



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	
	(i)	Volume delivered recorded and calculated correctly	
		Readings/volumes to one decimal place	
	(ii)	Units recorded	
		Accurate titrations agree $\pm 0.2 \text{ cm}^3$	
	(b) (i)	Each omission/error [-1]	[3]
		Correct calculation of the mean titre to at least one decimal place	
	(ii)	Unit essential [1]	
		Accuracy of value (the value should be within the range $20.0\text{--}25.0 \text{ cm}^3$) [1]	[2]
2	(b) (i)	(Colourless) solution turns brown. (White solid disappears/dissolves.) [1]	
		Add the sodium thiosulfate (solution) until the solution in the conical flask turns straw yellow, (then add starch) [1]	
	(ii)	(solution in conical flask) turns blue-black [1]	
	(iii)	Add the sodium thiosulfate solution dropwise until the solution (in the conical flask) turns colourless [1]	[3]
		$\frac{0.20}{\text{mean titre}} \times 100$ [1] Answer to two significant figures [1]	[2]
3	(a) (i)	Green powder	[1]
	(b) (i)	Both masses recorded to one decimal place and the first mass $10(\pm 0.5) \text{ g}$	[1]
		(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 and mass decrease of between 10 and 35% i.e. if 10.0 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]
	(ii)	Green solid disappears/dissolves [1] Bubbles/effervescence [1]	[2]
		(e) (i)	A blue precipitate forms
	(ii)	The blue precipitate disappears [1] and solution turns green [1]	[2]
		(a) (i)	pH 2–5
	(ii)		(Yellow) colour disappears [1]/white solid formed [1]
(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]	
Total			30

11

12

7