

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

0625 PHYSICS

0625/05

Paper 5 (Practical), maximum raw mark 40

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- 1 (a) d value 1.5–3.5 (cm) and h value 12.0–16.0 (cm) [1]
 diagram showing method [1]
 correct calculation of V_e [1]
- (b) mass of tube 20–35 (g) [1]
- (c) V_1 recorded and correct calculation of density [1]
- (d) V_1 , V_2 and $(V_2 - V_1)$ present, V_1 150–200 and $V_2 > V_1$ [1]
 m_2 20–35 (g) (no ecf) [1]
 volumes in cm^3 , masses in g [1]
- (e) V_3 present, ρ values same to within 0.5 g/cm^3 [1]
 correct unit and 2/3 sf [1]

[Total: 10]

- 2 (a)–(d) [1]
 t in s θ in $^\circ\text{C}$ [1]
 t values 0, 30, 60, 90, 120, 150, 180 [1]
 Thermometer **A**, temperatures decreasing [1]
 Thermometer **B**, temperatures decreasing [1]
 Thermometer **B**, temperatures decreasing less rapidly [1]
 Evidence of temperatures to 1°C [1]
- (e) Statement matches readings [1]
 Justified by reference to readings [1]
 comparison given of drops in temperature with numbers [1]
- (f) Any two from:
 same starting temperature
 constant room temperature
 carry out at same time
 same thermometer (words to that effect)
 same thermometer positions
 same time intervals [2]

[Total: 10]

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3 (d) I in A to 2 d.p. $< 2 A$ [1]

(a)–(h)

Table:

correct x values (0.1, 0.3, 0.5, 0.7, 0.9) [1]

V values all $< 2.5 V$ and to at least 1 d.p. [1]

R values correct [1]

(i) Graph:

Axes labelled and scales suitable [1]

All plots correct to $\frac{1}{2}$ square [1]

Well judged line, continued to an axis [1]

(j) Statement proportional (words to that effect, including as x increases, R increases)

Justification straight line through origin [1]

(k) Clear indication of method on graph [1]

Correct value to $\frac{1}{2}$ square [1]

[Total: 10]

4 (a)–(g)

Table:

correct u values 25.0 (cm), 45.0 (cm) [1]

u and v in cm [1]

v values 35–40 and 20–25 [1]

f values consistent 3 or more significant figures [1]

f in cm [1]

(h) correct average value for f [1]

2/3 significant figures [1]

average f 14–16 cm [1]

(i) Any one statement (1) with matching explanation (1) from:

use of darkened room; to see image clearly (1 + 1)

slowly moving screen back and forth; to get clear image (1 + 1)

clamp rule or place on bench; to obtain accurate distance measurements (1 + 1)

avoid parallax; looking perpendicularly at rule (1 + 1)

lining up of object and lens; to obtain clear image (1 + 1)

mark centre of lens on block; to obtain accurate distance measurement (1 + 1)

ensure lens vertical; to obtain clear image (1 + 1)

object and lens same height from bench; to obtain clear image (1 + 1) [2]

[Total: 10]