WAKISSHA JOINT MOCK EXAMINATIONS
MARKING GUIDE
Uganda Certificate of Education
CHEMISTRY 545/3
UCE July / August 2015

1. **Results**

Time(minutes)	0	30	60	90	120	150	180	210
Temperature(^{O}C)	28.0	30.0	33.0	35.0	36.0	36.0	36.0	36.0

04marks

(b) See graph.

Labelling axes =2x$\frac{1}{2}$= 01mark

Scale =2x$\frac{1}{2}$=01mark

Plotting =8x$\frac{1}{4}$=02marks

Shape =1x0$\frac{1}{2}$=0$\frac{1}{2}$

$04^{1}/_{2}$marks

(c) Highest temperature change = (36.0-28.0)^{0}C

= 8.0^{0}C 01marks

(d) Heat of reaction =MCθ

= (40X4.2X8) J

= 1344J

= 1.344KJ 01mark

(e) (i) 1600KJ produced by 1mole of Q

1.344KJ will be produced by $\frac{1}{1600} \times 1.344$

=8.4×10^{-4}moles 2marks

(ii) 1 mole of Q weighs 24g

8.4X10^{-4} moles of Q will weigh (24X8.4X10^{-4})g=0.02g

01$\frac{1}{2}$mark

TOTAL MARKS = 14

Test	Observation	Deduction	Marks
(a)	A green solid decomposes a colourless liquid form and turns while anhydrous copper(II) sulphate blue.A colourless gas that turns moist blue litmus pink/red and lime water milky, black residue is formed.	Cu^{2t} or Fe^{2t} Hydrated salt CO_2 gas evolved CO^{2-}_3 CuO/Cu	04
(b)	Partially soluble Green residue Blue filtrate	 Cu^{2+} /Fe^{2+} Cu^{2t}	02
(c) (i)	A white ppt	SO^{2-}_4or CL^-	01
(ii)	No observable change	SO^{2-}_4 absent	01
(iii)	Add dilute nitric acid followed by silver nitrate solution. a white ppt	CL^- confirmed	$01\frac{1}{2}$
(d)	A green solid dissolves with effervescence of a colourless gas Then turns moist blue litmus pink /red and lime water turns milky	CO_2 gas evolved CO^{2-}_3 confirmed	
	A blue solution is formed	Cu^{2+}	01
	A blue insoluble in excess	Cu^{2+}	01
(d)(i)	A pale blue ppt insoluble in excess	Cu^{2+}	01
(ii)	Blue ppt soluble in excess to form a deep blue solution	Cu^{2+} confirmed	$1\frac{1}{2}$
(e)(i)	Cation Cu^{2+}		$0\frac{1}{2}$
(ii)	Anions CO_3^{2-}	and Cl^-	01

NB:
Cu^{2+}must be confirmed in (a) and d (ii)
Cl^- must be confirmed in C (iii)
CO_3^{2-} must be confirmed in (a) and (d)

TOTAL 16

END