

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

## **MARK SCHEME for the October/November 2014 series**

### **0625 PHYSICS**

**0625/51**

Paper 5 (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 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 October/November 2014 series for most Cambridge IGCSE<sup>®</sup>, Cambridge International A and AS Level components and some Cambridge O Level components.

® IGCSE is the registered trademark of Cambridge International Examinations.

Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2014	0625	51

- 1 (a)  $h$ ,  $d_T$  and  $d_B$ , recorded in cm and sensible values [1]  
 $h > d_T > d_B$  and  $d_A$  correct [1]  
 $V$  correctly calculated [1]  
unit  $\text{cm}^3$  [1]
- (b) (i) use of at least two values for circumference  $C$  [1]  
correct value for  $C$  and  $3 \times d_A \pm 10\%$  [1]  
2 or 3 significant figures [1]
- (ii) diagram showing measurement half way up,  
or at top and bottom  
or a series of measurements all the way up [1]
- (c) (i)  $V_W$  between  $140 \text{ cm}^3$  and  $300 \text{ cm}^3$  [1]
- (ii) sensible explanation [1]  
e.g.  $V_W$ : lots of measurements to obtain  $V$  leads to greater inaccuracy [1]
- [Total: 10]**
- 2 (a) sensible value for  $\theta_R$  ( $^{\circ}\text{C}$ ) [1]
- (b)–(d) table: [1]  
 $s$ ,  $^{\circ}\text{C}$ ,  $^{\circ}\text{C}$  [1]  
correct  $t$  values 0, 30, 60, 90, 120, 150 [1]  
temperatures decreasing in both columns [1]  
final temperature difference less than initial temperature difference in both columns [1]  
evidence of temperatures to precision of at least  $1^{\circ}\text{C}$  [1]
- (e) statement to match results and justified by reference to results [1]  
reference to same time [1]
- (f) lid/cover/smaller cross-sectional area [1]
- (g) any one from: [1]  
room temperature (or equivalent environmental condition)  
initial water temperature  
volume of water  
same/dry insulation [1]
- [Total: 10]**

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2014	0625	51

- 3 (a)  $V$  to at least 1 d.p. and  $< 3V$  and increasing [1]  
 $I$  to at least 2 d.p. and  $< 1A$  and constant to within 10% [1]  
 $R$  calculated correctly [1]
- (b) graph: [1]  
axes correctly labelled and correct way round [1]  
suitable scales, with plots using at least half of grid [1]  
all plots correct to  $\frac{1}{2}$  small square [1]  
good line judgement, thin, continuous line [1]
- (c) statement to match results [1]  
justified by reference to straight line, through the origin [1]
- (d) additional readings with  $l$  values above 50 cm [1]

**[Total: 10]**

- 4 (a)(i)(ii)  $v$  sensible value in cm (55–65) [1]  
 $h$  sensible value ( $> 3$  cm and  $< 6$  cm) in cm [1]
- (iii) image drawn inverted [1]
- (iv)  $x$  value 1.2–1.8 cm [1]
- (b) (i)  $h/x$  and  $v/u$  correct, both with no unit [1]  
(ii) same within 10% [1]
- (c) statement to match results (expect yes) [1]  
justified by reference to results [1]
- (d) any two from: [2]  
use of darkened room/brighter lamp  
mark position of centre of lens on holder  
place metre rule on bench (or clamp in position)  
ensure object and centre of lens are same height (from the bench)  
repeats and average  
move lens slowly/back and forth (to find sharpest image)  
screen and lens and object all perpendicular to bench

**[Total: 10]**