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

0625/61 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.

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1 **(a)** correct 1/*d* values 0.0222, 0.0294, 0.0370, 0.0444, 0.0518
all to 2 significant figures or all to 3 consistent significant figures

(b) graph:
axes suitable and labelled [1]
all plots correct to ½ small square [1]
good line judgement (position) [1]
thin line, single, no blobs (quality) [1]

(c) gradient by triangle method using at least ½ candidate's line [1]
clear, on graph, how obtained [1]

(d) *z* value 0.9 – 2.5 [1]
2 or 3 significant figures and unit cm given [1]

[Total: 10]

2 **(a)** θ_r 26 [1]

(b) **(i)** s and °C in both tables [1]

(ii) at least 300s and given to nearest 10s or in mins [1]

(c) Table 2.2 (heating) justified by two temperature differences compared,
must see 14 and 44/56 OR 74 to 60 and 25 to 69/81 [1]

(d) any two from:
same starting temperature
constant room temperature/avoid draughts/same place
same time intervals
same thermometer (wtte)
same mass/amount/volume of water
same beaker
lid always used [2]

[Total: 6]

3 **(a)** 0.3 – 0.31

(b) Ω, A
10.1 [1]

(c) correct calculation of $0.5I_o$ shown (ecf) [1]
10(Ω) [1]

(d) diagram:
resistors in parallel [1]
voltmeter symbol [1]
voltmeter position [1]

[Total 8]

4 **(a)** **(i)** – **(iii)**
EF extended correctly and neat [1]
P_3P_4 line drawn correctly and neat [1]
G labelled [1]
P_1 and P_2 at least 5cm apart [1]

(iv) and **(v)** 40 – 42 (ecf) [1]
(θ – 2i) correct (ecf) [1]

(b) **(i)** 2 and unit (^{o}) present at least once [1]

(ii) yes (or No, ecf) [1]
reference to 'within limits of experimental accuracy'
(or close enough or wtte) [1]

(c) no concern about pins being vertical (or wtte) [1]

[Total: 10]

5 **(a)** any three from:
mass/volume/amount of water
room temperature
temperature of water
amount of stirring
size/shape of beaker
temperature of ice cube
number/mass/size of cubes [3]

(b) any three from:

stopclock:	time
balance:	mass
thermometer:	temperature
measuring cylinder:	volume (of water)

[3]

[Total 6]