**Term 2 - 2022**

**FORM 3**

**CHEMISTRY PAPER 3 (233/3)**

**MARKING SCHEME**

**QUESTION 1**

Table

i) Complete table

ii) Decimal place

iii) Principals of averaging

iv) Accuracy – Compare candidates values to school values (s.v)

* At least one value within $\pm $ 0.1 of s.v
* If within $\pm $ 0.2 of s.v

a) i) Average volume of solution A

* Final accuracy

ii) 1 x 60 = 0.24M or 0.24 moles/litre

 250

 iii) RFM of HCl = 1 + 35.5 = 36.5

 Concentration of HCl in g/litre

 = ans in a(ii) x 36.5 = ans

 1 litre

iv) ans in a(i) x ans in a(ii) = ans

 1000

b) i) Mole Ratio = 1 : 1

 no of moles of soln Q = ans in a (iv)

 ii) ans in b(i) x 1000 = ans

 25

 iii) ans in b(ii) x 750 = ans or $\frac{ans in b(i) x 750 }{25}= ans$

 1000

iv) 1 x 4.2 = ans

 ans in b(iii)

v) 16 + 1 = 17

 R.A.M of x = ans in b(iv) – 17

2[i]

|  |  |
| --- | --- |
| Observation | inference |
| Solid dissolves to form colourless solution | Coloured ions absent or Cu2+,Fe2+,Fe2+absent |

[ii]

|  |  |
| --- | --- |
| Observation  | Inference |
| White ppt which dissolves on excessto form colourless solution | Zn 2+,Pb2+,Al3+present |

[iii]

|  |  |
| --- | --- |
| observation | inference |
| White ppt formed which dissolves in Excess to form colourless solution | Zn2+ present |

[iv]

|  |  |
| --- | --- |
| observation | Inference |
| No white ppt formed | CO$\begin{matrix}2-\\3\end{matrix}$, SO$\begin{matrix}2 \\4 \end{matrix}$,absent |

[v]

|  |  |
| --- | --- |
|  |  |
| White ppt formed which dissolves on warmingTo form colourless solution | Cl$-$present  |

3.[a]

|  |  |
| --- | --- |
| Observation | Inference |
| Burns in yellow sooty smoky flame  | Unsaturated organic compound C=C , -C$≡C-$ present |

[b]

|  |  |
| --- | --- |
| observation | inferences |
| Does not dissolve it formsLayers  | Non polar organic Compound |

|  |  |
| --- | --- |
| observation | inferences |
| Purple Potassium Manganate (VII)colourless |  C$=$C , -C$≡C-,R-OH $present |