UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

0625 PHYSICS

0625/52 Paper 5 (Practical), maximum raw mark 40

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1 **(a)** Table:
cm, N [1]
Correct *d* values 70.0, 60.0, 50.0, 40.0, 30.0, 20.0, 10.0 [1]
F values all less than 4 N [1]
F values decreasing [1]
F values all to at least 0.2 N [1]

(b) **(i)** *d* against *F* (or *F* against *d*) [1]

(ii) Straight line [1]
Through origin [1]

(c) Would change forcemeter reading/change mass on rule/disturb balance/wtte [1]

(d) Check distance from bench is the same at two points/
Line up by eye with windowsill (or suitable horizontal reference)/
Suitable use of set-square [1]

[Total: 10]

2 **(a)** Sensible room temperature value in °C [1]

(b) Correct times 0, 30, 60, 90, 120, 150 [1]
Temperatures falling [1]

(c) Graph:
Axes correctly labelled [1]
Suitable scales [1]
All plots correct to ½ small square [1]
Good line judgement [1]
Thin, continuous line [1]

(d) Two from:
Room temperature
Draughts
Initial water temperature [2]

[Total: 10]

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3 **(a)** V_1 to at least 1 d.p. and < 3V and I_1 to at least 2 d.p. and < 2A [1]
R_P and $4R_P$ values correct [1]

(b) V_2 and I_2 present with $I_2 < I_1$ [1]
$R_S = 4\ R_P \pm 10\%$ [1]

(c) Correct statement (from candidate's work, expect Yes) with
matching justification (idea of within or beyond experimental accuracy) [1]

(d) **(i)** Circuit:
Correct symbols for ammeter, voltmeter and lamp [1]
Correct series circuit [1]

(ii) V_3 and I_3 present with L_S to 2 or 3 significant figures [1]

(e) Units V, A and Ω [1]

(f) Filament glows/lamp gets hot [1]

[Total: 10]

4 Trace:
Normal at 90° in correct position [1]
Angle of incidence 20° and N at 4 cm [1]
All lines present and neat [1]
First emergent ray correct direction [1]
First P_3P_4 distance › 5.0 cm [1]

(c) *a* value correct to ± 1 mm [1]

(i) *b* value correct to ± 1 mm [1]

(j) *n* value correct (ecf allowed) [1]
to 2 or 3 significant figures and no unit [1]

(k) *a* and *b* present, both *n* values 1.4–1.6 [1]

[Total: 10]

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