CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2013 series

0625 PHYSICS

0625/51 Paper 5 (Practical), maximum raw mark 40

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

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1 (a) (i) l_0, recorded in mm [1]

(ii) workable length clearly shown on Fig. 1.1 (or Fig. 1.2) [1]

(iv), (v) table:
correct *F* values used and increasing l values (>l_0) [1]
e values correct [1]

(b) graph:
axes correctly labelled [1]
suitable scales [1]
all plots correct to ½ small square [1]
good line judgement AND thin, continuous line [1]

(c) triangle method used and shown [1]
using at least half of candidate's line [1]

[Total: 10]

2 (a) (i) sensible value for θ_H [1]

(a)–(d) table:
s, °C, °C [1]
correct *t* values 30, 60, 90, 120, 150, 180 [1]
temperatures decreasing [1]
evidence of temperatures to precision of at least 1°C [1]
position B, greater decrease in temperature [1]

(c) sensible new value for θ_H (lower than first value) [1]

(e) one from:
viewing thermometer at right angles
reference to being ready on time [1]

(f) any two from:
room temperature
starting temperature
distance of thermometer bulb from water surface
orientation of thermometer
draughts [2]

[Total: 10]

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3 **(a)** all V to at least 1 d.p. and < 3 V [1]
I to at least 2 d.p. and < 1 A [1]
V in V and I in A (at least once, not contradicted) [1]
P in W (at least once, not contradicted) [1]
P values correct [1]
$P_T = P_1 + P_2 + P_3 \pm 10\%$ [1]

(b) statement matches results (expect YES) and justification in terms of within or beyond limits of experimental accuracy o.w.t.t.e [1]

(c) **(i)** diagram:
lamps in parallel and variable resistor in series with power supply, correct symbols for variable resistor, lamps, voltmeter [1]
<u>one</u> voltmeter, correctly positioned [1]

(ii) vary current (or p.d.) [1]

[Total: 10]

4 **(a)** **(i)** v = 28 – 32 (cm) [1]

(ii) **(iii)** calculations correct [1]

(iv) f correct [1]

(b) v = 22 – 26 (cm) [1]
f values within 4 cm of each other [1]

(c) **(i)** Sensible range up to 2 cm around a value approximately 24 cm [1]

(ii) f_{AV} given to 2 or 3 significant figures and correct unit [1]
f_{AV} = 13 – 17 cm [1]

(iii) any two from:
use of darkened room / brighter lamp
mark position of centre of lens on holder
place metre rule on bench (or clamp in position)
ensure object and lens are same height from the bench
lens / object / screen perpendicular to bench
use of repeats [2]

[Total: 10]

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