**MARKING SCHEME**

**233/3**

**CHEMISTRY PRACTICAL**

**ARISE AND SHINE TRIAL ONE EXAM**

**March/April 2020**

1. (a). Table 1

Complete table 1mk

Decimal 1mk

Accuracy 1mk

Principal of averaging 1mk

4mks

(i). Determine the average volume of solution Z

Exp 1+tep 2 + Exp 31/2 = Final answer√1/2

3

(ii). No of moles of sodium hydroxide (solution Z)

Answer in (i)x0.5M √1/2

1000cm3

=Final answer √½

(iii). Find the number of moles of hydrochloric acid in 25.0cm3 of solution F.

No of moles of sodium hydroxide √1=No of moles of hydrochloric acid

Mole ratio= 1:1

Moles of Hcl=moles in (ii) above √1

(iv). Determine the no of moles of Hcl in 100cm3 of solution F 25cm3=moles in (iii) above ⁖100cm3=?

= 100cm3 x moles in (iii) above√1

25cm3

= Final answer √1

(v). Moles of Hcl in original 60cm3 of solution

Concentration of Hcl =1M

1000cm3 = 1M

Volume used =60cm3

60cm3 x 1M √ ½

1000cm3

=0.06 moles√ ½

(vi) Moles of Hcl that reacted with carbonate

No of moles in original-No of √½ moles of Hcl in (iv) solution above

=Final answer √½

(vii). Mass of carbonate that reacted with acid

Moles of Na2CO3=moles of Hcl in (vi) above

2

Mass of Na2CO3 = 106 x moles of Na2CO3

= final answer √1

1. Table 1 (4 marks)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time (sec) | 0 | 30 | 60 | 90 | 120 | 150 | 180 | 210 | 240 |
| **Temperature** | **18** | **20** | **21** | **33** | **37** | **37** | **37** | **42** | **48** |

Accuracy 1mk

Decimal points 1mk

Trend 1mk

Complete table 1

i). On the grid provided, plot a graph of time (Horizontal axis) against temperature (3 marks)

Labeling ½ mk

Scale ½ mk

Plots 1mk

Line 1mk

ii). From the graph, determine the melting point of solid M

**Showing on the graph ½ mk**

**Correct reading ½ mk**

iii). Name the type of heat change at the melting point 1mk

**Latent heat of fusion**

1. (a) (i).

|  |  |
| --- | --- |
| observations | inferences |
| Colourless liquid condenses on the cooler parts √½  -white solid √½  - Blue litmus paper turns red | Hydrated √½ salt  Acidic gas √½ gas produced |

(ii).

|  |  |
| --- | --- |
| observations | inferences |
| White √½ precipitate soluble√ ½ in Excess | Al3+√1,Pb2+,Zn2+ present |

3 mention =1

2 mention ½

1 mention 0

(iii).

|  |  |
| --- | --- |
| observations | inferences |
| No white precipitate formed (1mk) | Al3+√1/2 and zn2+√ ½ present |

(iv).

|  |  |
| --- | --- |
| observations | inferences |
| White precipitate formed √1 | SO42-,Cl-√1/2 present |

3.(b)(i).

|  |  |
| --- | --- |
| observations | inferences |
| Burns with a ½ yellow  Sooty flame | C=C, / -C √1/2 C- present |

(ii).

|  |  |
| --- | --- |
| observations | inferences |
| Solid dissolves√1/2 to for a colourless √½ solution | Polar compound√1 |

(iii).

|  |  |
| --- | --- |
| observations | inferences |
| Bromine water decolourised 1 | C=C,-C--C√1/2 present |

(iv).

|  |  |
| --- | --- |
| observations | inferences |
| Blue litmus √½ change to red  Red litmus √½ Remain red | H+/-COOH√1 |

(v)

|  |  |
| --- | --- |
| observations | inferences |
| PH 4/5/6 √1 | Weekly acidic √1 |