

CAMBRIDGE
INTERNATIONAL EXAMINATIONS

NOVEMBER 2002

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK : 60

SYLLABUS/COMPONENT : 0620/6

**CHEMISTRY
(ALTERNATIVE TO PRACTICAL)**



UNIVERSITY of CAMBRIDGE
Local Examinations Syndicate

Question Number	Mark Scheme Details	Part Mark
1	<p>(a) A - spatula only (1)</p> <p>B - beaker only (1)</p> <p>C - <u>funnel</u> (1) <u>not</u> filter</p> <p>(b) more than enough to react (1) / residue</p> <p>(c) 6-7 (1)</p>	3 1 1
2	<p>(a) top box - sulphuric acid (1)</p> <p>bottom box - sodium chloride (1)</p> <p>(b) gas passed through water (1)</p> <p>gas is soluble in water (1)</p> <p>gas collected by upward delivery (1)</p> <p>gas is denser than air (1) mark independently</p> <p>(c) fume cupboard / goggles (1)</p> <p>or well-ventilated room / gloves</p>	2 2 2 2 1

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3		
(a)	Points correctly plotted (2), -1 for each incorrect. Smooth line graph, ignoring 3 minutes point (1)	3
(b)	Point at 3 minutes, 256.6g (1) not on curve (1)	2
(c)	gas given off (1)	1
(d)	to prevent loss of acid (spray) (1) / only gas out	1
(e)	<u>5 minutes</u> (1)	1
(f)	Sketch graph below original graph (1) levelling off at same mass (1)	2

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4 (a)	<p>Table of results.</p> <p>Initial temperatures correct (2) -1 for any incorrect</p> <p>18</p> <p>21</p> <p>19</p> <p>22</p> <p>Maximum temperatures correct (2)</p> <p>23</p> <p>24</p> <p>79</p> <p>22</p> <p>Differences correctly calculated (2) 5 3 60 0</p>	6
(a) (i)	magnesium (1)	1
(ii)	Greatest temperature rise (1)	2
	Observation - gas given off rapidly (1) / fastest	1
(iii)	Hydrogen (1)	1
	Experiment 2	
	Initial temperature 21 (1)	
	Maximum temperature 39 (1)	2

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4(b)	temperature rise (1)	1
(c)	redox / displacement (1)	1
(d)	least copper iron zinc most magnesium (1)	1
5(c)	catches fire / ignites (1) yellow / blue flame (1) / smoky	2
(d)	yellow (1) precipitate (1)	2
(e)	cream / white (1) precipitate (1) / yellow	2
(f)	organic (1) hydrocarbon (1) / alkane / alkene (1)	2
	2 max.	

Question Number	Mark Scheme Details	Part Mark
6 (a)	pipette / burette (1)	1
(b)	name (1) ^{not} eg Universal Indicator, litmus methyl orange phenolphthalein.	1
for litm	colour change (2) eg yellow to orange / pink (1) (1) blue (1) → purple (1) red (1) + colourless (1)	2
(c)	The acid (1) less needed to neutralise the KOH (1)	2
(d)	repeat experiment (1) without indicator (1) / charcoal evaporate solution (1) to crystallising point (1) max 3 max indicator = max 2 Achieved	3

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7	<p>known mass of fertilizer (1)</p> <p>Add known volume of water (1)</p> <p>Warm to 30°C (1)</p> <p>Stir (1)</p> <p>Filter (1) / evaporate to dryness</p> <p>Dry and weigh residue (1)</p> <p>Work out solubility (1)</p> <p>/ conclusion</p> <p style="text-align: right;">max 6</p>	<p style="text-align: right;">6</p> <hr/> <p style="text-align: right;">Total</p> <hr/> <p style="text-align: right;">60</p>