**SUNSHINE SCHOOL**

**233/3**

**CHEMISTRY PAPER 3**

**PRACTICAL**

**END TERM EXAM – OCT. 2015**

**TIME: 1 HOUR**

**NAME:………………………………………………………CLASS:….ADM NO:…………**

**Answer ALL question in the space provided.**

**20**

1. You are provided with;

You re required to calculate the relative atomic mass of M.

* 0.2M hydrochloric acid, solution P.
* 5.3g of a metal carbonate, M2CO3 dissolved in distilled water to form 500 cm3 of solution as solution Q.

Procedure:

Fill the burette with hydrochloric acid solution P. pipette 25cm3 of solution Q into a 250 ml conical flask. Add 2-3 drops of phenolphthalein indicator and titrate with solution P. record the results in the table below. Repeat the procedure tow more times to complete the table.

|  |  |  |  |
| --- | --- | --- | --- |
|  | I | II | III |
| Final burette reading |  |  |  |
| Initial burette reading |  |  |  |
| Volume of solution p used (cm3) |  |  |  |

(4 mks)

1. Calculate the average volume of solution P used. (1 mk)
2. Write an equation for the reaction that takes place. (1 mk)
3. Calculate the;
4. Number of moles of solution P in the average titre. (1 mk)
5. Number of moles of M2CO3 in 25 cm3 of solution Q. (1 mk)
6. Concentration of Q in moles per litre (molarity). (1 mk)
7. Concentration of Q in grams per litre. (1 mk)
8. The relative formula mass (RFM) of the M2CO3., (1 mk)
9. Relative atomic mass of metal M. (C = 12.0, O = 16.0) (1 mk)

2. (a) You are provided with solution R, S and T which contain halide ions (I- cl- br-)

You are required to identify each ion in the solution provided by carrying out the following experiment.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Experiment | Observations | Conclusion |
| (i) | Put about 2 cm3 of solution R in a test tube add 2-3 drops of lead (II) nitrate solution. | 1 mk | 1 mk |
| (ii) | Put about 2 cm3 of solution S in a test tube add 2-3 drops of lead (II) nitrate solution. | 1 mk | 1 mk |
| (iii) | Put about 2 cm3 of solution T in a test tube add 2-3 drops of lead (II) nitrate solution. | 1 mk | 1 mk |
|  |  |  |  |
| (b) | You are provided with solid X place a spatula of X in a petri dish and examine it loosely. | 1 mk | 1 mk |
| (ii) | To half a spatula of X add 2cm3 of distilled water followed by 2cm3 of lead (II) nitrate solution. | 1 mk | 1mk |