
CO-ORDINATED SCIENCES

0654/51

Paper 5 Practical Test

May/June 2017

MARK SCHEME

Maximum Mark: 45

Published

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This document consists of **5** printed pages.

Question	Answer	Marks																
1(a)(i)	<u>reducing</u> sugar ;	1																
1(a)(ii)	Benedict's test ;	1																
1(b)(i)(ii)(iii)	one mark per column <table border="1" data-bbox="526 379 1760 582"> <thead> <tr> <th></th> <th>Benedict's test</th> <th>biuret test</th> <th>iodine test</th> </tr> </thead> <tbody> <tr> <td>banana</td> <td>yellow / green / orange / red</td> <td>blue / no change</td> <td>blue-black</td> </tr> <tr> <td>chickpea</td> <td>blue / no change</td> <td>purple</td> <td>blue-black</td> </tr> <tr> <td>egg white</td> <td>blue / no change</td> <td>purple</td> <td>brown / no change</td> </tr> </tbody> </table>		Benedict's test	biuret test	iodine test	banana	yellow / green / orange / red	blue / no change	blue-black	chickpea	blue / no change	purple	blue-black	egg white	blue / no change	purple	brown / no change	3
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1(c)(i)	(reducing) sugar AND starch ;	1																
1(c)(ii)	protein AND starch ;	1																
1(c)(iii)	protein ;	1																
1(d)	same volume of apple juice ; same volume of Benedict's solution / excess Benedict's ; same temperature AND same time ; yellow / green = less concentrated AND orange / red = more concentrated ;	4																
1(e)	(dissolve in) ethanol ; (add) water ; cloudy / emulsion / milky ;	3																

Question	Answer			Marks									
2(a)(i)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 35%; text-align: center;"><i>solution H</i></th> <th style="width: 35%; text-align: center;"><i>solution J</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><i>red litmus paper</i></td> <td style="text-align: center;">red / no change AND</td> <td style="text-align: center;">blue AND</td> </tr> <tr> <td style="text-align: center;"><i>blue litmus paper</i></td> <td style="text-align: center;">blue / no change ;</td> <td style="text-align: center;">blue / no change ;</td> </tr> </tbody> </table>				<i>solution H</i>	<i>solution J</i>	<i>red litmus paper</i>	red / no change AND	blue AND	<i>blue litmus paper</i>	blue / no change ;	blue / no change ;	2
	<i>solution H</i>	<i>solution J</i>											
<i>red litmus paper</i>	red / no change AND	blue AND											
<i>blue litmus paper</i>	blue / no change ;	blue / no change ;											
2(a)(ii)	<p>(solution H could be) barium nitrate (or) silver nitrate ;</p> <p>(solution J could be) ammonia (or) sodium hydroxide ;</p>			2									
2(b)(i)	<p>add excess copper oxide to sulfuric acid (in a beaker and stir) ;</p> <p>warm ;</p> <p>filter / b filtrate is copper sulfate solution ;</p>			3									

Question	Answer	Marks												
2(b)(ii)	<table border="1"> <thead> <tr> <th></th> <th><i>solution H</i></th> <th><i>solution J</i></th> </tr> </thead> <tbody> <tr> <td><i>observations on slowly adding copper sulfate solution</i></td> <td>(white) ppt. / cloudy / milky / turns white</td> <td>dark blue (solution) / blue ppt. ;</td> </tr> <tr> <td></td> <td style="text-align: center;">AND ↓</td> <td></td> </tr> <tr> <td><i>colour of any residue</i></td> <td>white ;</td> <td>blue / light blue ;</td> </tr> </tbody> </table>		<i>solution H</i>	<i>solution J</i>	<i>observations on slowly adding copper sulfate solution</i>	(white) ppt. / cloudy / milky / turns white	dark blue (solution) / blue ppt. ;		AND ↓		<i>colour of any residue</i>	white ;	blue / light blue ;	3
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<i>colour of any residue</i>	white ;	blue / light blue ;												
2(b)(iii)	H is barium nitrate (solution) ; J is ammonia (solution) ;	2												
2(c)	(iron(III) sulfate) gives brown ppt. with both sodium hydroxide and ammonia / observations the same with both sodium hydroxide and ammonia ; so does not distinguish between sodium hydroxide and ammonia ; it would identify barium nitrate / still gives white ppt. with H ;	3												

Question	Answer	Marks
3(a)(i)	<i>I</i> and <i>V</i> values recorded ;	1
3(a)(ii)	all recorded <i>I</i> values < 0.5 A and to at least 2 d.p. ; all recorded <i>V</i> values < 2.5 V and to at least 1 d.p. ; <i>V</i> values increasing ;	3

Question	Answer	Marks
3(a)(iii)	<i>R</i> values recorded to consistent 2 or 3 significant figures ;	1
3(b)	suitable choice of scales (\geq half the grid used) ; 5 plots correct to half a small square ; good best-fit straight line judgement ;	3
3(c)(i)	value of <i>R</i> correctly read from graph ;	1
3(c)(ii)	(directly) proportional / as length increases so resistance increases ;	1
3(d)(i)	indication on graph of how data were obtained AND more than half of line used ; correct calculation ;	2
3(d)(ii)	340 · answer to (d)(i) ;	1
3(e)	reading meter scales ; observe perpendicularly / repeat ; OR measuring the length of wire ; observe perpendicularly / repeat (for decreasing lengths of wire) / ensure wire straight ; OR heating effect of wire ; switch off after every reading ; OR rule / wire moving ; tape wire to rule / clamp rule to bench ;	max 2