MARK SCHEME for the May/June 2013 series

0654 CO-ORDINATED SCIENCES

0654/62

Paper 6 (Alternative to Practical), maximum raw mark 60

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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 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

Page 2	Mark Scheme	Syllabus	N.
	IGCSE – May/June 2013	0654	30
(a) plant A yellow o	shown as brown (red-brown-orange) middle and a r brick-red alone) ;	t least one other (not	ambri
plant B :	shown as brown in covered regions ;		19
blue/bla	ick elsewhere (either or both regions) ;		
(b) (i) to k	ill / soften the <u>leaf</u> ;		[1]
		<i>.</i> . <i>.</i> .	
(ii) to r	emove chlorophyll/(green) colour/allow iodine col	our to be seen ; (do	[1]
100			[']
(c) (i) cov	er other areas/whole leaf with glass/transparent ma	aterial ;	[1]
(ii) rom	aven the veriable of different plants (a.g. gance)	OPA (a.g. pa other	
(II) fact	ors affecting plant)/more reliable/one plant may	react or behave or	
pho	tosynthesise differently/more/less;		[1]
(d) use a pl	ant with variegated leaves (or description) :		
destarch	/keep in dark before starting, (then leave in the ligh	t);	
test leaf	for starch/use iodine test ;		
descript (if two le	ion of the two results ;		[may 3]
	aves used 2 marks maxy		
]	Total: 10]

2 (a) (i) 21; 15;

(ii)

height, <i>h</i> /cm	time for 20 swings/s	time, <i>T</i> for one swing/s	T ² / s ²
10.0			
20.0			
25.0	(21)	1.05	1.10
30.0			
40.0	(15)	0.75	0.56

column 3 both correct (ecf) (2 decimal places);

(iii) column 4 both correct (ecf) (2 decimal places) BUT only penalise once in (ii) or (iii) ;

[2]

[1]

[1]

Page 3	Mark Scheme	Syllabus
	IGCSE – May/June 2013	0654 280
b) (i)	5 points correct (by eye) ;	Phy
	straight line of best fit ;	910
(ii)	evidence <u>on graph</u> ;	1
	gradient = 0.035 to 0.04 ; (ignore any sign)	[2]
(iii)	allow 2 to 2.15 (ecf) ;	[1]
(iv)	2.05/0.04 = 51.25 cm (allow 50.00 to 53.75) (ecf):	[1]

3

		1	1		1	
		aqueous sodium hydroxide	aqueous ammonia	dilute hydrochloric acid	dilute sulfuric acid	
(a)	3 drops of	purple	purple	red/pink	red/pink	
	indicator are added	(allow blue)	(allow blue) both ; [1]	(not orange)	both ; [1]	[max 2]
(b)	an equal volume of silver nitrate solution is added	brown ppt	no change	white ; ppt/solid ; [2]	no change	[max 2]
(c)	an equal volume of barium choride solution is added	no change	no change	no change ; [1]	white ppt	[max 1]
(d)	copper sulfate solution is added slowly	blue ppt/ solid ; [1]	blue ppt/ solid ; [1]	no change	no change	
	tube is half full		(dark) blue soln ; [1]		
			(allow ppt soluble in excess)			[max 3]
(e)	a 2 cm length	n length no change	no change	bubbles/ fizzing/	bubbles etc.	
	ribbon is			effervescence	all 4 ; [1]	
	gas evolved			pops	pops	
	lighted splint.				both ; [1]	[max 2]



to a lower concentration (of water) ORA ; (**do not allow** references to sucrose moving)

[2]

[2]

[2]

[Total: 10]



(iii)	points by eye (first point MUST be correct) ;	
. ,	line of best fit straight ;	[2]

(iv)	from graph ecf (6.7 hours / 6 hours 42 mins) ± a square ;				
	(do not award mark if no line extension or over 7)	[1]			



[Total: 10]