CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2014 series

0654 CO-ORDINATED SCIENCES

0654/52 Paper 5 (Practical), maximum raw mark 45

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 May/June 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.



				IGCSE – May/June 2014	0654	52	
1	(a)	pur	ple/p	ink AND due to pH above 8/alkaline conditions;		[1]	
	(b)	(i) row or column for A and B;row or column for recording time with suitable units (in heading or with each reading);				each	
		(ii)		Its recorded for both blocks (neither greater than 54 k B has shorter time ;	.00s/90min);	[2]	
	(c)			ises (into agar) ; luced/acid neutralizes alkali/it becomes neutral ;		[2]	
	(d)	different volumes of acid; use the same volume/amount; OR difficult to judge the end point (do not allow just 'timing'); (so) repeat and calculate a mean/time to whole block colourless; OR difficult to cut blocks evenly/dimensions not accurate; (so) have a guide to help cutting/use moulds for A and B; (to award second mark the improvement must match a stated inaccuracy) any two pairs [max					
	(e)	(i)		ction in distance for diffusion/ B is a smaller block to volume ratio;	k/increase in sur	face [1]	
		(ii)	thin	alveoli wall/one cell thick;		[1]	
	(f)	(i)	diffe	rent sized blocks/greater range of block sizes/anot	her size of block	; [1]	

(ii) time on one axis and volume/block size/length of side/surface area to

volume ratio on other axis;

Mark Scheme

Syllabus

Paper

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[Total: 15]

[1]

				IGCSE – May/June 2014	0654	52	
2	(a)	(i)	blue	/blue-green/green;			[1]
		(ii)		ervation : no reaction ; clusion : not carbonate / not CO ₃ ²⁻ ;			[2]
		(iii)	cond	ervation : no reaction (allow grey ppt); clusion : not chloride / not Cl^- ; aclusion must follow an observation other than white	ppt for second m	ark)	[2]
		(iv)	cond	ervation : white ppt ; clusion : sulfate/SO ₄ ²⁻ ; eclusion must follow white ppt/white solid/milky for s	second mark)		[2]
	(b)	(i)		vn ppt/brown solid/brown suspension/insoluble bro w red-brown ppt)	own ;		[1]
		(ii)		ur of filtrate : (dark) blue ; ur of residue : brown/red-brown/black/green ;			[2]
		(iii)	cation of the cation	on in filtrate: Cu ²⁺ /copper (not Cu); on in residue: Fe ³⁺ /iron(III) on in residue: Fe ²⁺ /iron(II) if residue in (b) (ii) is greating from (b) (ii) if filtrate and residue transposed)	een ;		[2]
	(c)	OR		opper sulfate AND salt 2 : iron(III) sulfate ; opper sulfate AND salt 2 : iron(II) sulfate if residue i	n (b) (ii) is green	;	
				It 1 and salt 2 may be transposed or wrong anion			[1]
	(d)	stea	am/w	white fumes/white gas/condensation at top of test-tu	ıbe ;		101

Mark Scheme

Syllabus

Paper

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solid goes brown;

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[2]

Page 4		Mark Scheme	Syllabus	Paper
		IGCSE – May/June 2014	0654	52
(a) (i)	I value recorded; V value recorded;			[2]
(ii)	A/amp(ere);			[1]
(iii)	I val V va	lues all recorded; lues < 1 A and to at least two decimal places; lues all < 2.5 V and to at least one decimal place; lues decreasing down table;		[4]
(b) (i)		values correct ; es decreasing down Table 3.1 ;		[2]
(ii)	the la	amp gets dimmer (as <i>l</i> increases) ;		[1]
(c) (i)	five	$\frac{V}{l}$ values correct; $\frac{V}{l}$ values correct; values to two/three significant figures;		[3]
(ii)	justif	disagree/wrong; fication matches comment and refers to results e	e.g. $\frac{V}{l}$ not const	
	V de	ecreases as <i>l</i> increases ;		[2]

3

[Total: 15]