

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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All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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- 1 (a)–(e) t in s, θ in $^{\circ}\text{C}$, 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
 (not 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 $\frac{1}{2}$ sq (–1 each error or omission) [2]
 line thin and well judged [1]
- (g) calculation of d correct [1]
 correct reading from graph to $\frac{1}{2}$ square and to 1dp [1]
- [Total: 10]**

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- 3 (a)–(c) 4 I values, sensible (watch for $I \times 10$) [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) [1]
 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]