UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2011 question paper

for the guidance of teachers

0625 PHYSICS

0625/63 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)** 100, 200, 300, 400, 500 [1]

(b) Graph:
Axes labelled (label and unit) [1]
Scales suitable [1]
All plots correct to nearest ½ small square [1]
Continuous, straight, well-judged best fit line [1]
Thin line, neat plots [1]

(c) *F* correct from graph scale to ½ small square – must see unit of N [1]
Clear how obtained [1]

(d) Weight/mass/force of rule owtte [1]

[Total: 9]

2 **(a)** 23 (ºC) [1]

(b) s, ºC, ºC, words or symbols [1]
30, 60, 90, 120, 150, 180 [1]

(c) Uninsulated (owtte) OR no significant difference [1]
Justified by reference to temperature differences and time [1]

(d) Any two from:
initial temperature/starting temperature/temperature of hot water
(constant) room temperature/ correct named reference to environmental condition
tube size/same test-tube
thickness of glass
volume/amount/level of water
thickness of cotton wool
depth (of immersion) of thermometer
(rate of) stirring [2]

(e) Any two suitable insulators (that can be wrapped around tube) [2]

[Total: 9]

3 **(a)** 4.29, 6.36, 8.50 [1]
consistent 2 or 3 significant figures [1]
cm, A, V, Ω in symbols or words [1]

(b) Yes [1]
Within limits of experimental accuracy [1]

(c) One of:
Switch off between readings
Use of low current (owtte) [1]

(d) Correct circuit symbol [1]
X position correct [1]

[Total: 8]

4 **(a)** i = 30° (±1°) - no penalty for missing or incorrect unit [1]

(b) a = 12 to 13mm/1.2 to 1.3cm [1]
b = 36mm/3.6cm [1]
Lines HF and P_4P_3H drawn neatly and correctly [1]
n correctly calculated [1]
n 2 or 3 significant figures, no unit [1]

(c) At least 5 cm [1]
Greater accuracy owtte [1]

(d) Pin: pins not vertical/not straight
OR pins too close
OR thickness of lines/size of holes [1]
Ray Box: thickness of ray [1]

[Total: 10]

5 **(a)** All labels correct: [1]
F/*W*/weight/load/Force
L//length
e/extension/x/Δ*l*/*E*
Units N, m, m only [1]

(b) Two from:
Same diameter/thickness/cross-sectional area/cross-section
Same length
(Room) temperature [2]

[Total: 4]