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

0625/51 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.

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

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

Cambridge is publishing the mark schemes for the May/June 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

1 **(a)** Lengths 21.0 cm, 14.9 cm, 25.7cm, all ± 2mm – unit needed [1]

(e) **(i)** Circles correctly placed on correct outline [1]
Circles neat and labelled [1]

(ii) Crosses small, neat, positions sensible (one each side) [1]

(iii) Lines drawn accurately (± 1mm) [1]
Lines cross at same point, within 5mm [1]

(f) *a* correct to ± 1mm [1]
Well-judged position [1]
Line correctly drawn [1]

(g) Viewing line directly in front of card/perpendicular to card
Any clear explanation of how to avoid parallax/shine a light from the front/wait until card stops swinging/minimise distance between card and plumbline.

[Total: 10]

2 **(a)**, **(b)**
t in s, θ in ºC [1]
Correct times 0, 30, 60, 90, 120, 150, 180 [1]
Temperatures falling [1]

(c) T_1 and T_2 correct [1]

(d) Graph:
Axes, correct way around, both labelled with quantity [1]
Scales suitable [1]
All plots correct to ½ small square [1]
Good line judgement with thin line [1]

(e) **(i)** Faster rate of cooling in first 30s (owtte) – allow ecf from **(c) (i) (ii)** [1]

(ii) Decreasing slope of line (owtte) [1]

[Total: 10]

3 **(a)**, **(b)**, **(c)**

V, A, Ω [1]
Both V to at least 1 d.p. and < 3V [1]
Both I to at least 2 d.p. and < 1A [1]
R values correct [1]
R values consistent 2 or 3 significant figures [1]

(d) V and I present [1]
R_T correct and different from R_S [1]

(e) Correct statement – expect no [1]
Matching justification (using idea of experimental accuracy) [1]

(f) Filaments glow [1]

[Total: 10]

4 Trace:

Normal at 90° in correct position [1]
All lines present and neat [1]
CD correct position [1]
AB correct position [1]
P_2P_3 distance $\geq$ 5.0cm [1]

Table:

i values correct to 2° [1]
r values correct to 2° [1]
$i = r$ to 4° [1]

(j) Any two:
Thickness of lines
Thickness of mirror
Thickness of protractor (owtte)
Thickness of pins [2]

[Total: 10]