**233/3 CHEMISTRY PAPER 3 PRACTICAL**

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In addition to the other common apparatus and reagents found in a chemistry laboratory, each candidate will require the following.

1. About 100cm3 of 0.125M Hydrochloric acid labelled solution Q.
2. Accurately weighed 2.65g of unhydrous sodium carbonate labeled solid N.
3. 250ml volumetric flask.
4. 100ml measuring cylinder.
5. Distilled water
6. 250 ml empty glass beaker
7. Glass rod
8. 1 label
9. One burette (0-50ml)
10. One 25.0 ml pipette
11. Two conical flasks (250 ml)
12. Methyl orange indicator
13. Retort stand
14. Pipette filler
15. A white tile
16. 6 dry test tubes
17. 1 boiling tube
18. One filter funnel
19. 0-1100C thermometer
20. 1 metallic spatula
21. About 60cm3 of 1M Sulphuric(vi)acid labeled solution D.
22. About 60cm3 of 2M sodium hydroxide solution labeled solution C.
23. 250 ml plastic beaker empty.
24. About 0.5g of solid Z.
25. About 1.5g of solid A.
26. 1 red and 1 blue litmus paper.
27. About 0.2g of sodium hydrogen carbonate.
28. 1 filter paper.

**Access to:**

1. 2M NaOH with a dropper.
2. 2M Ammonia solution with a dropper.
3. 0.25M Barium nitrate solution with a dropper.
4. 0.2M Lead (ii) nitrate solution with a dropper.
5. 0.02M acidified Potassium Manganate (vii) with a dropper.
6. 1M Nitric(v) acid.

**NOTE:**

1. Solid A is a mixture of zinc carbonate and Sodium Sulphate in the ratio 1:1.
2. Solid Z is oxalic acid.
3. Solution Q is 0.125M Hydrochloric acid prepared by dissolving 10.75cm3 of concentrated hydrochloric acid in 1 litre.
4. Solution D is 1M Sulphuric (vi) acid prepared by dissolving 55 cm3 of concentrated sulphuric (vi) acid in 1 litre of solution (Density of Sulphuric acid is 1.84 g/cm3).
5. Solution C is 2M sodium hydroxide prepared by dissolving 80g of sodium hydroxide pellets in 1 litre of solution.
6. 2 M Ammonia solution is prepared by dissolving 112cm3 of concentrated ammonia solution in 1 litre of solution.
7. 0.25M Barium nitrate is prepared by dissolving 65g of Barium nitrate in 1 litre of solution.
8. 0.2M lead(ii)nitrate is prepared by dissolving 66.2g of lead(ii)nitrate in a litre of solution.
9. 1 M nitric acid is prepared by dissolving 64cm3 of concentrated Nitric(v) acid in 1 litre of solution.
10. 0.02M acidified potassium manganate(vii) is prepared by dissolving 3.2g of the solid in 2.00cm3 of 2M sulphuric(vi) acid then diluting to 1 litre.