**(CZJISET)**

**MARKING SCHEME PAPER 3**

**PROCEDURE 1**

1.[a]2 moles →1000cm3$\frac{25×1}{1000}$=0.05 moles

 ? 25cm3

0.05 moles-250cm3$\frac{0.05×1000}{250}$=0.2m

**PROCEDURE II**

Complete table 1

Decimal 1

Arithmetic 1

Accuracy 1=0.2

[a]$\frac{12.5+12.5+12.5}{3}$=12.5cm3

[b] 0.2 moles→1000cm3$\frac{0.2m×25}{1000}$=0005 moles

 25cm3

[c]2NaoH [aq]+H2SO4[aq]→NaSO4[aq]+2H2O[l]

[d]Mole ratio

A:C C=0.0025moles

1:2 A=$\frac{0.005}{2}$=0.0025 moles

[e]0.0025→answer a=$\frac{0.0025×1000}{answer a}$

 1000

2. Table

Complete table 1

Decimal point 1

Trend 1

[a]Graph



Axis -$\frac{1}{2}$Mk each

Scale-$\frac{1}{2}$Mk each

Plotting 1 mk

Curve 1 mk

[b][i]answer from the graph

[ii] Use MCDθ

Mass=50$×$1=50g.

From MCDθ→50g$×\frac{4.2}{g}$ J/g/$°$C $× $answer in b [i] above.

[iii]Theoretical value is higher than the obtained value

Heat lost to the surrounding[1mk]

Heat absorbed by the apparatus[1mk]

3.[a]

|  |  |
| --- | --- |
| Observation | Inference  |
| It dissolves into$[\frac{1}{2}$]a colourless solution$[\frac{1}{2}$mk] | Soluble salt[$\frac{1}{2}]$NoCu2+,Fe2+ or Fe3+[$\frac{1}{ 2}mk$] |

[b]

|  |  |
| --- | --- |
| Observation  | Inference |
| White precipitate soluble in excess [1mk] | Pb2+,Zn2+,Al3+ ions present[ 2mks] for the 3  1mk for 2 0 mk for less than 2 |

[c]

|  |  |
| --- | --- |
| Observation | Inference |
| White precipitate insoluble in excess[1mk] | Pb2+,Al3+ ions present[1mk] |

[d]

|  |  |
| --- | --- |
| Observation  | Inference  |
| No Yellow precipitate formed[1mk] | Pb 2+ ions absent/ Al3+ present[1mk] |

[e]

|  |  |
| --- | --- |
| Observation  | Inference  |
| White precipitate [1mk] | SO42- ions[1mk] |
| Don’t dissolve on adding nitric acid |  |