GATITU MIXED SECONDARY SCHOOL

CHEMISTRY FORM THREE

C.A.T II TERM II 2013

NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ADM:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_DATE:\_\_\_\_\_\_

1. (a) Define the Mole. (2mks)

(b)How many grams of calcium contain 3.c x 1023 atoms?

(L=6.0x1023 Ca=40) (3mks)

(c)Given the Avogadro’s number L=6.0x1023 Mol-1, calculate the number of atoms in:

i) 5 Moles of Sulphur. (2mks)

ii) 0.25 moles of Nitrogen atoms (2mks).

(d)How many moles of sulphur iv oxide molecules,SO2 present in 16g of Sulphur ( iv) Oxide?

How many moles of atoms are there in it? (3mks)

2. (a) Define the following terms.

(i) Empirical formula (1mk)

(ii)Molecular formula (1mk)

3. A substance contains 25.6% Copper,12.8% Sulphur,25.6% Oxygen amd and 36% water of crystallization. Work out the empirical formula. (3mks).

4. Commercial hydrochloric acid is 35% by mass. Calculate its Molarity given that at 250C,the density of the acid is 1.08g/cm3.(3mks)

4.25cm3 of a solution containing 1.86 g of a metal carbonate in 250cm3 exactly reacted with 27cm3 of HCL containing 3.65 g/L of hydrochloric acid.

X2Co3 (aq) + 2HCL (aq)\_\_\_\_\_\_\_\_\_\_2XCl2 (aq) + H2O(l) + CO2 (aq)

1. Calculate the formula mass of X2CO3. (3mks)
2. Find the relative atomic mass of X. (3mks)
3. Identify element X. (1mk)

5. Determine the volume of hydrogen gas formed when excess iron is added to 200cm3 of 1.5 M hydrochloric acid. (M.G.V=24dm3 (3mks)

6. Define the following terms (4mks)

(a)Allotropy

(b)Allotrope

( c) Isotope

(d)Relative Atomic Mass (RAM)

7. Graphite and diamond are allotropes of Carbon. Explain why graphite is used as a lubricant whereas diamond is used as an abrasive. (4mks)

8. State the difference between electrovalent bond and covalent bond (2mks)

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| **Electrovalent bond** | **Covalent bond** |
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