**FORM THREE**

**CONFIDENTIAL 2022**

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

1. About 100cm3 of 0. 2M Sodium hydroxide solution.
2. About 200cm3 of 0.2M hydrochloric acid solution labeled solution X.
3. About 100cm3 of 0.1M sodium carbonate solution labeled solution Y.
4. One burette (0 - 50ml)
5. One 25.0ml pipette
6. One filter funnel
7. Retort stand
8. Pipette filler
9. Phenolphthalein indicator
10. Two conical flasks (250 ml)
11. White tile
12. 6 dry test tubes
13. 1 boiling tube
14. Metallic spatula
15. 1.5g of solid A
16. 1g pf solid M
17. About 0.2g of sodium hydrogen carbonate
18. Distilled water
19. 1 wooden splint
20. 1 red and 1 blue litmus paper

**Access to:**

1. Means of heating
2. 2M ammonia solution with a dropper
3. 2M nitric(v) acid with a dropper.
4. Acidified potassium manganate(vii) with a dropper.
5. Acidified potassium dichromate(vi) with a dropper.
6. Universal indicator with a dropper.
7. Standard PH chart
8. 0.2M lead(ii)nitrate solution

**NOTE**

1. Solid A is a mixture of Zinc carbonate and anhydrous zinc sulphate in the ratio 1:1.
2. Solid M is oxalic acid
3. Solution X is 0.2M Hydrochloric acid prepared by dissolving 17.2cm3 of concentrated hydrochloric acid in 1 litre.
4. 0.2M sodium hydroxide is prepared by dissolving 8g of sodium hydroxide pellets in 1 litre.
5. Solution Y is prepared by dissolving 10.6g of sodium carbonate in 1 litre.
6. 0.2M lead(ii)nitrate solution is prepared by dissolving 66.2g of lead(ii)nitrate in 1litre of solution.
7. Acidified potassium manganate(vii) is prepared by dissolving 3.2g of potassium manganate(vii)in about 600cm3 of 2M sulphuric (vi) acid and diluting to one litre of solution.
8. Acidified potassium dichromate(vi) is prepared by dissolving 25g of solid potassium dichromate(vi) in about 600cm3 of 2M sulphuric (vi) acid and diluting to one litre of solution.
9. 2M ammonia solution is prepared by dissolving 112cm3 of concentrated ammonia solution in 1 litre.
10. 2M nitric(v) acid is prepared by dissolving 128cm3 of concentrated acid to water and make up to 1 litre.