**BUTULA SUB – COUNTY JOINT EXAM.**

**CHEMISTRY – 233/3**

**PAPER 3**

**CONFIDENTIAL**

In addition to the fitting and apparatus found in the Chemistry laboratory, each student will require the following

1. Solution **A**; About 150ml of 0.02M acidified potassium manganate(VII)
2. Solution **B**; About 100ml of ammonium iron (II) sulphate.
3. Solution **C**; About 70ml of 0.25M oxalic acid
4. Solid **P**; Mixture of zinc carbonate(ZnCO3) and sodium sulphite (Na2SO3) in the ratio 1:1
5. Solid **T**; maleic acid
6. Burette
7. Pipette
8. 250ml Conical flask (2)
9. 10ml measuring cylinder
10. Thermometer
11. Boiling tube
12. Test tubes(6)
13. Filter funnel
14. Filter paper
15. Nichrome wire
16. Distilled water
17. Spatula
18. PH chart
19. Test tube holder

**Access**

* 2M sodium hydroxide
* 2M ammonia solution
* Barium nitrate solution
* Dilute nitric (V) acid
* Acidified potassium manganate (VII) solution
* Universal indicator
* Solid Sodium hydrogen carbonate
* Source of heat
* Warm water bath.

**Note:**

1. Solution **A** is prepared by dissolving 3.2g of KMnO4 in 400cm3 of 1M sulphuric (VI) and diluting to one litre of solution using distilled water.(0.02M)
2. Solution **B** is prepared by dissolving 23.52grams of hexahydrous ammonium iron (II) sulphate in 400cm3 of distilled water and diluting to one litre of solution.(0.06M)
3. Solution **C** is made by dissolving 31.5grams of oxalic in about 400cm3 of distilled water and diluting to one litre of solution.(0.25M)