UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

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_i 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)**
t in s θ in °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
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]

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 ½ 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 ½ 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]