
FORM FOUR TERM ONE EXAM 2017

CHEMISTRY PAPER 3 MARKING SCHEME

SCHOOLS NET KENYA

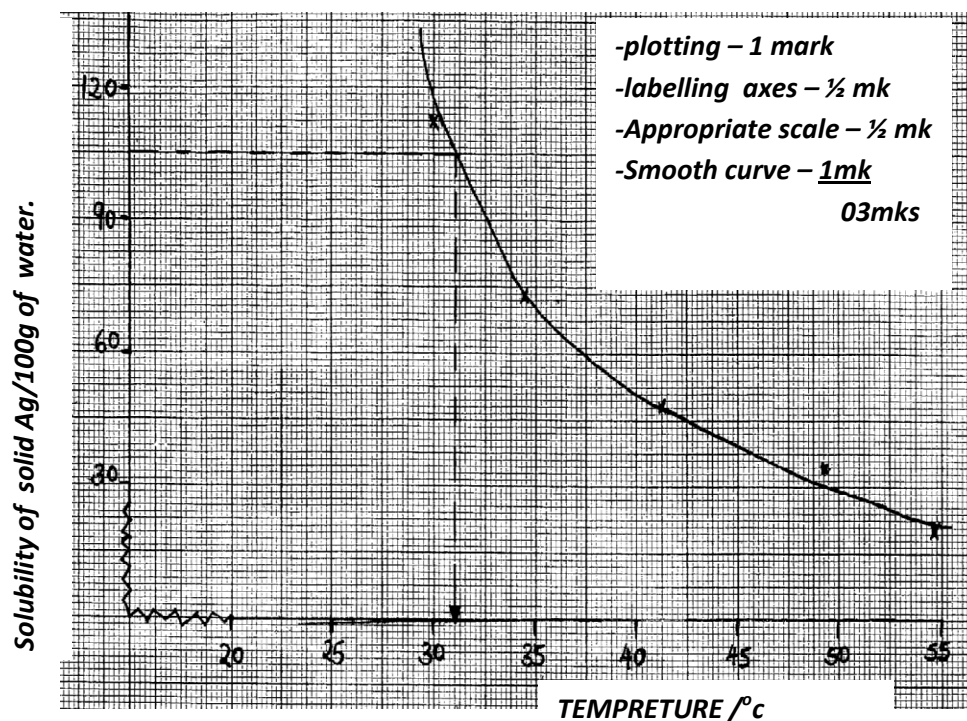
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CHEMISTRY PAPER 3 MARKING SCHEME

1. (d) (i) - Complete table I **1-2 marks**
 -Decimals **1mark**
 - Trends increasing **1mark**
 -Accuracy
 Allow initial temp $\pm 2^{\circ}\text{C}$
 deviation final temp $\pm 2^{\circ}\text{C}$
 of from school value
- 1mark**
05

Volume of $\text{H}_2\text{O}(\text{cm}^3)$	4	6	8	10	12
Temp/ at which crystal first appear($^{\circ}\text{C}$)	30	35	42	50	55
Solubility of Ag /100g water	112.5	75.0	56.25	45.0	37.5

(ii) Provide on graph paper attached



(iii) Solubility on the graph $\sqrt{1/2}$

-Extra value ie 31°C $\sqrt{1/2}$ 01

(e) Table II

1	2	3
18.2		

- Complete table – 1mark
- decimal -1Mark 1ST and 2ND rows only
- Accuracy ± 0.2 from S.V $\sqrt{1/2}$ mrk
 ± 0.1 from S.V $\sqrt{1}$ mrk
- Principle of averaging 1mrk

04

(ii) Showing correct working i.e.

Titre $\frac{(1) + (2) + (3)}{3} \sqrt{1/2}$ =ans = final answer $\sqrt{1/2}$

3

3

01

(iii) Number of moles of $\text{MnO}_4^- = \frac{0.06 \times \text{ans in e(ii)}}{1000} \sqrt{1/2}$

1000

01

A : MnO_4^-

5 2

$\frac{\text{answer in (iii)} \times 5 \sqrt{1/2}}{2} = \text{answer} \sqrt{1/2}$ 01

(v) 25cm³ of A contains average in (iv) moles

250cm³ will contain $\frac{(\text{ans in (iv)}) \times 250}{25}$ moles $\sqrt{1/2}$ =ans

$\therefore$ answer in (v) moles weight 4.5g

1mol of A $\frac{4.5 \sqrt{1/2} \times 1}{\text{Answer in (v)}} = \text{Answer} \sqrt{1/2}$ 02

(vi) M. $\text{XH}_2\text{O} = \text{answer in (v)} \sqrt{1/2}$

90 + X(18) = answer in (v)

18X = answer in (v) -90

$\therefore X = \frac{\text{answer in (v)} - 90}{18} \sqrt{1/2} = \text{Final answer}$

02

2 (a)

OBSERVATION	INFERENCES
(i) No white ppt√1	Al^{3+} , Pb^{2+} and Zn^{2+} ions absent√1 (<i>All the three tied</i>) Na^+ , K^+ , Ca^{2+} and Mg^{2+} ions Present.
(ii) No white ppt √1	Same as in (i) above √1
(iii) Burn with <u>a red flame</u> √1	Ca^{2+} , Li^+ ions present(any) √1
(iv) A white ppt √1	Ca^{2+} ions present √1
(v) A white precipitate ,which dissolve on warming√1	Cl^- ions present √1

(b)

OBSERVATION	INFERENCES
(i) Solid dissolves completely $\checkmark$ 1 forming a colourless solution. $\checkmark$ ½	Soluble substance $\checkmark$ 1 present
(ii) pH 5.5 $\checkmark$ 1 accept (5.0 -6.5)	A weak acid present $\checkmark$ 1
(iii) <u>Purple colour</u> of the Manganate (VII)) is Decolorized ($\checkmark$ ½)	$\begin{array}{c} \diagdown \quad \diagup \\ \text{C} \quad \text{C} \\ \diagup \quad \diagdown \end{array} \quad \equiv \quad \begin{array}{c} \diagdown \quad \diagup \\ \text{C} \\ \diagup \quad \diagdown \end{array}$ R – COOH Present (any two) $\begin{array}{c} \diagdown \quad \diagup \\ \text{C} = \text{C} \\ \diagup \quad \diagdown \end{array} \quad \equiv \quad \begin{array}{c} \diagdown \quad \diagup \\ \text{C} \\ \diagup \quad \diagdown \end{array}$ COOH present (any two)
(iv) Changes from orange $\checkmark$ ½ to green $\checkmark$ ½	
(V) effervescence $\checkmark$ 1	COOH $\checkmark$ 1 confirmed reject $\begin{array}{c} \\ \text{C} \\ \end{array} = \begin{array}{c} \\ \text{C} \\ \end{array} \quad \text{and} \quad \begin{array}{c} \\ \text{C} \\ \end{array} \equiv \begin{array}{c} \\ \text{C} \\ \end{array}$ penalize fully