

PRINT NAME _____

SIGN NAME _____

CIRCLE your recitation section in the list below.

22: W	3:00	HM 106	23: F	10:00	HM 221
24: F	8:00	HM 210	25: M	8:00	HM 210
26: M	9:00	DA 205	27: T	3:00	WS 108
28: W	8:00	HM 210	29: Th	2:00	NS 212C

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 and Information Page will not be collected. They may be used as scratch paper or as cover paper. Do not turn them in. If you wish to check your answers against the key, you can copy your answers to those pages.

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 28 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.

last name: _____

****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.

_____ An aqueous solution of table sugar is heterogeneous.

_____ Aqueous solutions of electrolytes conduct electricity.

_____ Water can break up the ionic bonding in BaCl_2 .

_____ Iron(III) oxide is soluble in water.

_____ In a solution of $\text{KI}(aq)$, the δ^+ charges of water molecules are attracted to the cations.

_____ Pure acetic acid is composed of H^+ and CH_3CO_2^- ions.

_____ Water can protonate ammonia, but only partially.

_____ In a redox process, the oxidant loses electrons.

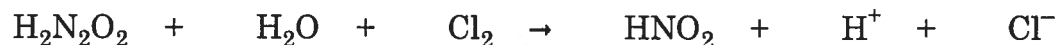
2. (5 pts) A 600.0 mL solution of potassium sulfate contains 0.61 g of that salt. Circle the value for $[\text{K}^+]$ (in M).

0.0041	0.0058	0.0068	0.0077	0.0082	0.0092
0.010	0.011	0.012	0.013	0.014	0.015

- ** 3. (6 pts) Give the oxidation number of each element in $\text{C}_6\text{H}_4\text{Cl}_2$.

C: _____ H: _____ Cl: _____

4. (6 pts) Balance the following equation. All reactants and products are shown.



- ** 5. (6 pts) The following equation is balanced.



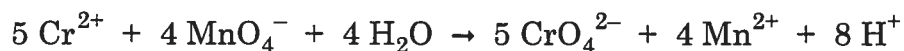
The reaction uses 147 mL of 2.316 M H_3PO_4 solution. Circle the number of grams of K_2S which are needed.

45.8	46.3	47.2	48.0	49.7	50.4
51.8	52.0	53.1	54.7	55.9	56.3

last name: _____

- ** 6. (5 pts) Write the net ionic equation for the aqueous reaction of NaOH with HClO_2 . Place your final answer on the line below. (Phases are not needed.)

- ** 7. (6 pts) Consider the following equation.



Which reactant gains electrons? _____

What is the reductant? _____

8. (3 pts) Give the formula of one gas which dissolves in water and gives an acidic solution. _____

(3 pts) Give the formula of the salt formed in the reaction of nitrous acid and calcium hydroxide. _____

- ** 9. (5 pts) 1.00 L each of separate solutions of 0.3 M KCl, 0.1 M AgClO_4 and 0.1 M $\text{Pb}(\text{NO}_3)_2$ are mixed into one container.

a. Give the formula(s) of the precipitate(s) formed. _____

b. Give the formula(s) of the spectator ion(s). _____

10. (6 pts) Consider mixing the separate solutions as given for each entry below. If the mixing will result in a precipitation, write P. If the mixing will result in an acid-base reaction, write AB. If the mixing will result in a gas-forming reaction, write GF. If there is no reaction upon mixing, write NR. (There is no balancing requirement for this question.)

a. $\text{Co}(\text{NO}_3)_3 + \text{K}_3\text{PO}_4$ _____

b. $\text{HNO}_3 + \text{MgCO}_3$ _____