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

0625/51 Paper 5 (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)** *d* values in cm and less than 50 cm [1]
correct calculation of 1/*d* [1]

(b) Graph:
Axes labelled and suitable scale [1]
All plots correct to ½ small square [1]
Well judged line (position) [1]
Thin line, single (quality) [1]

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

(d) *z* value 0.5 cm – 5 cm [1]
z given to 2 or 3 significant figures with correct unit [1]

[Total: 10]

2 **(a)** θ_f sensible value [1]

Table:
t in s, θ in °C [1]
Correct *t* values [1]
Table 2.1 temperatures decreasing [1]
Table 2.2 temperatures increasing [1]
Evidence of temperatures to 1°C [1]

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

(f) Statement matches readings and justified by reference to readings
Comparison given of changes in temperature and time with numbers [1]

(g) 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: 10]

3 **(a)** Ammeter symbol [1]
Resistor symbol [1]
Correct circuit [1]

(b) I_0 0.1–1.0 (A) [1]

(c) Table:
R in Ω, I in A [1]
All I to 2 d.p. [1]
I values decreasing [1]
Final I value = $0.5I_0$ (± 10%) [1]

(d) Correct calculation of $0.5I_0$ shown (ecf) [1]
Estimate matches results and given to nearest ohm [1]

[Total: 10]

4 Trace:
Normal at 90° [1]
Correct initial angle of incidence 18°–22° [1]
Point **E** labeled [1]
Initial pin separations ⩾ 5 cm [1]
All lines neat and thin [1]

(i) θ correct to ± 2° [1]

(j) Correct calculation of difference [1]

(k) new values present and angles in °
(at least once, no contradiction) [1]

(l) Correct statement matching results
(either exact or within limits of experimental accuracy, or wtte) [1]
Justified referring to specified results [1]

[Total: 10]

Please note that due to a labelling error on the paper, the final five marks were not considered when deciding the grade thresholds.