

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

**MARK SCHEME for the May/June 2010 question paper**  
**for the guidance of teachers**

**0625 PHYSICS**

**0625/63**

Paper 63 (Practical), maximum raw mark 40

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Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – May/June 2010	0625	63

- 1 (a) table:  
 $1/d$  values correct  
0.0331, 0.0418, 0.0500, 0.0585 (0.058 to 2 sig. fig.), 0.0662 [1]  
consistent 2 or 3 significant figures [1]
- (b) graph:  
axes labelled [1]  
scales suitable, plots occupying at least half grid [1]  
plots all correct to  $\frac{1}{2}$  square (ecf) – take centre of plot if large [1]  
well judged line thin line ( $\leq \frac{1}{2}$  square) [1]  
(no mark if plots  $> \frac{1}{2}$  square)
- (c) triangle method used and shown (any indication on graph) [1]  
(triangle) using at least half line (can be seen in calculation) [1]
- (d)  $\mu$  27 – 33 (NO ecf) [1]  
2 or 3 significant figures and unit g [1]
- [Total: 10]**
- 2 (a) table:  
 $t$  in s,  $\theta$  in  $^{\circ}\text{C}$  (either in words or mixture of symbols and words)  
(NOT degrees/centigrade) [1]  
times 30, 60, 90, 120, 150, 180 [1]
- (b) both temperature falls correct (ignore unit or lack of unit) 26, 30 [1]
- (c) justification matches statement (expect B)  
and by reference to readings (need a comparison – not ‘heat’ or ‘it’)  
B & temp fall [1]  
in same time [1]
- (d) any two from:  
same starting temperature  
stir/same thermometer position  
same interval time  
constant room temperature/carry out at same time  
same volume/amount/mass of water  
avoid draughts or wtte [2]  
(NOT reference to container, insulation, precaution)  
(extra answers: –1 if incorrect, ignore if neutral)
- [Total: 7]**

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – May/June 2010	0625	63

- 3 (a) diagram:  
 correct symbols for ammeter, voltmeter and lamps [1]  
 (lamp – cross at least  $\frac{1}{2}$  diameter by eye) (ignore power source) [1]  
 voltmeter position correct [1]  
 lamps in parallel in a correct circuit (e.g. single voltmeter) [1]
- (b) table:  
 V, A,  $\Omega$  (any in symbols, words or a mixture) [1]  
 Correct  $R$  values 6.13, 6.00, 3.11 [1]  
 Consistent 2 or 3 significant figures [1]
- (c) statement matches readings (expect NO) [1]  
 justification matches statement [1]  
 and by reference to resistance results (don't need numbers) [1]
- [Total: 8]**

- 4 (a) normal labelled (allow N N' on end or N, N' alone) [1]
- (b)  $P_1P_2$  distance at least 3 cm [1]
- (c) line to H drawn neatly and correctly [1]  
 $\theta$  correct to  $\pm 1^\circ$  60 [1]  
 $(\theta - 2i)$  correct 0 (ecf) (ignore sign) [1]  
 unit  $^\circ$  at least once in (c) and not contradicted [1]
- (d)  $2^\circ$  (ignore unit and sign) [1]
- (e) statement matches results (ecf)  
 expect YES if 0 and 2,  
 NO only if 'too different' or wtte in justification [1]  
 justification matches statement and by reference to results [1]  
 (allow almost/nearly the same or within expt accuracy) [1]
- [Total: 9]**

Page 4	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – May/June 2010	0625	63

- 5 (a)  $x = 3.9$  and  $y = 5.4$  (any answer correct when rounded to 2 sf) [1]  
 both with correct unit [1]  
 $m = 1.38$  no unit, 2 or 3 significant figures (allow  $x$  for unit)  
 or correct calculation from correct  $x$  and  $y$  [1]
- (b) any two from:  
 clamp rule or place on bench  
 use area away from direct sunlight/dark room/bright object  
 ensure object and lens same height (from bench)  
 mark on lens holder (accept on lens)  
 screen and lens perpendicular to bench/aligned/in straight line/on principle axis  
 move lens slowly (backwards and forwards)  
 repeats  
 avoid parallax (or wtte) with action given 2
- (c) scale drawn on paper on screen/graph paper on screen/  
 mark on screen (then) measure/clamp ruler on scale/  
 use translucent screen and measure from other side [1]

[Total: 6]