**CONFIDENTIAL**

**INSTRUCTIONS**

***In addition to the equipment, apparatus and chemicals found in the chemistry laboratory each candidate will require the following:***

1. About 80 cm3 of solution A
2. About 100 cm3 of solution B
3. About 1g of solid C
4. 1 pipette(25mls) & pipette filler
5. 1 burette (50mls)
6. 2 conical flasks (250mls)
7. Complete stand
8. White tile
9. Distilled water
10. Phenolphthalein indicator
11. 7 clean test-tubes in a rack
12. About 1g of solid D
13. 1 boiling tube
14. A metallic spatula
15. A blue and a red litmus paper
16. **Access to;**
    * 2.0M NaOH solution with a dropper
    * 2.0M ammonia solution with a dropper
    * 2.0M nitric (v) acid with a dropper
    * 1.0M barium chloride solution with a dropper
    * Bromine water with a dropper
    * Acidfied potassium manganate (vii) with a dropper
    * 1.0M lead (ii) nitrate solution with a dropper
    * 1.0M Sodium sulphate solution sulphate with a dropper
    * 2.0M HCl with a dropper
    * A blue and a red litmus papers
    * A filer funnel
    * A filter paper

***Notes:***

* ***solution A is sulphuric acid 0.12M***
* ***solution B is 0.2M sodium hydroxide***
* ***solid C is mixture of Zinc sulphate and Lead (ii) carbonate ratio o.f 1:2***
* Solid D is malleic acid
* Acidified KMno4 is made by dissolving 2g in 400cm3 of 2.0M H2SO4 then topping to one litre with distilled water