



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**PHYSICS**

**0625/62**

Paper 6 Alternative to Practical

**October/November 2016**

MARK SCHEME

Maximum Mark: 40

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**Published**

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This document consists of **6** printed pages.

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

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

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>
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)	<b>2</b>
3(b)(i)	increases has no effect on has no effect on	<b>1</b> <b>1</b> <b>1</b>
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)	<b>1</b>
	<b>Total:</b>	<b>6</b>

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

Page 6	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
5(a)(i)	8.4 cm / 84 mm	1
5(a)(ii)	initial BP <sub>2</sub> 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 <b>two</b> 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
	<b>Total:</b>	<b>10</b>