



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**CHEMISTRY**

**0620/61**

Paper 6 Alternative to Practical

**October/November 2016**

MARK SCHEME

Maximum Mark: 40

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**Published**

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<b>Question</b>	<b>Answer</b>	<b>Mark</b>
1(a)	electrodes	<b>1</b>
1(b)	bubbles / fizz / effervescence	<b>1</b>
1(c)(i)	more hydrogen twice as much hydrogen / half as much oxygen	<b>1</b> <b>1</b>
1(c)(ii)	water	<b>1</b>
1(d)	<i>lighted splint</i> no effect / brighter light for oxygen 'pops' for hydrogen <b>OR</b> <i>glowing splint</i> relights for oxygen no effect for hydrogen	<b>1</b> <b>1</b> <b>1</b> <b>1</b>

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<b>Question</b>	<b>Answer</b>	<b>Mark</b>
2(a)	table of results for Experiment 1 all temperature boxes completed correctly 22, 24, 26, 28, 30, 31, 30, 29, 28	<b>2</b>
2(b)	table of results for Experiment 2 initial and other temperature boxes completed correctly 20, 21, 22, 23, 24, 25, 24, 23, 22	<b>2</b>
2(c)	all points correctly plotted best-fit smooth line graphs labels	<b>2</b> <b>1</b> <b>1</b>
2(d)	value from graph (27 °C) shown clearly	<b>1</b> <b>1</b>
2(e)	phenolphthalein/litmus/suitable named indicator	<b>1</b>
2(f)	Experiment 1 / solution <b>N</b> solution <b>N</b> is a stronger acid / has a higher pH	<b>1</b> <b>1</b>
2(g)	measured results / temperature changes / results would be smaller <b>OR</b> larger / double volume needed to reach same temperature changes	<b>1</b>
2(h)	polystyrene is an insulator / copper is a (good) conductor	<b>1</b>
2(i)	source of error: heat losses / using a measuring cylinder improvement: lag or insulate / use burette	<b>1</b> <b>1</b>

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<b>Question</b>	<b>Answer</b>	<b>Mark</b>
3(a)	water present/hydrated	<b>1</b>
3(b)	no change/colour	<b>1</b>
3(c)(i)	white precipitate dissolves	<b>1</b> <b>1</b> <b>1</b>
3(c)(ii)	white precipitate no change	<b>1</b> <b>1</b>
3(d)	not a halide	<b>1</b>
3(e)	(aluminium) sulfate	<b>1</b>
3(f)	white (crystals)	<b>1</b>

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Question	Answer	Mark
4	<p><b>method adding Agri Lime to acid</b>  add weighed amount/known mass of Agri Lime <b>Q</b>  to a known volume of acid  with a named indicator added to the acid  until the indicator changes colour  note the mass of Agri Lime <b>Q</b> added  repeat with Agri Lime <b>R</b>  conclusion, e.g. 'the experiment using the smaller amount of Agri Lime is better'</p> <p><b>OR</b></p> <p><b>method adding acid to Agri Lime</b>  use weighed amount/known mass of Agri Lime <b>Q</b>  add acid to it gradually/from a burette  with a named indicator added to the acid  until the indicator changes colour  note volume of acid added  repeat with Agri Lime <b>R</b>  conclusion, e.g. 'the experiment using the larger volume of acid is better'</p>	6