



*Rewarding Learning*

**ADVANCED**  
**General Certificate of Education**  
**2023**

---

## **Chemistry**

**Assessment Unit A2 3**

*assessing*

**Further Practical Chemistry**

**Practical Booklet A**

**[ACH31]**

**THURSDAY 11 MAY, MORNING**

---

**MARK  
SCHEME**

			AVAILABLE MARKS	
1	(a)	table with headings [1] units [1] volumes to 1 decimal place [1] titres correctly calculated [1] rough greater than accurates but no more than 2 cm <sup>3</sup> [1] concordant $\pm 0.1$ cm <sup>3</sup> [1]	[6]	10
	(b)	correct calculation of the mean titre to at least one decimal place and unit	[2]	
	(c)	blue-black [1] to colourless [1]	[2]	
2	<b>A = copper(II) sulfate</b>			
	(a)	(i) blue solid/crystals	[1]	15
		(ii) any <b>two</b> from: white/loss of blue colour [1] condensation/colourless liquid on boiling tube [1] crackle [1]	[2]	
	(b)	(i) blue ppt	[1]	
		(ii) ppt disappears [1] deep/dark blue solution [1]	[2]	
		(iii) deep blue solution	[1]	
		(iv) white [1] ppt [1]	[2]	
		(v) green/yellow (solution)	[1]	
		(vi) bubbles/fizzing [1] precipitate [1] initial temperature and units [1] higher final temperature and units [1]	[4]	
		(vii) brown	[1]	
	3	<b>X = glycine</b>		
	(a)	white solid/crystals	[1]	5
	(b)	1. colourless (solution) [1] 2. green/green-yellow [1] 3. dark(er) blue [1] solution 4. fizzing [1]	[4]	
			<b>Total</b>	<b>30</b>