NAME_____ CHEM1451: Review Quiz Point Total: 50 July 9, 2014

Multiple Choice: Write the letter associated with the correct answer in the blank provided.

_____1. Which of the following statements about subatomic particles is TRUE?

- a) A neutral atom contains the same number of protons and electrons.
- b) Protons have about the same mass as electrons.
- c) Electrons make up most of the mass of an atom.
- d) Protons and neutrons have opposite, but equal in magnitude, charges.
- e) Neutrons and electrons are found in the nucleus of an atom.
- _____2. What species is represented by the following information?

 $p^+ = 47$ $n^\circ = 62$ $e^- = 46$

- a) Ag+
- b) Nd
- c) Pd
- d) Ag
- e) Pd+
- _____3. Write the formula for strontium nitride.
 - a) Sr_3N_2
 - b) $Sr(NO_3)_2$
 - c) SrN
 - d) Sr_2N_3
 - e) $Sr(NO_2)_2$
- ____4. Determine the name for Cl_2O .
 - a) chlorine oxide
 - b) dichlorine monoxide
 - c) chlorine (I) oxide
 - d) chlorine (II) oxide
 - e) chlorate

Complete the reaction below. <u>Include phases</u> and balance the reaction.

(4 Points)

 $\underline{\qquad} H_2SO_4(aq) + \underline{\qquad} KOH(aq) \rightarrow \underline{\qquad}$

Problems: Show your work for credit on these problems!

1. (4 Points) Convert 1.25 x 10^8 cL to kL

2. (5 Points) How many moles of water are contained in 50.00 mL? Assume the density of water is 0.998 g/mL.

3. (5 Points) If the walls in a room are 955 square feet in area, and a gallon of paint covers 15 square yards, how many gallons of paint are needed for the room? (3 ft = 1 yd)

4. (4 Points) How many milliliters of a 0.184 M NaNO3 solution contain 0.113 moles of NaNO3?

5. (5 Points) How many grams of NaCl are required to make 250.0 mL of a 3.000 M solution?

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6. (15 Points) For each of the given molecules, fill in the open blanks in the table with the missing structural information: (Shaded boxes will not be graded.)

Molecule	Lewis Structure (3 Points)	3D VSEPR Shape (2 Points)	Electron Geometry (2 Points)	Molecular Shape (2 Points)	Polar/ Nonpolar (2 Points)
H ₂ O					
XeF4					
NH4 ⁺					
ClO ₃ -					