***Kenya Certificate of secondary Education***

***(K.C.S.E)***

**Sunrise 2 examination**

***CHEMISTRY PP3 PRACTICAL SEPTEMBER 2022***

***CONFIDENTIAL***

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

***A***

1. Exactly 4.0g of **solid P**
2. 100cm3 of **solution X**
3. About 0.5g of **solid R**
4. About 0.5g of **solid S**
5. 6 dry test-tubes (in a test tube rack)
6. 2 dry boiling tubes
7. 50ml burette
8. 25ml pipette
9. 100ml or 150ml glass beaker
10. 10ml measuring cylinder
11. One red and one blue litmus papers
12. 500cm3 distilled water in a wash bottle
13. One thermometer 100C-1100C
14. One 250ml volumetric flask
15. One label
16. Phenolphthalein indicator
17. Three conical flasks
18. A metallic spatula

***B***

Access to;

1. Bunsen burner
2. 2M NaOH(aq) in a dropper bottle
3. Aqueous ammonia NH3(aq) in a dropper bottle
4. 2M HCl(aq) in a dropper bottle
5. 0.2M Ba(NO3)2 solution in a dropper bottle
6. PH chart
7. Universal indictor solution in a dropper bottle
8. Acidified KMnO4 solution supplied with a dropper
9. Acidified K2 Cr2 O7 solution supplied with a dropper

***Preparations***

1. Acidified potassium manganate (VII) KMnO4 is prepared by placing 2.0g of solid KMnO4 in one litre of volumetric flask, adding 200cm3 of 2M H2SO4 to dissolve and diluting with distilled water.
2. Acidified potassium dichromate (VI) k2Cr2O7 is prepared by placing 25.0g of solid in a one litre volumetric flask and adding 200cm3 of 2M H2SO4 to dissolve then adding distilled water to the mark.
3. Solution X is prepared by placing 8.0g of solid X in a one litre volumetric flask and adding 800cm3 of distilled water shake to dissolve and add distilled water to the mark. Label this as solution X
4. Solid P: oxalic acid
5. Solid X: sodium hydroxide NaOH
6. Solid R: a mixture of ammonium sulphate and aluminium sulphate in the ratio 1:1 by mass
7. Solid S – Maleic acid