

CHEMISTRY YEAR 10 – FINAL TEST REVISION 2

NAME \_\_\_\_\_

PART A:

Use the following relative atomic masses if required.

Cl 35.5      O 16      H 1      C 12      Be 9      N 14      Fe 56      K 39

Avogadro's No is  $6.02 \times 10^{23}$

1. What is the molecular mass of:
  - a.  $\text{Cl}_2$  71 (1)
  - b.  $\text{Fe}(\text{OH})_3$  107 (1)
  - c.  $\text{K}_2\text{CO}_3$  138 (1)
  
2. In 99.75g of  $\text{Be}(\text{NO}_3)_2$  ~~0.25 mol~~
  - a. How many moles of  $\text{Be}(\text{NO}_3)_2$  are there? 0.75 mol (1)
  - b. How many moles of  $\text{NO}_3$  ions are there are? 1.5 mol (1)
  - c. How many moles of O atoms are present? 4.5 mol (1)
  - d. What mass of oxygen is present? 72g (1)
  
4. What number of molecules is present in 2.5 mole of  $\text{O}_2$  gas? ~~1.505~~  $1.505 \times 10^{24}$  (1)
  
5. What number of atoms is present in 2.5 mole of  $\text{O}_2$  gas?  $3.01 \times 10^{24}$  (1)
  
6. How many moles are present when there are  $1.0535 \times 10^{23}$  particles of any compound? (1)  
0.175 mol

PART B:

Use the following relative atomic masses if required.

Al 27      O 16      H 1      C 12      Ca 40      N 14

Avogadro's No is  $6.02 \times 10^{23}$  Molar volume of a gas at STP is 22.4 L

1. Calculate the number of moles of  $\text{CO}_2$  gas present at STP in 4.1888 L. 0.187 mol (1)
2. What is the mass of  $\text{CO}_2$  present in 4.1888 L? 8.23g (2)
3. What is the **number** of molecules present in 4.1888 L of  $\text{CO}_2$ ?  $1.13 \times 10^{23}$  (2)
  
4.
  - a. How many moles of  $\text{CaCO}_3$  are present 72 g? 0.72 mol (1)
  - b. How many moles of O atoms are present? 2.16 mol (2)
  - c. What mass of oxygen is present? 34.56g (2)
  - d. Which element contributes least to the mass? Carbon (1)

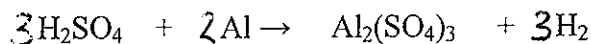
PART C:

Use the following relative atomic masses if required.

O 16      H 1      C 12      Ca 40      S 32

Molar volume of a gas at STP is 22.4 L

1. Sulphuric acid and Aluminium combine as shown below in the unbalanced equation:

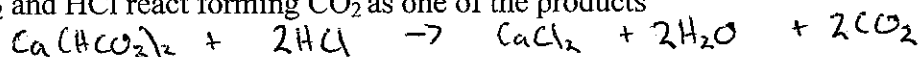


- a. Balance the equation.

When 2.8 moles of  $\text{H}_2\text{SO}_4$  are reacted:

- b. How many moles of Hydrogen are produced?  $2.8 \text{ mol}$  (1)  
 c. How many moles of Aluminium are consumed?  $1.87 \text{ mol}$  (1)  
 d. How many moles of Aluminium Sulphate will form?  $0.93 \text{ mol}$  (1)

2.  $\text{Ca}(\text{HCO}_3)_2$  and  $\text{HCl}$  react forming  $\text{CO}_2$  as one of the products



- a. Write a balanced equation when  $\text{Ca}(\text{HCO}_3)_2$  and  $\text{HCl}$  react. (2)  
 b. What mass of  $\text{CO}_2$  is released when 40g of  $\text{Ca}(\text{HCO}_3)_2$  is placed in 6 moles of  $\text{HCl}$ ? (3)  $21.7 \text{ g}$   
 c. What volume does this  $\text{CO}_2$  occupy at STP?  $11.1 \text{ L}$  (2)

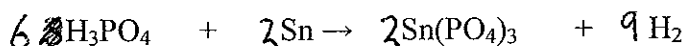
PART D:

Use the following relative atomic masses if required.

O 16      H 1      C 12      Cu 65      P 31      Sn 119

Molar volume of a gas at STP is 22.4 L

2. Phosphoric acid and Tin (VI) combine as shown below in the unbalanced equation:

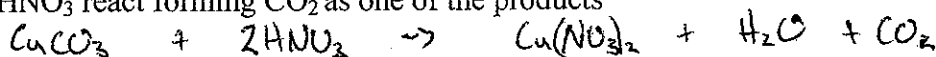


- a. Balance the equation.

When 2.5 moles of  $\text{H}_3\text{PO}_4$  are reacted:

- b. How many moles of Hydrogen gas are produced?  $3.75 \text{ mol}$  (1)  
 c. How many moles of Tin are consumed?  $0.83 \text{ mol}$  (1)  
 d. How many moles of Tin Phosphate will form?  $0.83 \text{ mol}$  (1)

3.  $\text{CuCO}_3$  and  $\text{HNO}_3$  react forming  $\text{CO}_2$  as one of the products



- a. Write a balanced equation when  $\text{CuCO}_3$  and  $\text{HNO}_3$  react. (2)  
 b. What mass of  $\text{CO}_2$  is released when 350g of  $\text{CuCO}_3$  is placed in 8 moles of  $\text{HNO}_3$ ? (3)  $123.2 \text{ g}$   
 c. What volume does this  $\text{CO}_2$  occupy at STP?  $62.7 \text{ L}$  (2)