

**MARK SCHEME for the October/November 2008 question paper**

**0625 PHYSICS**

**0625/05**

Paper 5 (Practical Test), maximum raw mark 40

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

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- 1 (a) (i) & (ii)  $h_0$  value [1]  
 $h_1$  value <  $h_0$  value [1]
- (iii) correct  $e_1$  value [1]  
all above in correct unit (m, cm, mm) stated at least once [1]
- (b) (i) & (ii)  $h_2$  value, < $h_0$  and >  $h_1$  [1]  
 $e_2$  value correct [1]
- (c) density calculation correct [1]  
2/3 significant figures, value 6–10 g/cm<sup>3</sup> [1]
- (d)  $e_2$  greater [1]  
 $\rho$  greater (or identical to  $e_2$  answer) [1]

**[Total: 10]**

- 2 Diagram: correct symbols for ammeter and voltmeter [1]  
correct symbols for resistor [1]  
correct circuit arrangement [1]
- Table: units V, A (symbol/word) [1]  
All V to at least 1 d.p., < 1.5 V [1]  
All I to at least 2 d.p., ≤ 1 A [1]  
Circuit 3 V < circuit 1 and 2 values [1]
- (i) Statement: Yes (if within 10%) No (if not) [1]  
Justification: must match statement (e.g. close enough/too different or words to that effect) [1]
- Resistance at connections/temperature change/  
Internal resistance of source/other sensible suggestion [1]

**[Total: 10]**

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3 (a) record of  $\theta_p$  (sensible value) [1]

Table

$\theta$  in °C,  $V$  in cm<sup>3</sup> [1]

6 sets of readings with correct  $V$  0, 20, 40, 60, 80, 100 [1]

Temps decreasing [1]

Graph: axes labelled [1]

axes suitable (e.g. not '3' scale) and plots occupy more than ½ grid [1]

all plots correct (better than ½ sq) [1]

well judged, thin best fit line [1]

(d) 1. sensible comment about heat loss to the surroundings, e.g. use of insulation/lid [1]  
 2. sensible comment about adding water in a regulated, timed flow [1]

**[Total: 10]**

4 (a)  $y$  value 25–53 cm [1]

(b) correct calculation of  $f$  [1]  
 correct unit for  $y$  and  $f$  [1]

(c)  $y$  value 20–40 (cm) and  $f$  present [1]

(d) correct method [1]  
 average  $f$  13–17 (cm) [1]

(e)  $d$  13–17 cm [1]

(f) Yes (if within 2 cm) No (if not) [1]

(g) same size/real [1]  
 Inverted/brightness/coloured edges [1]

**[Total: 10]**