CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 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.

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1 **(a)** *h*, *w* and *d* recorded [1]
all given to same correct unit [1]

(b) α correct to $\pm$ 1(°) [1]

(c) first θ recorded (< 45°) [1]
at least one more θ [1]
additional θ recorded [1]
method for finding average θ correct [1]
correct average given to nearest 0.5° or 1° with unit [1]

(d) correct statement for results (expect Yes) [1]
idea of within (or beyond) experimental accuracy [1]

[Total: 10]

2 **(a)** sensible value for θ_R [1]

table:
s, °C, cm or mm [1]
correct *t* values 0, 30, 60, 90, 120, 150, 180 [1]
temperatures decreasing [1]
evidence of temperatures to at least 1 °C [1]
d values realistic and relating to temperatures [1]

(e) **(i)** does not go through the origin [1]

(ii) *d* not measured from 0 °C mark o.w.t.t.e. [1]

(iii) use at least 0–100 on scale [1]
division by appropriate number from scale [1]

[Total: 10]

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3 **(a)** table:
all V to at least 1 d.p. and < 3 V [1]
all I to at least 2 d.p. and < 1 A [1]
R values correct [1]

(b) graph:
axes correctly labelled [1]
suitable scales [1]
all plots correct to ½ small square [1]
good line judgement AND thin, continuous line [1]

(c) triangle method shown [1]
using at least half of line [1]
G and measured I values to within 10% of each other [1]

[Total: 10]

4 ray trace:
normal drawn at centre of MR [1]
incident ray at 30^{o} ($\pm 1^{o}$) [1]
first P_3P_4 at least 5 cm apart [1]
reflected rays in correct positions and neat [1]
construction lines to X correct [1]

(l) lines correctly drawn [1]
a and b correct measurements to $\pm$0.1 cm [1]

(m) statement matches results (expect Yes) [1]
idea of within (or beyond) experimental accuracy [1]

(n) any one from:
making sure pins are vertical
align pins by viewing bases of pins
pins as far apart as possible (>5 cm) [1]

[Total: 10]

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