PRINT NAME _____

SIGN NAME _____

CIRCLE your recitation section in the list below.

5:	W	12:00	LF 102	6:	Th	8:00	HM 209
7:	F	10:00	HM 108	8:	W	2:00	HM 106
9:	Th	9:00	HM 215	10:	F	1:00	HM 209
11:	M	1:00	HM 101				

SCORED GRADE: _____

All answers should be with the correct significant figures.

Atomic weights are provided in the Periodic Table. These values must be used.

The Periodic Table will not be collected. It may be used as scratch paper or as cover paper. Do not turn it in.

Be certain your answers are clear. If an answer is not clear, it can be considered wrong.

Problems marked with ** in the margin are from the assigned homework. These total 23 points.

Place your name in the space provided at the top of each question page. This helps to identify the pages if they are accidentally separated during grading and processing.

Work promptly. Use your time effectively.

SOME THINGS WHICH MAY OR MAY NOT BE USEFUL

Avogadro's Number 6.022×10^{23}

KEEP YOUR WORK AND ANSWERS COVERED.

1. (24 pts) Indicate whether each statement is true (T) or false (F). Be certain T or F is clearly indicated.
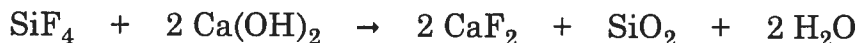
   _____ One thousand mL is the same as one million μL.

   _____ In every neutral atom, the number of protons and the number of neutrons is equal.

   _____ ^{99}Mo and ^{99}Tc are allotropes of each other.

   _____ Arsenic is not a metal element.

   _____ Propane is a binary, molecular compound.

   _____ BH_3 is composed of B^{3+} and H^- ions.

   _____ Hydrogen oxalate ion has a 1– charge.

   _____ Combustion of CaC_2 produces CaO and CO_2 as the only products.

** 2. (3 pts) What is the symbol for the element which forms a 2– monatomic anion with 54 electrons in the anion? _____

   (3 pts) How many electrons are in the gold(I) ion? _____

3. (8 pts) Balance the following equations.

$$Fe \ + \ H_2O \ \rightarrow \ Fe_3O_4 \ + \ H_2$$

$$LiOH \ + \ SO_2F_2 \ \rightarrow \ LiF \ + \ Li_2SO_4 \ + \ H_2O$$
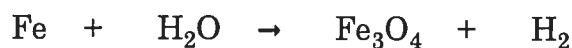
** 4. (6 pts) The following equation is balanced.

$$SiF_4 \ + \ 2\,Ca(OH)_2 \ \rightarrow \ 2\,CaF_2 \ + \ SiO_2 \ + \ 2\,H_2O$$

For a reaction which is conducted using 8.714 g $Ca(OH)_2$, circle the number of grams of SiF_4 which are needed.

4.289	5.973	6.120	7.463	8.001	9.327
10.41	11.62	12.83	13.65	14.08	15.22

5. (6 pts) Elemental hydrogen reacts with chlorine dioxide to form water and hydrogen chloride. Write the balanced equation for this reaction.

** 6. (5 pts) Circle the percent composition of sulfur in tetraphosphorus hexasulfide.

40.13%   42.60%   44.19%   46.83%   48.81%   50.90%

52.61%   54.73%   56.07%   58.15%   60.83%   62.19%

7. (3 pts) Give the molar mass (in g/mol) of silver carbonate.   _____

8. (5 pts) Circle all below which have any covalent bonds.

CaF_2 BrF_3 HCl   CsCl Na_2O NH_4Br

** 9. (6 pts) Give the formula for each of the following.

copper(II) hydroxide   _____

carbon tetrachloride   _____

10. (2 pts) Give the number of electrons in a calcium ion.   _____

(2 pts) Give the number of neutrons in an atom of ^{122}Sb.   _____

(2 pts) Give the symbol of an element in Period 2 which is molecular in its common elemental form.   _____