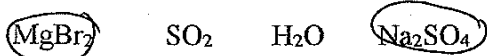
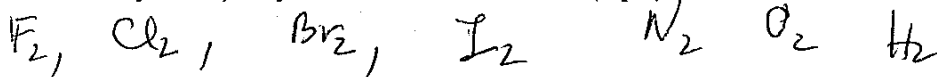


Name Key Name \_\_\_\_\_  
 (print name) (sign name)

1. Circle the following compounds which are ionic. You may circle one, many, all or none. (4 pts)



2. What are 2 diatomic elements (elements which in the most stable state is a diatomic)? Name (or give the element symbols) any 2 diatomic elements. (4 pts)



(F net  
F<sub>2</sub> -1)

3. Write out the correct ionic formula for the following. Show work (6 pts, work 3 pts)

Between the elements: Al and P group IIIA → +3 group VA → 5-8 = -3

Al P  
 group IIIA → +3  
 group VA → -3  
 NW + no charge -3  
 net lowest ratio -1  
 NW -1  
 Charge 1:1 each

4. For the following formula, give the formula mass (or molar mass). Show work. (6 pts)

Na<sub>2</sub>SO<sub>4</sub> Na → 22.99 g/mol S → 32.07 g/mol O → 16.00 g/mol

$$2(22.99) + 32.07 + 4(16.00) = 142.05 \text{ g/mol}$$

1 pt Na 1 pt S 2 pt O 1 pt = 1 pt

Extra Credit (2 pts) Given the following molecule and the given formula mass. If you have 32.55 grams of the molecule, how many moles do you have? Show work.

HCl (FW = 36.46 g/mol)

32.55 g HCl ×  $\frac{\text{mol HCl}}{36.46 \text{ g HCl}}$  = 0.8928 mol HCl

extra step - 1/2 pt

(-1/2 pt) (1/2 pt)

Name Key (print name) Name yellow (sign name)

1. Circle the following compounds which are covalent. You may circle one, many, all or none. (4 pts)

MgBr<sub>2</sub>    SO<sub>2</sub>    H<sub>2</sub>O    Na<sub>2</sub>SO<sub>4</sub>

Not lowest ratio  
NW-1  
NW+ no charge-3

2. What are 2 diatomic elements (elements which in the most stable state is a diatomic)? Name (or give the element symbol) any 2 diatomic elements. (4 pts)

F<sub>2</sub>    Cl<sub>2</sub>    Br<sub>2</sub>    I<sub>2</sub>    H<sub>2</sub>    O<sub>2</sub>    N<sub>2</sub>

F not  
F<sub>2</sub>-1

3. Write out the correct ionic formula for the following. Show work (6 pts, work 3 pts)

Between the elements: Ca and Cl

Group IIA +2

Group VIIA 7-8=-1

Charge 1 pt each

Ca<sup>+2</sup>    Cl<sup>-1</sup>

(#Ca)(+2) + (#Cl)(-1) = zero  
1(2)    2(1)    CaCl<sub>2</sub>

Ca<sub>1</sub>Cl<sub>2</sub>

4. For the following formula, give the formula mass (or molar mass). Show work. (6 pts)

Al (NO<sub>3</sub>)<sub>3</sub>  
1 1 1  
1 3 9

Al - 26.98 g/mol    N - 14.01 g/mol    O - 16.00 g/mol

Al    N    O  
1(26.98) + 3(14.01) + 9(16.00) = 213.01 g/mol  
1 pt    1 pt    1 pt    1 pt    1 pt    1 pt

Extra Credit (2 pts) Given the following molecule and the given formula mass. If you have 543.2 grams of the molecule, how many moles do you have? Show work.

extra step 1/2 pt

H<sub>2</sub>O (FW = 18.02 g/mol)

543.2 g H<sub>2</sub>O ×  $\frac{\text{mol H}_2\text{O}}{18.02 \text{ g H}_2\text{O}}$  = 30.14 mol H<sub>2</sub>O

1/2 pt    1/2 pt

Name key Name not lowest ratio -1  
 (print name) (sign name) NWt No charge -3

1. Circle the following which is an empirical formula (4 pts)

$C_2H_2$      $CH$      $NH_2$      $N_2H_4$      $\rightarrow$  Lowest whole # ratios

2. What are 2 diatomic elements (elements which in the most stable state is a diatomic)? Name (or give the element symbol) any 2 diatomic elements. (4 pts)

$F_2$      $Cl_2$      $Br_2$      $I_2$      $H_2$      $O_2$      $N_2$      $F_{net}$   
 $F_{l-1}$

3. Write out the correct ionic formula for the following. Show work (6 pts, work 3 pts)

Between the elements: Rb and N    Group IA = 5 - 8 = -3  
Group IA +1    or     $Rb^{+1} N^{-3}$

$(\#Rb)(+1) + (\#N)(-3) = \text{zero}$   
 $\uparrow \quad \uparrow$   
 $3 \quad 1$   
 $Rb_3 N$     change 1 pt each

4. Give the name or the formula and charge (for the polyatomic ions) or number for the following. (6 pts, 3 pts each)

Sulfate  $SO_4^{-2}$     Charge -2  
 HCl hydrochloric acid    anything not in at this 3 pt  
said  $SO_2^{-4} - 1/2$

Extra Credit (2 pts) Given the following molecule and the given formula mass. If you have 160.2 grams of the molecule, how many moles do you have? Show work. extra step - 1/2 pt

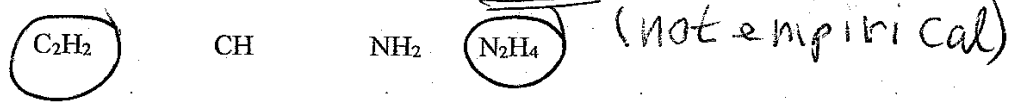
$Na_3PO_4$  (FW = 163.94 g/mol)

$$160.2 \text{ g } Na_3PO_4 \times \frac{1 \text{ mol } Na_3PO_4}{163.94 \text{ g } Na_3PO_4} = 0.9772 \text{ mol } Na_3PO_4$$

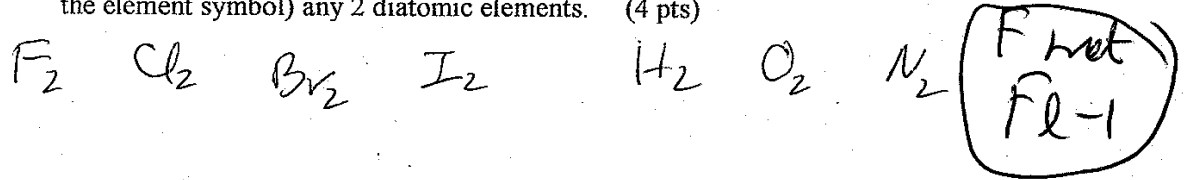
-1/2 pt    -1/2 pt

Name key Name pink  
 (print name) (sign name)

1. Circle the following which is a molecular formula (4 pts)



2. What are 2 diatomic elements (elements which in the most stable state is a diatomic)? Name (or give the element symbol) any 2 diatomic elements. (4 pts)



3. Write out the correct ionic formula for the following. Show work (6 pts, work 3 pts)

Between the elements: Sr and N → IIA → 5-8 = -3  
 ↓ IIA → +2

(# Sr)(+2) + (# N)(-3) = zero  
 ↑ ↑  
 3 2 Sr<sub>3</sub>N<sub>2</sub>

Sr<sup>+2</sup> N<sup>-3</sup>  
Sr<sub>3</sub>N<sub>2</sub>

Charge 1 pt each  
NW - 1 pt  
NW + no charge

4. Give the name or the formula and charge (for the polyatomic ions) or number for the following (6 - 3 pts, 3 pts each)

not matches - 3 pt Charge - 2 pt not lowest ratio - 1 pt

↓ PO<sub>4</sub><sup>-3</sup>

5 (as number prefix) penta phosphate PO<sub>4</sub><sup>-3</sup>

Extra Credit (2 pts) Given the following molecule and the given formula mass. If you have 0.2334 grams of the molecule, how many moles do you have? Show work.

NaHCO<sub>3</sub> (FW = 84.01 g/mol)

0.2334 g × mol NaHCO<sub>3</sub> / 84.01 g = 2.778 × 10<sup>-3</sup> mol  
NaHCO<sub>3</sub> NaHCO<sub>3</sub>

1/2 pt 1/2 pt

Quiz III General Chemistry I Lecture Spring 15 Dr. Hahn 20 pts 2/12 R 8:30am form A quiz # \_\_\_\_\_

Name \_\_\_\_\_ Name \_\_\_\_\_  
(print name) (sign name)

1. Circle the following compounds which are ionic You may circle one, many, all or none. (4 pts)

MgBr<sub>2</sub> SO<sub>2</sub> H<sub>2</sub>O Na<sub>2</sub>SO<sub>4</sub>

2. What are 2 diatomic elements (elements which in the most stable state is a diatomic)? Name (or give the element symbols) any 2 diatomic elements. (4 pts)

3. Write out the correct ionic formula for the following. Show work (6 pts, work 3 pts)

Between the elements: Al and P

4. For the following formula, give the formula mass (or molar mass). Show work. (6 pts)

Na<sub>2</sub> SO<sub>4</sub>

Extra Credit (2 pts) Given the following molecule and the given formula mass. If you have 32.55 grams of the molecule, how many moles do you have? Show work.

HCl (FW = 36.46 g/mol)

Name \_\_\_\_\_ Name \_\_\_\_\_  
(print name) (sign name)

1. Circle the following compounds which are covalent. You may circle one, many, all or none. (4 pts)

MgBr<sub>2</sub>      SO<sub>2</sub>      H<sub>2</sub>O      Na<sub>2</sub>SO<sub>4</sub>

2. What are 2 diatomic elements (elements which in the most stable state is a diatomic)? Name (or give the element symbol) any 2 diatomic elements. (4 pts)

3. Write out the correct ionic formula for the following. Show work (6 pts, work 3 pts)

Between the elements: Ca and Cl

4. For the following formula, give the formula mass (or molar mass). Show work. (6 pts)

Al (NO<sub>3</sub>)<sub>3</sub>

Extra Credit (2 pts) Given the following molecule and the given formula mass. If you have 543.2 grams of the molecule, how many moles do you have? Show work.

H<sub>2</sub>O (FW = 18.02 g/mol)

Name \_\_\_\_\_ Name \_\_\_\_\_  
(print name) (sign name)

1. Circle the following which is an empirical formula (4 pts)

$C_2H_2$        $CH$        $NH_2$        $N_2H_4$

2. What are 2 diatomic elements (elements which in the most stable state is a diatomic)? Name (or give the element symbol) any 2 diatomic elements. (4 pts)

3. Write out the correct ionic formula for the following. Show work (6 pts, work 3 pts)

Between the elements: Rb and N

4. Give the name or the formula and charge (for the polyatomic ions) or number for the following. (6 pts, 3 pts each)

Sulfate \_\_\_\_\_ HCl \_\_\_\_\_

Extra Credit (2 pts) Given the following molecule and the given formula mass. If you have 160.2 grams of the molecule, how many moles do you have? Show work.

$Na_3PO_4$  (FW = 163.94 g/mol)

Name \_\_\_\_\_ Name \_\_\_\_\_  
(print name) (sign name)

1. Circle the following which is a molecular formula (4 pts)

C<sub>2</sub>H<sub>2</sub>          CH          NH<sub>2</sub>          N<sub>2</sub>H<sub>4</sub>

2. What are 2 diatomic elements (elements which in the most stable state is a diatomic)? Name (or give the element symbol) any 2 diatomic elements. (4 pts)

3. Write out the correct ionic formula for the following. Show work (6 pts, work 3 pts)

Between the elements: Sr and N

4. Give the name or the formula and charge (for the polyatomic ions) or number for the following. (6 pts, 3 pts each)

5 (as number prefix) \_\_\_\_\_ phosphate \_\_\_\_\_

Extra Credit (2 pts) Given the following molecule and the given formula mass. If you have 0.2334 grams of the molecule, how many moles do you have? Show work.

NaHCO<sub>3</sub> (FW = 84.01 g/mol)