CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2012 series

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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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1 **(a)** d_0 less than 900 mm and sensible [1]
Diagram correct [1]
Correct L values *(1 – 5)*, d values present and decreasing [1]
Correct e values [1]

(b) Graph:
Axes correctly labelled with quantity and unit and correct way around [1]
Suitable scales [1]

All plots correct to ½ small square [1]

Good line judgement; single, thin, continuous line [1]

(c) Triangle method used and shown on the graph [1]
Using at least half of line [1]

[Total: 10]

2 **(a)** sensible value for θ_R [1]

(b) to **(d)** Table:
s, °C, °C [1]
Times 0, 30, 60, 90, 120, 150 [1]
Both sets of temperatures present and decreasing [1]
0 – 30 s decrease greater than 120 – 150 s decrease [1]
Evidence of temperatures to 1 °C or better [1]

(c) Statement matches readings [1]
Justified with reference to numbers in table [1]

(e) Any two from:
Volumes of water
Room temperature/draughts
Same beaker
Initial water temperature [2]

[Total: 10]

3 **(a)** Correct symbols for ammeter, voltmeter and lamps [1]
Ammeter and voltmeter in correct positions [1]
Correct parallel circuit [1]

(b) I to at least 2 decimal places [1]
All voltages to at least 1 decimal place [1]
Correct calculation of R_A and units V, A, Ω at least once [1]

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(c) **(i)** All *V* values present [1]

(ii) V_B 1 – 2.5 V [1]

(d) Statement matches readings [1]
Justified with idea of experimental inaccuracy [1]

[Total: 10]

4 Trace:
Normal at 90° in correct position (by eye) [1]
Angle of incidence 30° ± 2° [1]
All lines present and neat [1]
First P_1P_2 distance ≥ 5.0 cm [1]
All pin separations ≥ 5.0 cm [1]

(h) *r* value correct to ± 2° unit required [1]

(i) *i/r* value correct [1]

(j) *r* value correct to ± 2° unit required [1]
both *i/r* values to 2 or 3 significant figures and no unit [1]

(k) Idea of within (or beyond) limits of experimental accuracy [1]

[Total: 10]

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