

**MARK SCHEME for the May/June 2009 question paper
for the guidance of teachers**

0625 PHYSICS

0625/06

Paper 6 (Alternative to Practical), maximum raw mark 40

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- 1 (a) d 2.5 (cm) [1]
 x 14.5 (cm) [1]
 diagram showing blocks correctly placed across the ends [1]
 rule position (or distance) shown correctly [1]
- (b) (i) V_e 71.1 - 71.2 (cm³) ecf allowed [1]
 (ii) measuring cylinder reading 56 (cm³) [1]
 (iii) ρ 2.05–2.08 (or 2.1) ecf allowed [1]
 g/cm^3 and 2 or 3 significant figures [1]
- [Total: 8]**
- 2 (a) 87 (°C) [1]
- (b) s , °C, °C [1]
- (c) **A** ecf allowed [1]
 justified by reference to readings (up to 90s) with comparison of drops in temperatures (with numbers) given (ecf allowed) [1]
- (d) Any two from:
 starting temperature
 room temperature
 carry out at same time
 same thermometer (words to that effect)
 same position of thermometers
 same time intervals [2]
- [Total: 6]**
- 3 (a) R values 0.553, 1.55, 2.74, 3.74, 4.92 [1]
 (2,3,4 or more significant figures) [1]
 Consistent 3 or consistent 4 significant figures for final four entries [1]
- (b) Graph:
 Axes labelled and scales suitable (must include origin) [1]
 Plots correct to $\frac{1}{2}$ square (–1 each error or omission) [2]
 Well judged str. line taking account of all points and reaching an axis [1]
 Thin line [1]
- (c) Statement proportional (wtte) or as x increases, R increases [1]
 Justification straight line through origin [1]
- (d) Clear indication of method on graph [1]
 Correct value to $\frac{1}{2}$ square [1]

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- (e) low current/switch off between readings
or add (variable) resistor/lamp
or reduce voltage/power [1]

[Total: 12]

- 4 (a) 4.0 (cm) [1]
6.0 (cm) [1]

- (b) 20, 30 ecf allowed [1]
 f values 11.88 (11.9), 12.00 (12.0) [1]
 f consistent 3 or more significant figures [1]

- (c) average f 11.9, 11.94, 11.95, 12.0, 12 (cm) ecf allowed [1]
2/3 significant figures [1]

- (h) Any two from
use of darkened room
slowly moving lens back and forth to get good image
clamp rule or place on bench
avoid parallax action given
object/lens/screen perpendicular to bench
object and lens same height from bench
repeats [2]

[Total: 9]

- 5 (a) Q correct position with suitable number(s) [1]
Rule correctly tilted, and on bench (or arrow to indicate) [1]

- (b) Any two from:
Readings taken at either side/diameter of cylinder
Position of mid point found
Mark position of centre [2]

- (c) 34.5 cm [1]

[Total: 5]