

**UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
International General Certificate of Secondary Education

**MARK SCHEME for the October/November 2011 question paper  
for the guidance of teachers**

**0625 PHYSICS**

**0625/62**

Paper 6 (Alternative to Practical), maximum raw mark 40

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 must be read in conjunction with the question papers and the report on the examination.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2011	0625	62

- 1 (a)  $x = 1.9(\text{cm}), 19(\text{mm}), 0.019(\text{m}), y = 2.1(\text{cm}), 21(\text{mm}), 0.021(\text{m})$  [1]
- (b) unit in (a) seen at least once and correct, matching both figures [1]  
 evidence of  $x$  and  $y$  values from (a)  $\times 10$  [1]  
 $m_1 = 124$  OR  $0.124$  accept more sig. figs. [1]  
 unit seen, g or kg to match figures [1]
- (c)  $m_2 + m_3 = 99.4(\text{g})$  [1]
- (d) two from:  
 modelling clay remaining on knife/rule/fingers/lost in cutting  
 more difficult to balance with smaller pieces  
 more readings so more inaccuracies  
 rounding errors in extra calculations  
 difficult to find centre of misshapen cube  
 modelling clay might not have uniform density [2]
- (e) mark centre of bottom of cube OR take readings at either side of cube [1]
- [Total: 9]**
- 2 (a)  $\theta_h = 86(^{\circ}\text{C})$  [1]
- (b)  $\text{cm}^3, ^{\circ}\text{C}$  [1]  
 10, 20, 30, 40, 50, 60 [1]
- (c) graph:  
 axes labelled and scales suitable  
 plots to take up half grid [1]  
 all plots correct to nearest  $\frac{1}{2}$  small square [1]  
 well-judged best-fit line [1]  
 thin line and small plots [1]
- (d) any two from:  
 same hot water temperature / initial temperature,  
 constant room/surrounding temperature / other suitable named environmental condition  
 constant cold water temperature  
 same amount/rate of stirring  
 time taken for transfer w.t.t.e. / poured at same time interval [2]

<b>Page 3</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE – October/November 2011</b>	<b>0625</b>	<b>62</b>

- (e) any one from:  
 avoidance of parallax explained (thermometer or measuring cylinder)  
 wait for temperature to stabilise  
 other suitable suggestion related to measurement [1]

**[Total: 10]**

- 3 (a)  $V = 0.8 \text{ (V)}$  [1]

- (b)  $V_A + V_B = 1.4 + \text{candidate's value for } V_A$ , expect 2.2V [1]  
 statement matching results, expect YES [1]  
 justified referring to results [1]

- (c)  $R = 7.78$ , to 2 or 3 significant figures and unit  $\Omega$  [1]

- (d) voltmeter correctly shown [1]

- (e) good reason, e.g. [1]  
 '1V scale better as  $V_A$  less than 1V' OR '10V scale acceptable to avoid changing since  
 $V_B$  and  $V_C$  larger than 1V'

**[Total: 7]**

- 4 (a) trace:  
 normal at  $90^\circ$  in correct position [1]  
 C at 3.0 cm to left of L [1]

- (b) (i) & (ii) all lines neatly drawn in correct position [1]

- (iii) table:  
 cm,  $^\circ$ ,  $^\circ$  [1]  
 $i$  value in range 16–18 AND  $r$  value in range 17–19 [1]

- (c) any two from:  
 thickness of lines  
 thickness of pin holes/pins  
 allow thickness of mirror o.w.t.t.e. e.g. 'two lines seen' [2]

- (d) any one from:  
 ensure pins vertical / view bases of pins / increase pin separation  
 draw thin lines / use sharp pencil  
 view protractor / rule perpendicularly o.w.t.t.e.  
 mirror  $90^\circ$  to paper [1]

**[Total: 8]**

<b>Page 4</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE – October/November 2011</b>	<b>0625</b>	<b>62</b>

- 5 (a)  $l/mm$ ,  $e/mm$  or in words [1]
- (b) 1, 3, 5, 7, 11, 17 [1]
- (c) no [1]  
larger loads produce bigger increases in extension OR increase between (successive)  
extensions not the same OR ratio  $W/e$  not the same [1]
- (d) clamp, spring and weight sensibly shown [1]  
ruler close to spring or with suitable horizontal pointer or equivalent [1]

**[Total: 6]**