(5 points) List the 5 of the base SI units and the property each one measures

(4)(4 points) Conversions

(a) 251 miles to km

*(b) If the amount of fluid a patient receives is listed as 15 mL/kg, each day, how much fluid should a 175 lb patient receive in a day?

(5)(5 points) List 4 points of Dalton's Atomic theory

(6)(5 points) What is the volume of a 10.0 kg steel weight if steel has a density of 5.5 g/mL?

(7)(4 points) Give and example of each

(a) a compound _____

(b) a heterogeneous mixture_____

(8)(3 pts) Fill in the following table of electron configurations

element	n=1	n=2	n=3
aluminum	2	8	3
C			
	2	8	
Lithium			

(9)(4pts) A sample contains 4.50 g of LiCl.

(a) How many moles of LiCl are in the sample?

(b) How many lithium ions are in the sample?

(10)(4 points) Explain 1 use of radioactivity in medicine.

(11)(3 pts) Complete the following nuclear equations

(a) $^{14}C \rightarrow {}^{0}_{-1}e + ?$

(b) $^{211}Sn \rightarrow {}^{4}He + ?$

(c) $^{98}Tc \rightarrow {}^{98}Mo + ?$

(12)(6 points) Complete the following table

Compound	Name
Li_2CO_3	
	iron(III) carbonate
HNO_3	
N_2S_4	
	phosphorus acid
	carbon disulfide

Extra Credit (4 points): If a 5.00 g sample of ^3H_2O (tritiated water) is found to give off 5,000,000 Bq of radioactivity. If the half-life of tritium is 12 years, how much radioactivity will be given off by 1.00 g of this water in 48 years?