Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

PHYSICS **0625/52**

Paper 5 Practical **October/November 2016**

MARK SCHEME

Maximum Mark: 40

Published

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Question	Answer	Marks
1(a)(i)	value 50.0 ± 0.5(cm)	**1**
1(a)(ii)	(a)(i) value − 20.0	**1**
1(a)(iii)	value between 10 and 20	**1**
1(a)(iv)	Correct *W* in the range 1.8 – 2.2 (N)	**1**
1(b)	new *x* at least 5 cm different from original and possible new *x*, *y* and *W* present *W* in the range 1.8 – 2.2 (N) unit N	**1** **1** **1**
1(c)	**two** from: difficult to judge the best position of 'almost balanced' is the centre of mass of the ruler exactly over the pivot / has the rule slipped on the pivot? the load(s) obscure the scale the position of the (centre of the) load(s) is difficult to judge	**2 × 1**
1(d)	correct value 2 or 3 significant figures	**1** **1**
		Total: 11

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Question	Answer	Marks
2(a)(i)	V_1 to at least 1dp and < 3 V and I_1 to at least 2dp and < 1 A	**1**
2(a)(ii)	R correctly calculated	**1**
2(b)(i)	new values present $I_2 < I_1$ and $V_2 < V_1$ units V and A at least once, not contradicted	**1** **1**
2(b)(ii)	correct R and unit Ω at least once, not contradicted	**1**
2(c)(i)	new values present and I_3 between I_4 and I_1	**1**
2(c)(ii)	R values same within 10%	**1**
2(d)(i)&(ii)	new values present and I_4 value largest, V_4 value largest	**1**
2(e)	statement to agree with results justification to include the idea of within (or beyond) the limits of experimental accuracy	**1** **1**
2(f)	**one** from: power supply runs down zero error on meter wavering reading	**1**
		Total: 11

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Question	Answer	Marks
3(a)	ray trace: normal correct AB = 8 cm and $i = 20° \pm 1°$	 **1** **1**
3(b)	initial P_1 P_2 distance at least 5.0 cm	**1**
3(c)	all lines neat and approximately correct table: x values measured correctly to $\pm$ 2 mm from trace x values 1.8, 2.9, 4.2, 6.0, 8.7 $\pm$ 0.5 cm	**1** **1** **1**
3(d)	Graph: axes correctly labelled suitable scales all plots correct to ½ small square good line judgement, thin and continuous line	 **1** **1** **1** **1**
3(e)	any **one** from: difficult to judge when pins exactly in line ensure that the pins are vertical thickness of lines thickness of pins Protractor only measures to $\pm$1°	 **1**
		Total: 11

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Question	Answer	Marks
4	clock / stopwatch and source of heat	1
	heat to boiling with and without lid	1
	measure time taken to reach **boiling point/boil**	1
	same volume / mass / amount of water	1
	same starting temperature	1
	suitable table with column headings and units (seconds or minutes)	1
	conclusion drawn	1
		Total: 7

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