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

0625/61 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)** Three straight lines in correct positions [1]
All lines continuous, straight, neat and thin [1]

(b) a = 4.2 – 4.4 (cm) no ecf [1]
Well-judged position in triangle [1]
Line correctly drawn [1]

(c) Viewing line directly in front of card (owtte) [1]

[Total: 6]

2. **(a)** 23 (°C) [1]

(b) t in s, θ in °C [1]

T_1= 14 [1]
T_2 = 1 [1]

(c) Graph:
Axes the right way round, both labelled with quantity, ignore unit [1]
Use of the scale temperature 50 – 80 and time 0 – 200 or 0 – 250, using the whole grid [1]
All seven plots correct to ½ small square [1]
Good line judgement [1]
Thin line [1]

(d) Greater rate of cooling in first 30 s (owtte) ecf possible [1]
Decreasing slope of graph (owtte) ecf possible [1]

[Total: 11]

3. **(a)** **(i)** 5.4 or 5.43 or 5.429 AND 5.9 or 5.94 or 5.938 [1]
R values both to 2 significant figures OR both to 3 significant figures, in table [1]

(iii) V, A , Ω [1]

(b) **(i)** Correct series circuit [1]
Correct symbols for ammeter, voltmeter and lamps [1]

(ii) R_T = 8.26(Ω) [1]

(c) Statement: expect No (ecf available for Yes) [1]
Outside limits of experimental accuracy (owtte) [1]

(d) Brightness changes (owtte) [1]

[Total: 9]

4. **(a)** Normal in centre at 90° to **MR** [1]
CD drawn correctly [1]
Both neat and thin [1]

(b) **(i)** **CN** drawn correctly [1]

(ii) *i* = 23(°) ± 1(°) (ecf allowed) [1]

(c) **(i)** Line through P_3 and P_4 correct [1]
r = 21(°) ± 1(°) [1]

(d) Any two:
Thickness of lines
Thickness of mirror
Protractor can only be read to $\pm$ 1° OR protractors are not that precise (owtte)
Thickness of pins [2]

[Total: 9]

5. 1.5 cm [1]
100 cm^3 [1]
0.07 m^2 [1]
0.12 A [1]
23 cm [1]

[Total: 5]

Abbreviations in the mark scheme:

ecf = error carried forward.
owtte = or words to that effect.
c.a.o. = correct answer only