CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 series

0625 PHYSICS

0625/61 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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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1 **(a)** 9.7, 5.7, 2.0 (accept 2) or 97, 57, 20 [1]
all given to correct unit [1]
line AC drawn correctly, corner to corner [1]
α = 18 – 20° [1]

(b) number from 3 to 20 with no unit [1]

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

[Total: 7]

2 **(a)** θ_R = 23(°C) [1]

(b) table:
d values 11.9, 11.3, 10.8, 10.4, 10.2, 10.0, 9.9 [1]
all *d* values to nearest mm [1]
s, °C, cm or mm [1]

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

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

(d) any *l* divided by any number of divisions [1]
l value between 89 and 119 [1]
x = 0.98 mm to 1.00 mm (with unit) [1]

[Total: 9]

3 **(a)** table:
R values correct 0.61, 1.82, 3.16, 4.27, 5.48 [1]
all *R* values to 2 or 3 significant figures [1]
cm, V, A, Ω [1]

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

(c) triangle method shown on graph [1]
using at least half of line [1]
G = 0.31to 0.35 2 or 3 significant figures [1]

[Total: 11]

4 on ray trace:
one line drawn accurately through P_3P_4 or CD [1]
both lines in correct place, neat, thin and intersecting [1]
normals Y to MR and P_1 to MR correct [1]
b = 55 – 65 (mm) [1]

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

(e) any one from:
large spaces between pins
make sure pins are vertical
observe bases of pins [1]

[Total: 7]

5 **(a)** 40.0 or 40(cm) [1]

(b) accuracy / reliability / check readings / spot anomaly / o.w.t.t.e. [1]

(c) correct method used [1]
30 or 30.0(g) [1]

(d) rule never quite balances, o.w.t.t.e. [1]
take average position / nearest to balance, o.w.t.t.e. [1]

[Total: 6]