**UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**International General Certificate of Secondary Education**

# MARK SCHEME for the October/November 2010 question paper for the guidance of teachers

## 0625 PHYSICS

**0625/63** Paper 6 (Alternative to Practical), maximum raw mark 40

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**1** **(a)** graph: axes labelled and scales suitable [1]
all plots correct to nearest ½ small square [2]
well judged best fit line [1]
thin best fit single line/no 'blobs' [1]

**(b)** statement matches line (expect YES) [1]
justification matches statement
(expect straight line through origin) [1]

**(c)** triangle method with more than half the line used [1]
clear how obtained – shown on graph [1]
*m* correct in kg, 2 or 3 significant figures [1]
1.39 – 1.45 kg - unit penalty

**[Total: 10]**

**2** **(a)** $\theta_r = 27$ [1]

**(b)** **(i)** *t* in s, $\theta$ in °C in both tables [1]

**(ii)** statement correct (about the same) [1]
justified – within limits – numbers similar, etc. [1]

**(c)** any two from:
same starting temperature
constant room temperature/avoid draughts
carry out at same time/place/time interval
same thermometer (wtte)
same mass/volume/amount of water
same type of beaker [2]

**[Total: 6]**

**3** **(a)** **(i)** voltmeter symbol [1]
correct position [1]

**(ii)** variable resistor/rheostat [1]

**(b)** 2.2 marked [1]

**(c)** **(i)** correct values 6.11, 6.03, 6.12, 6.17, 6.09 [1]
consistent 2 or 3 significant figures [1]

**(ii)** V, A, Ω [1]

**(iii)** statement matches results (expect YES) [1]
explanation matches statement (expect same within limits of experimental accuracy) [1]

**[Total: 9]**

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**4** **(a)** *a* correct 9.9 – 10cm [1]

**(b)** *y* correct (3 × *a*) 30cm allow ecf from **(a)** [1]

**(c)** at least two readings recorded [1]
*d* = 2.8cm [1]

**(d)** **(i)** $s^2$ values correct 4.84, 5.76, 6.76, 7.84, 9.61 [1]
consistent number of significant figures (2 or 3) [1]

**(ii)** statement matching results (expect YES) [1]
justification matches statement (expect within limits of experimental accuracy, or 'close enough', or wtte) [1]

**(e)** any two of:
use of darkened room
how to avoid parallax when measuring distances
use of marks paper on screen to aid measurements
repeat (and average)
screen/object card perpendicular to bench [2]

**[Total: 10]**

**5** **(a)** three from:
length/diameter/number of coils of spring – any two for 1 mark each
mass of spring
selection of loads
(NOT room temperature) [3]

**(b)** $l_o$ shown and $l$ shown (consistent with $l_o$) [1]

**(c)** use of fiducial aid [1]

**[Total: 5]**

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