CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 series

0625 PHYSICS

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

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1 (a) table:
correct d values 5.(0), 10.(0) [1]
x and y values present , first $(x + y) < 46$, second < 41 [1]
all x and y values <u>to nearest mm</u> [1]

(b) (i) M values both correct – penalise incorrect rounding, 3 or 4 sig. figs. only [1]

(ii) g / grams seen at least once [1]

(iii) correct average
(ignore sig. figs., but rounding must be correct) [1]

(c) M values same to within 5 g [1]

(d) any two from:
centre of mass of rule not at 50.0 cm / non-uniform rule
mass X not uniform / of varying density
difficulty in obtaining balance (o.w.t.t.e.) / slips on pivot / mass X not exactly 100 g
/ pan has mass [2]

(e) one from:
mark line through centre of the mass
use position of edges of mass on rule [1]

[Total: 10]

2 (a) sensible value of θ_C (< 40 (°C)) [1]

(b) decreasing θ values (allow one pair of identical values) [1]
evidence of θ to at least nearest 1 °C [1]

(c) θ_H value sensible (> 60 °C), ignore unit [1]

(d) (i) θ_1 lower than θ_H [1]

(ii) θ_2 lower than θ_1 and correct unit seen once in **(a)** – **(d)** [1]

(e) estimate reasonable fit with readings (must use table readings $\Delta\theta$, or use θ_1 or θ_2) [1]
estimate given using sensible method [1]

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(f) two from:
room temperature / other environmental conditions
<u>initial</u> hot water temperature
<u>initial</u> cold water temperature
amount/mass/volume of hot water
time delay on adding cold water / same time for cooling [2]

[Total: 10]

3 (a) – (d) table:
h values present and in cm [1]
$1/h$ values correct [1]

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

(f) triangle method used <u>and shown</u> [1]
using at least half of line [1]

(g) f = 14 – 16 (cm) [1]
f to 2 or 3 significant figures <u>with unit</u> [1]

[Total: 10]

4 (a) (i) V_1 to at least 1 d.p. and < 1V [1]
I to at least 2 d.p. and < 1A [1]

(ii) correct calculation of R_1 [1]

(ii) (iv) V_2 and V_3 both < 1V [1]

(v) correct calculation and unit <u>seen in **(a)**</u> [1]

(b) (i) correct symbols for lamp, voltmeter [1]

correct parallel circuit (including voltmeter) [1]

(ii) (iii) (iv) V_P and I_T recorded, R_P < R_1 [1]

(c) statement matches results and idea of within/beyond limits of
experimental accuracy / too far apart / too close together
ù 10 % no, < 10 % yes [1]

(d) brighter [1]

[Total: 10]

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