**ELERAI MCK GIRLS SECONDARY SCHOOL**

**P O BOX 435**

**SULTAN-HAMUD**

**Motto: “Discipline and hard work for excellent”**

**CHEMISTRY FORM 3**

**OPENING CAT I TERM II 2013**

1. The table below gives the atomic number of element WXYZ the letters are not the actual symbols of elements. Study it and answer the question that follow.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Element | w | x | y | z |
| Atomic number | 9 | 10 | 12 | 19 |

1. Which element is inert? Explain (2mks)
2. Which element is the most reactive with oxygen (1mk)
3. Which element has largest atomic radius. Explain (2mks)
4. Write the observation made when Z is burned in oxygen (1mk)
5. Draw the structure of the compound formed when Z react with W (2mks)
6. State the difference in terms of electrical conductivity between carbon iv oxide and solution of compound in (V) above. (1mk)

b) Silicon has three isotopes X silicon – 29, silicon – 30. Their percentage abundance is 92% and 3% respectively

i) given that the relative atomic mass of silicon is 28.11. Determine the value of X (3mks)

1. Study the flow chart below and answer the questions that follow.
2. Draw the structure formula of D (1mk)
3. State the type of reactive in step (4mks)

I…………………………………………………………………

II………………………………………………………………..

IV………………………………………………………………..

V………………………………………………………………..

1. Name the reagent used in step (2mks)

III………………………………………………………………..

IV……………………………………………………………….

1. Write the equation for the reaction when D is converted to E (1mk)
2. Bromine reacts with both propane and Butane. Name the type of reaction that takes when propane reacts with one mole of bromine and name the product (2mks)
3. Zinc sulphate can be used as a dietary supplement in cases of suspected salt and is readily soluble in water. In an experiment to determine the extend of hydration. Elizabeth lab technician carefully heated 3.175g of crystals in moderated temperature until no further loss in mass occurred. The anhydrous zinc sulphate had a mass of 2.08g.
4. How many moles of zinc are there in 2.08g of zinc sulphate (Zn=65, O=16, S=32, H=1) (2mks)
5. How many moles of water were lost (2mks)
6. Calculate the value of n in formula ZnSo4.nH2O (2mks)
7. If the daily intake of Zinc in Kenya is 15mg per adult person. Determine the mass of Zinc sulphate crystals that would be needed to obtain this intake. (2mks)

Sodium hydroxide pellets were accidentally mixed with sodium chloride.17.6g of mixture was dissolved in water to make one litre of solution 100cm3of the solution was neutralized by 40cm3 of 0.5 m sulphuric acid.

1. write an equation for the reaction that took place.1mk

ii)calculate the:

1. Number of moles of the number of moles of substance that reacted .2mks
2. How many moles of substance that reacted with sulphuric acid would be in one liter of solution? 2mks
3. Determine the percentage by mass of sodium chloride in mixture (2mks)