MARK SCHEME for the May/June 2010 question paper

for the guidance of teachers

0625 PHYSICS

0625/52   Paper 52 (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.

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

1 (a) table:

  5 d values in cm (all < 50) [1]

  1/d values correct (at least 2 significant figures) [1]

(b) graph:

  axes labelled [1]

  scales suitable, plots occupying at least half grid [1]

  plots all correct to ½ square [1]

  well judged line thin line [1]

(c) triangle <u>method</u> used and <u>shown</u> (any indication on graph) [1]

  (triangle) using at least half line (can be seen in calculation) [1]

(d) µ 27 – 33 (g) [1]

  2 or 3 significant figures and unit g [1]

[Total: 10]

2 (a) table:

  t in s, θ both in ^{o}C [1]

  times 30, 60, 90, 120, 150, 180 [1]

  beaker A temperatures decreasing [1]

  dish B temperatures decreasing more rapidly [1]

  evidence of temperatures to 1 ^{o}C [1]

(b) both temperature falls correct (ignore unit or lack of unit) [1]

(c) justification matches statement (expect B)

  and by reference to readings (need a comparison – not 'heat' or 'it')

          B <u>&</u> temp fall for this mark [1]

          in same time [1]

(d) any two from:

  same starting temperature

  stir/same thermometer position

  same interval time

  constant room temperature/carry out at same time

  same volume/amount/mass of water

  avoid draughts or wtte [2]

  (NOT reference to container, insulation, precaution)

  (extra answers: –1 if incorrect, ignore if neutral)

[Total: 10]

3 **(a) – (e)** table:

V, A, Ω [1]

V to at least 1 dp (1 – 2.5) [1]

I to at least 2 dp and < 1A [1]

correct R values [1]

circuit 3 R value less than other two values [1]

(f) diagram:

correct symbols [1]

voltmeter position correct [1]

lamps in parallel in correct circuit [1]

(g) statement matches readings   (expect NO) [1]

justification matches statement and by reference to results [1]

[Total: 10]

4 ray trace:

one set of lines present, thin, neat and in correct areas [1]

normal drawn [1]

EF at 30° to normal (by eye) [1]

one P_1P_2 distance at least 5 cm [1]

one P_3P_4 distance at least 5 cm [1]

(h) θ correct to $\pm\,2^\circ$ [1]

(i) $(\theta - 2i)$ correct [1]

(j) θ and $(\theta - 2i)$ present, unit ° at least once in **(h)**, **(i)** or **(j)** [1]

(k) statement matches results   (YES or NO) [1]

justification matches statement and by reference to results

(within limits of experimental inaccuracy, wtte

or <u>too</u> different, wtte) [1]

[Total: 10]