CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2012 series

0625 PHYSICS

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

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1 **(a)** l value 45 – 55 cm / 450 – 550 mm unit required [1]

(b) Use of fiducial mark/blocks/protractor/set square
Move ruler closer to bob/lower bob [1]
(Can score the mark from a well-drawn diagram)

(c) Table: cm, s, s [1]
Five t values (for 10, not 9 swings) (t_{10} = 14.2 s) [1]
t values all similar (± 0.2 s) [1]
T values correct [1]
T values consistent 2, 3 or 4 significant figures [1]

(d) Description: little or no effect (owtte) allow ecf from **1(c)** [1]
Justification: T values very similar (owtte) [1]

(e) Any one from:
Reduces human reaction error
Gives a more accurate value of T
T is too small/oscillations are too quick
Gives an average value (of T) [1]

[Total: 10]

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

(b) Sensible hot water temperature θ_0 (between 60 and 100) [1]
$\theta_1 < \theta_0$ and temperatures in °C at least once, not contradicted [1]
θ_A and θ_H correct calculations [1]

(c) $\theta_2 < \theta_1$, $\theta_3 < \theta_2$ [1]
$\theta_W < \theta_B$ [1]

(d) Ratios calculated [1]
Ratios close (owtte) or ratios too different (owtte) [1]

(e) Any two from:
Room temperature/ draughts/humidity/air conditioning
Initial (water) temperature (cold or hot)
Amount of stirring
Time interval
Mass/volume/amount of water/water level
Size/surface area/shape/material/thickness of beaker [2]

[Total: 10]

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3 **(a)** I_S to at least 2 decimal points and ⩽ 1A [1]
V_S to at least 1 decimal point and 1 to 2.5 V [1]
R_S value correct [1]

(b) V_P and I_1 present [1]
I_2 and $I_3 < I_1$ [1]
$I_C = I_1$ (± 10%) [1]
Units A and V both at least once and not contradicted [1]
R_P with unit [1]

(c) Circuit: correct symbol for variable resistor (not potential divider symbol) [1]
Variable resistor in a correct position [1]

[Total: 10]

4 **(a)** and **(b)** Table: Five *v* values present [1]
Correct *d* values [1]

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

(d) Triangle method used and shown [1]
Using at least half of line [1]

(e) *f* = 14 – 16 cm (accept numbers rounding to 14/16) [1]
2 or 3 significant figures and unit [1]

[Total: 10]

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