POST MOCK TERM 3 2019

Kenya Certificate of Secondary Education (KCSE)

September 2019

233/3 MARKING GUIDE

TABLE 1

Magnesium ribbon	1st	2nd	3rd	4th	5th	6th
Time Taken (sec)	38.62	42.40	49.78	56.94	62.22	72.56
1/time (s-1)	0.026	0.024	0.020	0.018	0.016	0.014

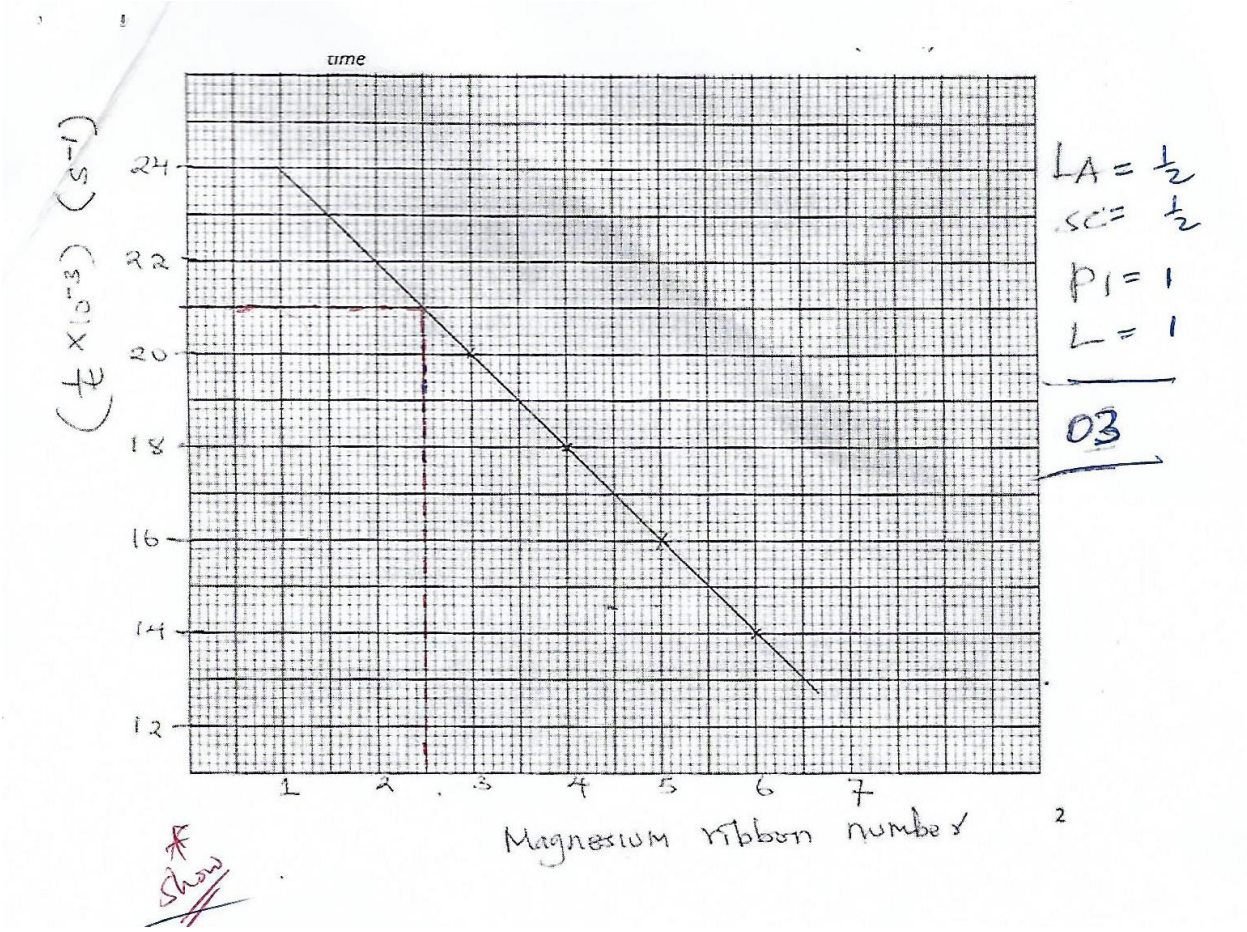
CT =02

DP=01

ACC=01

T =01

05



Mush show on the graph

i/t =21x10-3 √1 1

=47.62sec √1

TABLE II

	i	ii	iii

Final burette reading cm^3	19.1	19.0	19.2
Initial burette reading cm^3	0.0	0.0	0.0
Volume of solution N used (cm^3)	19.1	19.0	19.2

CT=01

DP=01

PA=01

AC=01

FA=01

(c) (i) $\frac{19.1+19.0+19.2}{3}$ √ ½ $\frac{}{3}$ =57.3 = 19.1cm^3√ ½

(ii) $\frac{0.2 \text{ moles} \times 25}{1000}$ = 0.005 moles

(iii) $NaOH(aq) + HCl(aq) \longrightarrow NaCl(aq) + H_2O(l)$

Moles of HCL = Moles of NaOH (mole ratio 1:1)

=0.005moles

iv)moles of HCL in 250cm^3 of solution

$\frac{0.005\text{moles} \times 250cm^3}{19.1}$√ ½ =0.0654 moles√ ½

Or Answer in (iii)x250cm^3

Av volume cm^3

(v) Moles of HCL in 50cm^3=

$\frac{2x50}{1000}$√ ½ =0.1 moles √ ½

(vi) Moles of hydrochloric acid in solution A that reacted with all pieces of Mg ribbon

0.1-0.0654 moles√ ½ = 0.0346 moles √ ½

vii)mass of magnesium ribbon used (must write equation and show mole ratio)

equation √ ½

Mole of magnesium = 0.0346 moles = $\frac{0.0173}{2}$ √ 1

0.0173x24= 0.4152g√ ½

Q2

observation	inferences
Solid dissolves√ ½ to form a clourless solution√ ½	Soluble solid √ ½
	Cu^{2+},Fe^{2+},Fe^{3+} present√ ½

observation	inference
No white ppt √ 1	Na^{+},k^{+},NH_4^{+} Present√ 1 (Accept Ca^{2+},Mg^{2+},Pb^{2+} absent) for √ ½

observations	inferences
burns with a golden yellow flame√ 1	Na^{+} present√ 1

observation	inference
White ppt√ 1	SO_3^{2-},SO_4^{2-},CO_3^{2-} Present√ 1

observation	inference
purple potassium manganate (VII) decolorized√ 1	SO_3^{2-}, present√ 1

Q3

Observation	inference
Liquid z burns with pale blue flame / non sooty flame $^{1}/_{2}$	-C=C- Present√ ½

observation	inference
forms one layer/ liquids are miscible√ ½	zis a polar substance√ ½

observation	inference
Red and blue litmus papers retain their colour√ ½	Z is neutral√ ½

observation	inference
PH=7√ 1	R-OH present√ 1

observations	inference
no effervescence√ ½	RCOOH absent /H^{+}√ ½

observation	inference
colour changes from orange to green √ 1	R-OH Confirmed√ 1