



*Rewarding Learning*

**ADVANCED**  
**General Certificate of Education**  
**2019**

---

**Chemistry**  
**Assessment Unit A2 3**  
*assessing*  
**Further Practical Chemistry**  
**Practical Booklet A**  
**[ACH31]**  
**THURSDAY 9 MAY, MORNING**

---

**MARK**  
**SCHEME**

		AVAILABLE MARKS			
1	(a) (i)	Initial burette reading recorded Final burette reading recorded Volume delivered recorded and calculated correctly Readings/volumes to one decimal place Units recorded Accurate titrations agree $\pm 0.2 \text{ cm}^3$ Each omission/error [-1]	[3]		
	(ii)	Correct calculation of the mean titre to at least one decimal place Unit essential [1] Accuracy of value (the value should be within the range $20.0\text{--}25.0 \text{ cm}^3$ ) [1]	[2]		
	(b)	(i)	(Colourless) solution turns brown. (White solid disappears/dissolves.)	[1]	
		(ii)	Add the sodium thiosulfate (solution) until the solution in the conical flask turns straw yellow, (then add starch) [1] (solution in conical flask) turns blue-black [1] Add the sodium thiosulfate solution dropwise until the solution (in the conical flask) turns colourless [1]	[3]	
		(iii)	$\frac{0.20}{\text{mean titre}} \times 100$ [1] Answer to two significant figures [1]	[2]	
	2	(a)	Green powder	[1]	
		(b)	Both masses recorded to one decimal place <b>and</b> the first mass $10(\pm 0.5) \text{ g}$	[1]	
		(c)	(i)	(Green) solid turns black/solid moves/colourless liquid at the top of the boiling tube	[2]
			(ii)	Mass recorded to one decimal place, correct subtraction <b>and</b> mass decrease of between 10 and 35% i.e. if $10.0 \text{ g}$ was transferred to the boiling tube then the mass decrease should be $1.0\text{--}3.5 \text{ g}$	[1]
		(d)	(i)	Black solid disappears/dissolves [1] (Colourless) solution turns blue [1]	[2]
(ii)			Green solid disappears/dissolves [1] Bubbles/effervescence [1]	[2]	
(e)		(i)	A blue precipitate forms	[1]	
		(ii)	The blue precipitate disappears [1] and solution turns green [1]	[2]	
3		(a) (i)	pH 2–5	[1]	
		(ii)	(Yellow) colour disappears [1]/white solid formed [1]	[2]	
	(iii)	Solid disappears [1] bubbles/effervescence/fizzing [1] Colourless solution formed [1] max of 2	[2]		
	(b)	Yellow/orange flame [1] test tube coated with a black solid/turns black [1]	[2]		
	<b>Total</b>		<b>30</b>		

11

12

7