



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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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 w of load Place $w/2$ either side of desired position</p> <p>OR</p> <p>draw centre line on load / find centre (of mass) of load and mark side 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>two from:</p> <p>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
	Total:	9

Page 3	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
2(a)(i)	$V_1 = 1.7 \text{ (V)}$ $I_1 = 0.32 \text{ (A)}$	1 1
2(a)(ii)	$R = 5.3125 \Omega$	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

Page 4	Mark Scheme	Syllabus	Paper
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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

Page 5	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
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 boiling point/boil	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
	Total:	7

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 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 $\pm 1^\circ$	2 × 1
	Total:	10