

**CONFIDENTIAL**

1. 180cm<sup>3</sup> of solution N HCl in a beaker.
2. 180cm<sup>3</sup> of solution M 0.2M NaOH in a beaker.
- 3.. 50cm<sup>3</sup> of solution D, 2M HCl in a beaker.
4. 100cm<sup>3</sup> of solution B, 0.1M Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> in a beaker.
5. 10cm<sup>3</sup> of 1M HNO<sub>3</sub> in a boiling tube.
6. Ethanol in a stopped container.
7. 5cm<sup>3</sup> of conc H<sub>2</sub>SO<sub>4</sub> in a test tubewith a dropper.
8. Exact 1g of solid X which is F<sub>2</sub>CO<sub>3</sub>
9. About 1g of solid L in a dry stoppered container
10. About 1g of solid Q in a stoppered container access to:
11. Methy orange in a dropper
12. 0.5M Ca(OH)<sub>2</sub> in a dropper.
13. 1M Pb(NO<sub>3</sub>)<sub>2</sub> in a dropper.
14. 2Ml NaOH solution in a dropper.
15. Distilled water in a wash bottle.
16. Acidified KMnO<sub>4</sub> in a dropper.
17. About 0.5g of Na<sub>2</sub>CO<sub>3</sub> per student.
18. Pipette (25cm<sup>3</sup>)
19. Burette.
20. Pipette filler.
21. 3 conical flasks.(250cm<sup>3</sup>)
22. Stand and clamp.
23. White tile.
24. 100cm<sup>3</sup> glass beaker.
25. Thermometer (-10 to 110<sup>0</sup>C)
26. 10cm<sup>3</sup> measuring cylinder.
27. 100cm<sup>3</sup> measuring cylinder.
28. Stop watch/ clock.
29. Plain white paper.
30. 2 boiling tube.
31. 6 test tubes in a test tube rack.
32. A glass rod.
33. Metallic spatula.
34. source of heat.

N/B

1. solid X, Solid L and solid Q to be provided by the examining authority.

**Preparation of solutions**

Solution N is prepared by dissolving 68.8ml of concentrated Hydrochloric acid in 500ml of distilled then top up to 1litre of solution.

2. 1M HNO<sub>3</sub> is prepared by 66ml of conc. HNO<sub>3</sub> in 500ml of distilled water then top up to make 1litre of solution
3. Acidified KMNO<sub>4</sub> is prepared by dissolving 3.16g of KMnO<sub>4</sub> in 400cm<sup>3</sup> of 2M H<sub>2</sub>SO<sub>4</sub> then topped up to 1litre of solution by distilled H<sub>2</sub>O.
4. 2M H<sub>2</sub>SO<sub>4</sub> prepared by dissolving 110cm<sup>3</sup> of conc. H<sub>2</sub>SO<sub>4</sub> in 500ml of distilled H<sub>2</sub>O then top to 1litre of solution.