**CHOGORIA MURUGI JOINT EXAMINATION**

**CHEMISTRY PAPER 3 CONFIDENTIAL**

***INSTRUCTIONS***

In additional to the apparatus and fittings common in a chemistry laboratory, each candidate will require the following.

* About 150ml of solution labelled **A**.
* About 100ml solution labelled **B**.
* About 50ml of solution labelled **C**
* About 0.2g of sodium hydrogen carbonate in a stoppered container.
* About 0.5g of solid **M** in a stoppered container.
* About 0.5g of solid **G** in a stoppered container
* 0 – 50ml burette.
* 25ml pipette.
* Two 250ml conical flasks
* 250ml volumetric flask
* 10ml measuring cylinder.
* Six test tubes on a test tube rack.
* A boiling tube.
* test tube holder.
* Complete stand.
* A white tile.
* One metallic spatula.
* Distilled water in a wash bottle.
* One label

**Access to:**

* Source of heat.
* Universal indicator paper and **its pH chart**.
* 2M aqueous ammonia supplied with a dropper.
* 2M aqueous sodium hydroxide supplied with a dropper.
* Pb(NO3)2 (aq) supplied with a dropper
* Acidified potassium manganate (VII) supplied with a dropper.
* Bromine water supplied with a dropper.
* 2M dilute nitric (V) acid.
* Methyl orange indicator with a dropper
* Phenolphthalein indicator with a dropper
* Sodium chloride solution

***NB:***

1. Solution **A** is prepared by dissolving 4.3 cm3 of concentrated HCl (1.18g/cm3) to 500 cm3 of water and dilute to 1 litre.
2. Solution **B** is prepared by dissolving 1.2g of NaOH pellets in about 600ml of distilled water and diluting to 1 litre.
3. Solution **C** is prepared by dissolving 62.9g of Na2CO3.10H2O in about 800ml of distilled water and then topping up to 1 litre.
4. Acidified potassium permanganate is prepared by dissolving 3.5g of KMnO4 (s) in 200cm3 of 2M H2SO4(aq) and toping up to one litre solution.
5. 2M H2SO4 (aq)  is prepared by diluting 110cm3 of concentrated Sulphuric (VI) acid to make one litre of solution.
6. 2M NaOH(aq) is prepared by dissolving 80g of NaOH pellets in one litre of solution.
7. 2M HNO3 is prepared by adding 128 cm3 of Conc. HNO3 to about 500ml of water and dilute to 1 litre.
8. Sodium chloride solution is prepared dissolving 5.85g of NaCl in 1 litre of water
9. Lead (II) nitrate solution is prepared by dissolving 30g of Pb(NO3)2 in 1litre of water
10. Solid **M** is aluminium sulphate
11. Solid **G** is maleic acid.