

## **MARK SCHEME for the May/June 2013 series**

### **0653 COMBINED SCIENCE**

**0653/52**

Paper 5 (Practical Test), maximum raw mark 30

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.

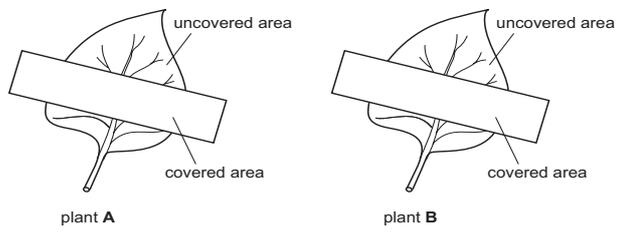
Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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.

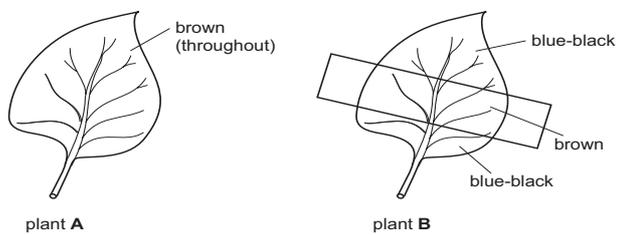
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- 1 (a) both leaves drawn ;  
 clear pencil drawings ;  
 drawings show leaf veins ;  
 drawings clearly show which parts are covered with black paper ;



[4]

- (b) both leaves clearly drawn with pencil ;  
 leaf A is all brown ;  
 leaf B is blue-black (where there was not tape) ;



[3]

- (c) last column has 'no' in first three boxes ;  
 last column has 'yes' in fourth box ;

[2]

		colour obtained with iodine	starch is present (yes or no)
leaf from <b>plant A</b>	area covered by black paper	<b>brown</b>	<b>no</b>
	area not covered by black paper	<b>brown</b>	<b>no</b>
leaf from <b>plant B</b>	area covered by black paper	<b>brown</b>	<b>no</b>
	area not covered by black paper	<b>blue-black</b>	<b>yes</b>

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(d) carbon dioxide is needed (for photosynthesis) ; (ignore references to light etc)

- 2 (a) all time values recorded ;  
all time values to the nearest second ;  
time values decreasing ; [3]
- (b) (i) complete set of  $T$  values calculated correctly (2 significant figures or more) ; [1]  
(ii) complete set of  $T^2$  values calculated correctly to 2 decimal places ; [1]
- (c) (i) suitable choice of scales including the origin ;  
points plotted correctly to half a small square ;  
good best fit straight line judgement ; [3]  
(ii) indication on graph of how data obtained ; [2]  
calculation of gradient ; [2]

[Total: 10]

3 (a) (i)

solution A	solution B	solution C
purple/blue	purple/blue	red/pink

all three correct for 1 mark (ignore pH values) ; [1]

(ii)

solution A	solution B	solution C
brown (ppt) ;	no visible reaction / no ppt / no change / colourless (solution)	white ppt ; (not cloudy / milky)

[2]

(iii)

solution A	solution B	solution C
blue (ppt) ;	dark blue solution ; (ignore blue ppt)	blue solution / no visible reaction (not 'no change')

both shaded boxes from (ii) and (iii) for 1 mark ;

[max 3]

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(b) (i) **A and B** ;

(ii) **B** and test (a)(iii) /  $\text{CuSO}_4$ ;

(iii) **A** and test (a)(iii) /  $\text{CuSO}_4$ ;

**OR**

**A** and test (a)(ii) /  $\text{AgNO}_3$  if brown ppt obtained ;

[max 1]

(iv) **C** and test (a)(ii) /  $\text{AgNO}_3$ ;

[1]

**[Total: 10]**