**TRIAL ONE EVALUATION TEST**

**CHEMISTRY PAPER 3 (PRACTICAL)**

**231/3**

**Marking scheme**.

Table 1

|  |  |  |  |
| --- | --- | --- | --- |
|  | I  | II | III |
| Final burette reading cm3  | 25.0 | 25.0 | 25.0 |
| Initial burette reading cm3 | 0.0 | 0.0 | 0.0 |
| Volume of solution N used  | 25.0 | 25.0 | 25.0 |

The marks are to be distributed as follows.

1. Complete table .................................................................................................................... (1mk)
2. Incomplete table with 2 titration’s done a ward ................................................................. (1mk)
3. Incomplete table with 1 titration done award...................................................................... ( ½ mk)

Penalize

* Wrong arithmetic
* Inverted table
* Burette reading above 50 unless explained.
* Unrealistic titre value i.e values in number in hundreds or below 1.0cm3
* Penalize ½ mark for each to a maximum of ½ mark each to a maximum of ½ mark once.

b) Use of decimals................................................................................................................. (1mk)

 i) Accept only 1 or 2 decimal places used contently otherwise penalize FULLY and award 0 mark.

 ii) If the two decimal places are used the 2nd decimal place be either “0” or “5” otherwise penalize fully.

1. Accuracy.............................................................................................................................. (1mk)

 Compare the candidate titre value with the teachers value. (1mk)

 Conditions

1. If at least one of the titre value is within  0.1cm3 of the teachers value awrd.... (1mk)
2. If no value is within o.1 of the teachers value but at least one is within 0.2 of teachers value award ........ ( 1mk)

Conditions

1. If 3 consistent titration are done and only two consistent and average award ................ (1mk)
2. If 3 titrations done and only two consistent and average award...................... (1mk)
3. If only two titrations’ done are consistently averaged award.............................(1mk)
4. If three titres are possible but only two averaged award................................... (0mk)
5. If 3 inconsistent titres are averaged award..........................................................(0mk)
6. If only 1 titration is done award............................................................................(0mk)

d) Final answers..................................................................................................................... (1mk)

 Compare the candidate’s correct average award.

1. If within 0.1 of the teacher value award.......................................................... (1mk)
2. If no within 0.1 of the teachers value but within  0.2 award....................... ( ½ mk)
3. If beyond 0.2 of the teacher’s value award...................................................... (0mk)

Calculation

(b) Moles of A used.

 Mol = $\frac{moles }{vol in litre }$

Moles = mol x $\frac{vol }{1000}$

= 1 x $\frac{25}{1000}$

= 0.025 moles.

c) Moles ratio 1:1

 Moles of B = 0.025 moles.

1. Mol = $\frac{moles }{vol in litres }$

= $\frac{0.025}{25}$

1000

= 1m.

**PROCEDURE 2:**

Table II condition to apply

Trend in temperature

Graph: condition to apply.

Answers

1. (a) Observation
* A colourless gas that turns moist red litmus paper blue.
* Moist blue litmus paper remain blue.
* Droplets of colourless liquid on cooler parts of the test-tube.

Inference

* Basic gas NH4+
* Z-hydrated salt.
1. Observation
* Dissolve to form a solution.

 Inference

* Soluble salt.
1. Observation
* White ppt soluble in excess.

Inference

Zn 2+,  Pb2+. Al 3+ present.

1. Observation
* White ppt insoluble in excess.

Inference

Pb 2+, Al3+ present.

1. Test
* Add solution of potassium iodide

Observation

* Yellow ppt.
1. Observation

No yellow ppt

Inference

Pb 2+ absent.

1. Observation

White ppt.

Inference

SO42- Present.

3. (a) observation

- solid melts and burne with sooty flame.

Inference.

 C = C - C = C- Unsaturation.

(b) Observation

- Solid dissolves to form colourless solution.

Inference

* Polar compound.
1. Observation

Purple colour of potassium permanganate decolourised.

Inference

C = C - C= C- , ROH.

1. Observation
* Pleasant smell.

 Inference

 RCOOH Present

 Observation

1. Effervescence / bubbles

Inference

RCOOH, HT present

1. Observation Inference

PH 4 - Weak acid

Inference .

* Weak acid.