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**CHEMISTRY**

**0620/51**

Paper 5 Practical Test

**October/November 2016**

MARK SCHEME

Maximum Mark: 40

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**Published**

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>
1(a)	table of results for Experiment 1 initial and other temperature boxes completed correctly and results comparable to supervisor's and Experiment 1 maximum greater than Experiment 2 maximum	<b>1</b> <b>1</b>
1(b)	table of results for Experiment 2 initial and other temperature boxes completed correctly and comparable to supervisor's and temperatures stop rising	<b>1</b> <b>1</b>
1(c)	all points correctly plotted best-fit smooth line graphs labels	<b>2</b> <b>1</b> <b>1</b>
1(d)	value from graph shown clearly	<b>1</b> <b>1</b>
1(e)	phenolphthalein / litmus / suitable named indicator	<b>1</b>
1(f)	Experiment 1 solution <b>N</b> is a stronger acid / has a higher pH	<b>1</b> <b>1</b>
1(g)	measured results / temperature changes / results would be smaller <b>OR</b> larger / double volume needed to reach same temperature changes	<b>1</b>
1(h)	polystyrene is an insulator / copper is a (good) conductor	<b>1</b>
1(i)	source of error: heat losses / using a measuring cylinder improvement: lag / insulate / use burette;	<b>1</b> <b>1</b>

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<b>Question</b>	<b>Answer</b>	<b>Mark</b>
2(a)	white crystals	<b>1</b>
2(b)(i)	melts / liquefies / dissolves / bubbles condensation / drops of liquid cobalt(II) chloride paper turns colourless / light pink	<b>1</b> <b>1</b> <b>1</b>
2(b)(ii)	no change / colour	<b>1</b>
2(c)(i)	white precipitate dissolves / clears	<b>1</b> <b>1</b> <b>1</b>
2(c)(ii)	white precipitate	<b>1</b>
2(c)(iii)	no reaction / no change	<b>1</b>
2(c)(iv)	white precipitate	<b>1</b> <b>1</b>
2(d)	not a transition element (cation)	<b>1</b>
2(e)	hydrated / contains water	<b>1</b>
2(f)	it is <b>not</b> any named metal that gives a positive flame test	<b>1</b>
2(g)	aluminium sulfate	<b>1</b> <b>1</b>

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<b>Question</b>	<b>Answer</b>	<b>Mark</b>
3	<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