MARK SCHEME for the October/November 2007 question paper

0625 PHYSICS

0625/05   Paper 5 (Practical Test), maximum raw mark 40

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1 **(a)–(e)** t in s, θ in ^{o}C, and θ_0 (10 – 45)　　　　　　　　　　　[1]
　　　　　　Complete set of readings, temps decreasing　　　　　　　[1]
　　　　　　Evidence of θ to 1°C　　　　　　　　　　　　　　　[1]

　　(f) **(i)** T_1, T_2 correct arithmetic　　　　　　　　　　　　　[1]

　　　　(ii) $T_1 > T_2$　　　　　　　　　　　　　　　　　　　　[1]

　　(g) **(i)** reason consistent with results　　　　　　　　　　　　[1]

　　　　(ii) Three from:
　　　　　　room temp/draughts, etc.
　　　　　　volume/mass/amount
　　　　　　beaker/insulation/lid/surface
　　　　　　liquid
　　　　　　amount of stirring
　　　　　　(<u>not</u> starting temperature)　　　　　　　　　　　[3]

　　(h) lid　　　　　　　　　　　　　　　　　　　　　　　[1]

　　　　　　　　　　　　　　　　　　　　　　　　[Total: 10]

2 **(a)** h_0 25 – 100 cm with correct unit　　　　　　　　　　　[1]

　　(b)–(d) complete table h, d　　　　　　　　　　　　　　[1]
　　　　　　correct arithmetic for d　　　　　　　　　　　　　[1]
　　　　　　all h to nearest mm　　　　　　　　　　　　　　[1]

　　(e) Graph:
　　　　suitable scale labelled symbol/unit　　　　　　　　　　[1]
　　　　all plots to nearest ½ sq (–1 each error or omission)　　　[2]
　　　　line thin and well judged　　　　　　　　　　　　　[1]

　　(g) calculation of d correct　　　　　　　　　　　　　　[1]
　　　　correct reading from graph to ½ square and to 1dp　　　[1]

　　　　　　　　　　　　　　　　　　　　　　　　[Total: 10]

3 **(a)–(c)** 4 I values, sensible (watch for I x 10)   [1]
All I to at least 2 dp   [1]
I in A at least once   [1]
$I = I_1 + I_2 \pm I_3$ + 10%   [1]

(d) statement (yes)
reason consistent with readings   [1]

(e) variable resistor/extra cell/vary power supply/different
number of lamps   [1]

(f) sensible V (< 3V), unit and at least 1 dp   [1]

(g) correct arithmetic for R [1]
unit and 2/3 sf   [1]

(h) $V_a = 0$, $V_b = V$ [1]

[Total: 10]

4 **(f)–(h)** sensible x value (less than h)   [1]
sensible h value (typical block: 10 cm)   [1]
x to nearest mm   [1]
x and h with same unit   [1]

correct arithmetic for n [1]

(i)–(j) second different h value   [1]

(k) correct method for average n [1]
2/3 sf and no unit   [1]
both n values 1.4 – 1.6   [1]

(l) two equal heights from bench
(or other valid method)   [1]

[Total: 10]