CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2014 series

0625 PHYSICS

0625/52   Paper 5 (Practical Test), 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) (ii) *l* and *x* recorded in cm, with *l* between 15 and 18 cm
and *x* between 13 and 17 cm [1]

   (iii) correct calculation of *y* [1]

(b) evidence of at least three turns (accept from a sketch) [1]

  working / method shown [1]

  c between 2 and 3 cm and to nearest 0.1 cm [1]

(c) any one from:
- stretching of string
- thickness of string
- thickness of mark
- gaps between turns
- winding of turns at an angle [1]

(d) correct calculation of *V* to 2 or 3 significant figures (penalise rounding errors) [1]

  cm^3 [1]

(e) suitable answer < 1 (cm^3) (expect estimate to nearest 0.1 cm^3) [1]

  sensible reasoning / working / method which takes account of sharpened shape
and length [1]

[Total: 10]

2 (a) correct *t* values 30, 60, 90, 120, 150 [1]

  temperatures decreasing (accept 1 pair of identical readings) [1]

(b) axes correctly labelled with quantity and unit [1]

  suitable scales on both axes, occupying more than half the grid [1]

  all plots correct to ½ small square [1]

  good line judgement [1]

  thin, continuous line and neat plots (penalise large 'blobs') [1]

(c) (i) statement to match results [1]

  (ii) statement to match graph line [1]

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(d) clear description or diagram to show one from:
- perpendicular line of sight
- reading to bottom of meniscus [1]

[Total: 10]

3 (a) (i) V to at least 1 d.p. and < 3 V [1]

I to at least 2 d.p. and < 1 A [1]

(ii) R calculated correctly (penalise incorrect rounding) [1]

(b) V and I recorded with I less than in **(a)** [1]

(c) (i) V in V, I in A, R in Ω in **(a)**, **(b)** or **(c)** at least once, not contradicted [1]

(ii) R to 2 or 3 significant figures [1]

(d) R <u>constant</u> (provided it matches results) no e.c.f. [1]

(e) clear description or diagram showing triangle method with large triangle **or** taking two co-ordinates far apart on line [1]

how to calculate gradient e.g. equation or rise / run, etc. [1]

(f) standard symbol for variable resistor (rectangle with strike-through arrow) [1]

[Total: 10]

4 (b) x sensible value (20 ± 2) in cm [1]

h sensible value (>1.5 cm) in cm [1]

(c) y recorded and $x + y$ in range 75.0 cm to 85.0 cm [1]

(d) d and d^2 correct (penalise rounding errors for d^2) [1]

(e) f to 2 or 3 significant figures and correct unit [1]

f value 14 cm – 16 cm [1]

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(f) any two from:
- use of darkened room / brighter lamp / no other lights
- mark position of centre of lens on holder
- place metre rule on bench / clamp in position
- ensure object and (centre of) lens are same height (from the bench)
- repeat (and average)
- move the lens slowly / to and fro
- lens, object and screen all vertical / perpendicular to bench   [max 2]

(g) image drawn inverted   [1]

(h) distance between object and screen / *D* / change position of screen   [1]

[Total: 10]