PAPER 3

CHEMISTRY

Form 4

Paper 3

MARKING SCHEME

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FORM 4 CHEMISTRY PRACTICAL

QUESTION 1

TABLE 1

- ✓ complete table CT **1 mk**
- ✓ decimal point D **1 mk**
- ✓ accuracy A (tied to school value)**1 mk**
- ✓ principal of averaging **1 mk**

a) i) Average volume / final accuracy 1(tied to school value)
NB theoretically expected value = 15.0 cm3

ii) $\frac{\mathbf{1M\ x\ 75\ cm3}}{\mathbf{250\ cm3}}$ **½ mk**

= 0.3M **½ mk**

b) $\frac{\textbf{Ans in (b)above X ans in (a)above½ mk}}{\mathbf{1000}}$ = ans **½ mk**

c) $2MOH_{(aq)} + H_2SO4_{(aq)} \longrightarrow M_2SO4_{(aq)} + H_2O_{(l)}$ **1mk**

d) Mole ratio = 2:1 **½ mk**

e) Moles of solution W = 2 x ans in a(iii) **½ mk**

f) $\frac{ans\ in\ b(i) x\ 1000 \textbf{½ mk}}{25}$ = ans **½mk**

g) $\frac{ans\ in\ (i) x\ 600}{25}$ **½ mk** = ans **½ mk**

h) $\frac{8.7}{ans\ in\ b\ (iii)}$ **½ mk** = RFM OF MOH **½ mk**

i) RAM of metal M = RFM -(16+1) **½ mk** = ans **½ mk**

QUESTION 2

TABLE 2

- ✓ complete table CT**1mk**
- ✓ decimal point D **1mk**
- ✓ trend (increasing time)**1mk**

j) 1/t row completed **1mk**

a) Graph

k) Plotting 1**mk**

l) Scale 1**mk**
Straight line touching origin (0,0) 1**mk**

b) Correctly read value from the graph 1**mk**

c) Correct reciprocal of value read from the graph 1**mk**

d) Rate at reaction increase with increase in concentration of the sodium thiosulphate because increase in concentration increases number of successfulcollisions

Question 3

i) Solid Q

a)

	Observation	**inferences**
i)	No white ppt formed ½ **mk**	Ca^{2+} Mg^{2+}, Pb^{2+}, Al^{3+} Zn^{2+} Absent **1mk**
ii)	Burns with a golden yellow flame ½ **mk**	Na^{+} confirmed **1mk**
iii)	White ppt formed ½ **mk**	Cl-, SO_4^{2-}, SO_3^{2-},CO_3^{2-}**1mk**
iv)	KMNO4 decolorized½ **mk**	SO_3^{2-}, Confirmed**1mk**
B(i)	Effervescence occurs ½ **mk**	CO_3^{2-}, SO_3^{2-}**1mk**
ii)	Yellow ppt formed½ **mk**	Pb^{2+} confirmed**1mk**

ii) Solid R

	Observation	**inferences**
a	Burns with a yellow sooty flame**½ mk**	=C = C = , = C̄ = C =**@1/2 mks**
B(i)	Dissolves**½ mk** forming a colorless solution**½ mk**	Polar substance**½ mk**
ii)	$KMNO_4$ decolorized**½ mk**	ROH, =C = C =, = C̄ = C = **1mk**
ii)	Effervescence**½ mk**	H^{+} or RCOOH**1mk**