

# Acids, Bases and Salts

## Mark Scheme 2

<b>Level</b>	IGCSE
<b>Subject</b>	Chemistry
<b>Exam Board</b>	CIE
<b>Topic</b>	Acids, Bases and Salts
<b>Sub-Topic</b>	
<b>Paper Type</b>	Alternative to Practical
<b>Booklet</b>	Mark Scheme 2

**Time Allowed:** 57 minutes

**Score:** /47

**Percentage:** /100

Question	Answer	Marks	Guidance
1(a)	yellow/green;	1	R reference to ppt.
1b)	white precipitate;	1	
1(c)	green; precipitate;	1 1	
1(d)	green precipitate;	1	
1(e)	brown; precipitate;	1 1	
1(i)	silver /lead; nitrate;	1 1	

- 2 (a) table of results for Experiment 1
- initial and final volume boxes completed correctly (1) 0.0 and 16.8
- difference box correctly completed (1) 16.8
- all readings to one decimal place (1) [3]
- (b) table of results for Experiment 2
- initial (1) and final volume (1) boxes completed correctly 16.8 (1) and 25.2 (1)
- difference box correctly completed (1) 8.4 [3]
- (d) to colourless (1) [1]  
**not:** clear
- (e) coloured reacting mixture masks colour of phenolphthalein / reaction is finished / solution is acidic (1) [1]

- (f) carbonate / carbon dioxide present (1) [1]  
**allow:** hydrogencarbonate
- (g) 8.4 (1)  
**ecf:** titre 1 – titre 2
- cm<sup>3</sup> (1) [2]
- (ii) 16.8 (1) [1]  
**ecf:** 2 × titre 2
- (iii) twice volume of acid needed to react with T (1) [1]  
**ecf:** if (g)(i) or / and (g)(ii) wrong need quantitative link.  
**not:** more (unqualified)
- (h) (i) 67.2 cm<sup>3</sup> (1)
- 33.6 cm<sup>3</sup> (1)
- 4 × volume of solution R (1) [3]
- (ii) volume of acid used > 50 cm<sup>3</sup> / more than burette can hold (1)
- set up more than two burettes / 100.8 won't fit into 2 (1) [2]  
**allow:** impurities / contamination (1)

- 3 (a) table of results for Experiment 1  
initial volume completed correctly (1)  
**0** or **24.4**  
all readings to 1 decimal place (1) [2]
- (b) table of results for Experiment 2  
final volume completed correctly (1)  
6.1  
difference correct (1) [2]
- (c) (i) neutralisation (1) [1]  
**allow:** acid-base
- (ii) as an indicator/ to show end point (1) [1]
- (d) water to remove the solution A of acid (1)  
acid B to remove traces of water (1) [2]
- (e) (i) Experiment 1  
ecf from readings (1) [1]
- (ii) any correct comparison (1) [1]
- (iii) solution B more concentrated/ stronger (1) or converse  
less volume was needed (1) [2]
- (f) half value from table result for experiment 2 (1)  
 $\text{cm}^3$  (1) [2]
- (g) advantage: easy to use/ quick/ convenient (1)  
disadvantage: not accurate weight (1) [2]
- (h) same volume of each solution (1)  
add suitable reactant (1)  
expected observation (1)  
comparison (1) [4]  
note: e.g.  $10\text{cm}^3$  of each acid (1), add strip of magnesium/ named carbonate (1)  
effervescence (1), more rapid bubbles means stronger acid (1)