MARK SCHEME for the May/June 2010 question paper

for the guidance of teachers

0625 PHYSICS

0625/51   Paper 51 (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.

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1 **(a)** l_A value 20 – 100 mm [1]
l value greater than l_A and correct calculation of e_A [1]
clear, suitable marks (must indicate a reproducible length) [1]

(b) l_B value 20 – 100 mm [1]
l and e_B recorded [1]

(c) values of l recorded and correct e values [1]
e_{av} correct <u>method</u> [1]

(d) statement matches readings [1]
justification matches statement and by reference to results [1]

(e) any one of:
avoidance of parallax error explained
use of horizontal aid
measuring to same point each time
repeats
wait for springs to stop moving [1]

[Total: 10]

2 **(a)** temperatures decreasing [1]
evidence of temperatures to 1°C [1]

(b) T_1 correct [1]
T_2 correct [1]
unit °C [1]

(c) graph:
y-axis labelled [1]
plots occupying at least half of grid [1]
all plots correct to ½ square [1]
well judged line [1]
thin line [1]

[Total: 10]

3 (a) correct symbol [1]
correct position [1]

(b) table:
correct l values [1]
V values all < 2.5 V and to at least 1 d.p. [1]
V values decreasing [1]
V/l values correct [1]
unit V/m [1]

(c) statement matches readings (Expect NO) [1]
justification matches statement and by reference to results [1]
i.e. V/l not constant, V increases as l decreases or wtte.

(d) any one of:
check for zero error
avoidance of parallax error when reading l
switch off between readings
repeats

[Total: 10]

4 ray trace:
all lines present, thin, neat and in correct areas [1]
normal drawn [1]
GJ at 30° to normal (by eye) [1]
second mirror position 10° from first [1]
P_1P_2 distance at least 5 cm [1]

(i) r_1 correct to ± 2° [1]

(n) r_2 correct to ± 2° [1]
α and $(2\theta - \alpha)$ correct (ignore – sign) [1]

(o) statement matches result (Expect YES) [1]
justification matches statement and by reference to result [1]

[Total: 10]