

CHEMISTRY

Form 4

Paper 3

MARKING SCHEME

MARKING SCHEME FORM 4 CHEMISTRY PRACTICAL END OF TERM 2 2019

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) $\frac{1M \times 75 \text{ cm}^3}{250 \text{ cm}^3} = 0.3M$ **½ mk**
- b) $\frac{\text{Ans in (b) above} \times \text{Ans in (a) above}}{1000} = \text{ans}$ **½ mk**
- c) $2\text{MOH}_{(aq)} + \text{H}_2\text{SO}_{4(aq)} \rightarrow \text{M}_2\text{SO}_{4(aq)} + \text{H}_2\text{O}_{(l)}$ **1mk**
- d) Mole ratio = 2:1 **½ mk**
- e) Moles of solution W = 2 x ans in a(iii) **½ mk**
- f) $\frac{\text{ans in b(i)} \times 1000}{25} = \text{ans}$ **½mk**
- g) $\frac{\text{ans in (i)} \times 600}{25} = \text{ans}$ **½ mk**
- h) $\frac{8.7}{\text{ans in b (iii)}} = \text{RFM OF MOH}$ **½ mk**
- i) RAM of metal M = RFM - (16+1) **½ mk**
 $= \text{ans}$ **½ mk**

QUESTION 2

TABLE 2

- ✓ complete table CT **1mk**
- ✓ decimal point D **1mk**
- ✓ trend (increasing time)**2mk**
- ✓ 1/t row completed **1mk**

a) Graph

Plotting **1mk**

Scale **1mk**

Straight line touching origin (0,0)

- b) Correctly read value from the graph **1/2mk**
- c) Correct reciprocal of value read from the graph **1/2mk**
- d) Rate at reaction increase with increase in concentration of the sodium thiosulphate because increase in concentration increases number of successful collisions

Question 3

i) Solid Q

a)

	Observation	inferences
i)	No white ppt formed $\frac{1}{2}$ mk	Ca^{2+} Mg^{2+} , Pb^{2+} , Al^{3+} Zn^{2+} Absent 1mk
ii)	Burns with a golden yellow flame $\frac{1}{2}$ mk	Na^{+} confirmed 1mk
iii)	White ppt formed $\frac{1}{2}$ mk	Cl^{-} , SO_4^{2-} , SO_3^{2-} , CO_3^{2-} 1mk
iv)	KMnO_4 decolorized $\frac{1}{2}$ mk	SO_3^{2-} , Confirmed 1mk
B(i)	Effervescence occurs $\frac{1}{2}$ mk	CO_3^{2-} , SO_3^{2-} 1mk
ii)	Yellow ppt formed $\frac{1}{2}$ mk	Pb^{2+} confirmed 1mk

ii) Solid R

	Observation	inferences
a	Burns with a yellow sooty flame $\frac{1}{2}$ mk	=C=C= , =C=C= @1/2 mks
B(i)	Dissolves $\frac{1}{2}$ mk forming a colorless solution $\frac{1}{2}$ mk	Polar substance $\frac{1}{2}$ mk
ii)	KMnO_4 decolorized $\frac{1}{2}$ mk	ROH , =C=C= , =C=C= 1mk
ii)	Effervescence $\frac{1}{2}$ mk	RCOOH 1mk