**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

**0625/06** Paper 6 (Alternative to Practical), 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, which would have considered the acceptability of alternative answers.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the May/June 2009 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

UNIVERSITY of CAMBRIDGE
International Examinations

**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 ($cm^3$) ecf allowed [1]

**(ii)** measuring cylinder reading 56 ($cm^3$) [1]

**(iii)** $\rho$ 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 ($^oC$) [1]

**(b)** s, $^oC$, $^oC$ [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
(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 ½ 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 ½ square [1]

© UCLES 2009

**(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]**

© UCLES 2009