

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 series

0625 PHYSICS

0625/53

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[®], 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	53

- 1 (a) h_0 in range 1.5 to 2.5 (cm) and to at least 1dp [1]
- (b)(c) h_1 values decreasing [1]
- correct S calculations and S values all > 0.8 [1]
- (d) graph:
 axes labelled with quantity and unit and in correct orientation [1]
 appropriate scales [1]
 plots correct to $\frac{1}{2}$ small square [1]
 well-judged straight line and thin continuous line, precise plots [1]
 triangle method/information for gradient seen marked on graph [1]
- (e) (i) G calculated from at least $\frac{1}{2}$ line [1]
- (ii) f in range 14 – 16 (cm) [1]
- [Total: 10]**
- 2 (a)(b) table:
 units all correct, s °C °C [1]
 NOT C°, NOT centigrade [1]
- t values correct 0, 30, 60, 90, 120, 150, 180 [1]
 θ for **A** and **B** decreasing [1]
 final interval less than initial in both sets [1]
 both sets of data to precision of at least 1 °C [1]
- (c) statement matching temperature changes with justification referring to results and involving correct comparative change in temperature [1]
- justification has specific mention of temperature change in the same time owtte [1]
- (d) appropriate source of inaccuracy associated with procedure e.g. any one from:
 • water levels not the same
 • thermometer scales not read at 90°
 • initial temperatures different
 • not able to stir water
 • not waiting for temperature to stabilise initially/waiting time not long enough [1]
- (e) any two factors relating to apparatus from:
 • keep thermometer at same depth
 • same size /thickness/ material of test-tube /same test tube
 • same water levels /volume /quantity /amount of water
 • same thickness /surface area of surface material [2]

[Total: 10]

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2014	0625	53

- 3 (a)(b)(c) table:
- p.d.s all $< 3.0\text{V}$ and to at least 1 d.p. [1]
 - currents all $< 1.00\text{A}$ and to at least 2 d.p. [1]
 - units all correct (V, A, Ω) [1]
 - R calculations correct [1]
 - V , I and R values all decreasing [1]
 - 2 or 3 sig. figs. in R column [1]
- (d) statement matches results, with matching justification which refers to values being 'too different' / 'difference beyond limits of experimental accuracy' owtte [1]
- (e) lamp in circuit 1 brighter than in circuits 2 and 3 and has greater resistance [1]
- (f) correct circuit symbol for variable resistor (rectangle with strike-through arrow only) [1]
- connected in correct series circuit [1]
- [Total: 10]**
- 4 (a) h_0 less than 100 cm [1]
- (b) (i) suitable explanation,
e.g. same no. of graduations between 60 cm mark and each end of object owtte,
or mark on side of rule and object [1]
- (ii)(iii) table:
 h values all decreasing [1]
 h values to at least 1 d.p. [1]
- (c) (i) correct calculations of H [1]
- (ii) correct $d \times H$ calculations [1]
- (d) $d \times H$ not constant / H doesn't always double when d halves owtte [1]
- (e) (i) reference to mass/weight of rule [1]
- (ii) measure height at bench [1]
- subtract h_0 [1]
- [Total: 10]**