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

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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2016 series for most Cambridge IGCSE®, Cambridge International A and AS Level components and some Cambridge O Level components.

This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

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**

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**

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**

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**

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**