**CONFIDENTIAL**

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| **Requirements for the student**In addition to the apparatus and fittings found in a chemistry laboratory, each candidate will require the following: |
| 1. | About 200 cm3 of solution **T.** |
| 2. | About 150 cm3 of solution R**.** |
| 3. | Three conical flasks. |
| 4. | Six clean dry test tubes. |
| 5. | One boiling tube. |
| 6. | A clean dry spatula. |
| 7. | 1.0g of solid **V** measured accurately and supplied in a stoppered container. |
| 8. | About 0.5g of solid F supplied in a stoppered container. |
| 9. | About 0.5g of solid H supplied in a stoppered container. |
| 10. | About 0.3g of sodium hydrogen carbonate supplied in a stoppered container. |
| 11. | A 50ml burette. |
| 12. | A 25ml pipette. |
| 13. | A pipette filler. |
| 14. | A means of labelling. |
| 15. | 100ml measuring cylinder. |
| 16. | 10ml measuring cylinder. |
| 17. | Blue and red litmus papers. |
| 18. | Distilled water. |
| 19. Test tube holder20.filter funnel21. clamp and stand22. white tile**Access to:** |
| 1. | Acidified potassium manganate (VII) supplied with a dropper. |
| 2. | 2M Ammonia solution supplied with a dropper. |
| 3. | Universal indicator and pH chart. |
| 4. | Hydrogen peroxide (20v/v) supplied with a dropper. |
| 5. | A source of heat. |
| 6. | Methyl orange indicator supplied with a dropper. |
| **Notes:** |
| 1. | Solution **T** is a 0.2M hydrochloric acid solution. |
| 2. |  Solution **R** is 0.2M sodium hydroxide solution. |
|  | 3. Solid V is a mixture of 0.5g calcium carbonate and 0.5g sodium chloride both measured accurately. |
| 4. | Solid H is ascorbic acid. |
| 5. | Solid F is hydrated ammonium iron ii sulphate. |

 6. Acidified KMnO4 prepared by dissolving 3.16g of KMnO4 in 400cm3 of 2M H2SO4 and topping up to 1litre with distilled water.