CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2012 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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

CAMBRIDGE
International Examinations

1 **(a)** d_0 = 21 (mm) [1]

(b) D_o = 210 (mm) or 10 × candidate's **(a)** [1]

(c) *L* values 1.0, 2.0, 3.0, 4.0, 5.0 [1]
e values 1.0, 9.0, 21.0, 29.0, 40.0 [1]

(d) Graph:
Axes correctly labelled with quantity and unit and correct way around [1]
Suitable scales [1]
All plots correct to ½ small square
Good line judgement and a single, thin, continuous line [1]

(e) Triangle method used and shown on the graph [1]
Using at least half of line [1]

(f) Any one from:
Always measure from same point on spring (top or bottom of ring)
Wait for spring/weight to stop bouncing
Use of horizontal aid/ensure ruler is vertical
Bench surface not uniform [1]

[Total: 11]

2 **(a)** θ_R = 24(°C) [1]

(b) **(i)** Table:
s, °C, °C [1]

(ii) About the same [1]
Justified with reference to numbers in table [1]

(c) Any two from:
Volumes of water
Room temperature/draughts
Same beaker
Initial water temperature [2]

[Total: 6]

© Cambridge International Examinations 2012

3 **(a)** Correct symbols for ammeter, voltmeter and lamps [1]
Ammeter and voltmeter in correct positions [1]
Correct parallel circuit [1]

(b) **(i)** and **(ii)** V_A = 1.9(V) R_A = 2.9(2) (Ω) [1]
Units V and Ω [1]

(iii) Pointer at correct position (0.65) [1]

(c) No mark awarded

(d) Statement matches readings (expect YES) [1]
Justified with idea of experimental inaccuracy [1]
(expect 'close enough', owtte)

[Total: 8]

4 **(a)** Trace:
Normal at 90° in correct position [1]
Angle of incidence = 30° (± 2°) [1]

(b) P_1P_2 distance ⩾ 5.0 cm [1]
P_3P_4 line and line **GE** correctly and neatly drawn [1]

(c) **(i)** *r* = 18 or 19 or 20 [1]

(ii) *i/r* value correct [1]

(d) **(i)** *i/r* value 1.54 and both *i/r* values with no unit and to 2 or 3 significant figures [1]

(ii) Idea of within (or beyond) limits of experimental accuracy [1]

[Total: 8]

© Cambridge International Examinations 2012

5 **(a)** Measuring cylinder
Tape measure
Newtonmeter (spring balance)
Electronic balance
Manometer

1 mark each [5]

(b) **(i)** Viewing scale perpendicularly (owtte) [1]

(ii) Any one from:
Moving lens back and forth
Dark area (owtte)
Object and lens at same height from bench
Object lens and screen at right angles to bench [1]

[Total: 7]

© Cambridge International Examinations 2012