



COMBINED SCIENCE

0653/52

Paper 5 Practical Test

March 2017

MARK SCHEME

Maximum Mark: 30

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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the March 2017 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

Question	Answer				Marks
1(a)	reagent	Benedict's tube C	biuret tube D	iodine solution tube E	3
solution A	yellow/green/orange/red	blue	blue-black		
solution B	blue	lilac	blue-black		
1(b)	full set of results irrespective of colour recorded ; colours correct for A ; colours correct for B ;				3
1(c)	both contain starch ; A : <u>reducing</u> sugar ; B : protein ;				1
1(d)	wore goggles / tied back hair / used tongs and due to chemical tests / hot water				3
1(d)	(dissolve in) ethanol ; cloudy/emulsion and water added ; no naked flames ;				3

Question	Answer	Marks									
2(a)	filtrate = colourless and residue = black ;	1									
2(b)(i)	no visible reaction / colourless solution / no bubbles / no ppt. and not a carbonate ;	1									
2(b)(ii)	white ppt ; chloride ;	2									
2(b)(iii)	<table border="1" data-bbox="360 584 1267 975"> <thead> <tr> <th data-bbox="360 584 663 635">test</th> <th data-bbox="663 584 965 635">observations</th> <th data-bbox="965 584 1267 635">identity of cation</th> </tr> </thead> <tbody> <tr> <td data-bbox="360 635 663 786">add sodium hydroxide solution / ammonia solution and...</td> <td data-bbox="663 635 965 786">...no ppt ;</td> <td data-bbox="965 635 1267 786"></td> </tr> <tr> <td data-bbox="360 786 663 975">(add sodium hydroxide solution and warm)</td> <td data-bbox="663 786 965 975">damp red litmus turns blue ;</td> <td data-bbox="965 786 1267 975">ammonium / NH_4^+ ; (depends on use of sodium hydroxide)</td> </tr> </tbody> </table>	test	observations	identity of cation	add sodium hydroxide solution / ammonia solution andno ppt ;		(add sodium hydroxide solution and warm)	damp red litmus turns blue ;	ammonium / NH_4^+ ; (depends on use of sodium hydroxide)	3
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(add sodium hydroxide solution and warm)	damp red litmus turns blue ;	ammonium / NH_4^+ ; (depends on use of sodium hydroxide)									
2(c)(i)	dark blue solution ; copper / Cu^{2+} and copper oxide ;	2									
2(c)(ii)	reacts quicker ;	1									

Question	Answer	Marks
3(a)	V and <i>I</i> recorded for X ; V to at least 1 decimal place and <i>I</i> to at least 2 decimal places ;	2
3(b)	V and <i>I</i> recorded for Y ;	1
3(c)(i)	<i>R</i> values correct ;	1
3(c)(ii)	V, A, Ω ;	1
3(c)(iii)	<i>R_P</i> correct ;	1
3(d)(i)	correct series circuit ;	1
3(d)(ii)	V and <i>I</i> recorded ;	1
3(d)(iii)	<i>R_S</i> correct and different from <i>R_P</i> ;	1
3(e)	statement whether results support suggestion and results used for justification with reference to the idea of experimental accuracy ;	1