**TERM 2 - 2023**

**CHEMISTRY**

**FORM FOUR (4) – 233/3**

**CONFIDENTIAL**

**In addition to the apparatus found in a laboratory, each candidate will require;**

1. 110cm3 of solution C1
2. 150cm3 of solution C2
3. 60 cm3 of solution C3
4. 80 cm3 of solution C4
5. 80 cm3 of solution C5
6. 50 cm3 of solution C6
7. 1.0 g of Solid D1
8. 0.5 g of Solid M1
9. A white tile
10. A test tube rack with 1 boiling tube and 8 test tubes
11. A burette
12. A 25 ml pipette
13. A pipette filler
14. A test tube holder
15. A stopwatch
16. A filter funnel
17. Two conical flasks
18. A 100 ml GLASS beaker
19. Distilled water in a wash bottle
20. A metallic spatula
21. Eight labels
22. A clean dropper
23. A wooden splint
24. A 1cm x 1cm aluminium foil
25. Red litmus paper.

**Access to the following bench reagents**

1. Universal indicator with a full range pH chart.
2. Acidified potassium dichromate (VI)
3. Bromine water
4. 2M sodium hydroxide solution
5. 2M aqueous ammonia
6. Aqueous barium nitrate
7. Source of heat

**Note:**

* Solution C1 is a 0.01897 M KIO3 solution.
* Solution C2 is a 0.1 M sodium thiosulphate.
* Solution C3 is 0.167 M acidified potassium iodide. Prepared by dissolving 27.722 g of potassium iodide in 200 cm3 of distilled water. It is acidified by adding 400cm3 of 2M sulphuric (VI) acid then distilled water is added to make up to a litre of solution.
* Solution C4 is starch indicator solution. Prepared by dissolving 20 g of starch powder in 100 cm3 of distilled water.
* Solution C5 is an acidified mixture of potassium iodide and sodium thiosulphate. It is made by dissolving a solid mixture containing 1.0 g of potassium iodide crystals and 1.0 g of sodium thiosulphate crystals in about 200 cm3 of distilled water. It is acidified by adding 400cm3 of 2M sulphuric (VI) acid then distilled water is added to make up to a litre of solution.
* Solution C6 is hydrogen peroxide solution. It is prepared by taking 200 cm3 of 10 volume hydrogen peroxide and adding 800 cm3 of distilled water to make a litre of solution.
* Solid M1 is 1.0 g of maleic acid in a stoppered container.
* Solid D1 is 1.0 g of a mixture of 0.5 g of zinc (II) nitrate and 0.5 g of zinc (II) sulphate crystals.

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