Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

PHYSICS **0625/62**

Paper 6 Alternative to Practical **October/November 2016**

MARK SCHEME

Maximum Mark: 40

Published

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Question	Answer	Marks
1(a)(i)	x = 30.2(cm)	**1**
1(a)(ii)	Measure width w of load Place w / 2 either side of desired position OR draw centre line on load / find centre (of mass) of load and mark **side** of rule in desired position OR take readings on both sides of the load and find the mean	**1** **1**
1(b)	W = 3.95 (N)	**1**
1(c)	new x at least 5 cm different from original and in the range 10 cm–45 cm	**1**
1(d)	**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 ruler 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(e)	3.995 or 4 seen 2 or 3 significant figures (whatever the answer)	**1** **1**
	Total:	**9**

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Question	Answer	Marks
2(a)(i)	V_1 = 1.7 (V) I_1 = 0.32 (A)	**1** **1**
2(a)(ii)	R = 5.3125 Ω	**1**
2(b)	statement YES justification to include the idea of within the limits of experimental accuracy	**1** **1**
2(c)(i)	variable resistor / rheostat	**1**
2(c)(ii)	correct symbol for variable resistor circuit correct	**1** **1**
	Total:	**8**

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Question	Answer	Marks
3(a)	any two from: length of spring / number of coils diameter / thickness of spring material / type / stiffness / elasticity / spring constant of spring how far spring is displaced / amplitude (of oscillations)	**2**
3(b)(i)	increases has no effect on has no effect on	**1** **1** **1**
3(b)(ii)	one from: repeats large number of oscillations and divide timing sensor / light gate use a fiducial mark (however expressed) counting down to zero (before starting the timer)	**1**
	Total:	**6**

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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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Question	Answer	Marks
5(a)(i)	8.4 cm / 84 mm	**1**
5(a)(ii)	initial BP_2 distance at least 5.0 cm	**1**
5(b)	graph: axes correctly labelled suitable scales all plots correct to ½ small square good line judgement, thin, continuous line	 **1** **1** **1** **1**
5(c)	statement to match graph – expect NO justification to match statement with reference to graph line	**1** **1**
5(d)	any **two** from: difficult to judge when pins are exactly in line difficult to ensure that pins are vertical/straight thickness of lines thickness of pins protractor only measures to ±1°	**2 × 1**
	Total:	**10**

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