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Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0620 CHEMISTRY

0620/53 Paper 5 (Practical), maximum raw mark 40

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Abbreviations used in the Mark Scheme

- ; separates marking points
- / separates alternatives within a marking point
- () the word or phrase in brackets is not required but sets the context
- **A** accept (a less than ideal answer which should be marked correct)
- **I** ignore (mark as if this material were not present)
- **R** reject
- ecf credit a correct statement that follows a previous wrong response
- ora or reverse argument
- owtte or words to that effect (accept other ways of expressing the same idea)

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Question	Answer	Marks	Guidance
1(a)	initial and final volumes completed correctly; to 1 d.p.; comparable to Supervisor's result ($\pm 0.3\,cm^3$);	1 1 1	
1(b)	initial and final volumes completed correctly; to 1 d.p.; comparable to Supervisor's result ($\pm 0.3\,cm^3$);	1 1 1	
1(c)(i)	to remove **M** / residue / impurities / to clean it;	1	
1(c)(ii)	to remove water / so **N** is not diluted;	1	**R:** **N** reacts with water
1(d)(i)	colourless / pale green to pink;	1	**R:** clear to pink **I:** red
1(d)(ii)	there is already a colour change / self-indicating / it goes pink / owtte;	1	
1(e)(i)	Experiment 1 / solution **M**	1	
1(e)(ii)	volume for Experiment 1 is twice volume for Experiment 2 / volume for Experiment 2 is half volume for Experiment 1;	1	
1(e)(iii)	solution **N** is twice as concentrated / strong ora;	2	**A:** solution **N** is more concentrated / stronger ora = [1]
1(f)	half value from result in table for Experiment 2; half volume (of **L**) used;	1 1	
1(g)	*advantage:* easy to use / quick / convenient; *disadvantage*: not accurate owtte;	1 1	**I:** reference to large volumes

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Question	Answer	Marks	Guidance
2(a)	white / colourless (solid / crystals);		refer also to **(g)**
2(b)	any two from: • melts / turns into a liquid; • condensation at top of tube; • solid turns brown; • gas (pH 4) formed;	**2**	**I**: pungent smell
2(c)	pH 1–6	**1**	**I:** colours
2(d)	initial temperature recorded; final temperature recorded, less than initial temperature; effervescence / fizz / bubbles;	**1** **1** **1**	 **R:** gas evolved **I**: endothermic
2(e)	blue solution;	**1**	
2(f)	effervescence / bubbles / heat produced; lighted splint; pops;	**1** **1** **1**	
2(g)	white / grey / light blue (solid);	**1**	**(a)** and **(g)** correct required for the mark
2(h)	initial temperature; final temperature higher than initial; turns blue;	**1** **1** **1**	
2(i)	blue; precipitate;	**1** **1**	
2(j)	blue precipitate; dissolves / soluble / solution; deep / dark / royal blue (solution);	**1** **1** **1**	
2(k)	any two from: • hydrated / water; • acid; • organic;	**2**	
2(l)	copper (ions present);	**1**	

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