



Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

PHYSICS**0625/61**

Paper 6 Alternative to Practical

October/November 2018

MARK SCHEME

Maximum Mark: 40

Published

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This document consists of **7** printed pages.

Question	Answer	Marks
1(a)	$l_0 = 22 \text{ (mm)}$	1
1(b)(i)	$e = 31 \text{ (mm)}$ ecf allowed	1
1(b)(ii)	$k = 0.0968 \text{ (N / mm)}$ ecf allowed	1
1(c)(i)	$t = 3.46 \text{ (s)}$	1
1(c)(ii)	$T = 0.346 \text{ (s)}$ $T^2 = 0.12 \text{ (0.1197)}$	1
	units s and s ²	1
1(c)(iii)	$k = 0.1$	1
1(d)	Statement matches results	1
	Idea of within (or beyond) limits of experimental accuracy <u>explained</u> , e.g. close (enough), very close, nearly the same; (too) far apart	1
1(e)	At least 3 additional values given	1
	Values between 50 g and 600 g	1

Question	Answer	Marks
2(a)	$I = 0.48$	1
2(b)	$V = 0.5$	1
2(c)	cm, V	1
2(d)	Graph:	1
	Axes correctly labelled and right way round	
	Suitable scale	1
	All plots correct to $\frac{1}{2}$ small square	1
	Good line judgement, single, thin, continuous line	1
2(e)(i)	Triangle method seen on graph	1
	At least half of candidate's line used	1
2(e)(ii)	R in range 0.040 to 0.055. No ecf allowed	1
	Unit Ω / cm OR Ω	1

Question	Answer	Marks
3(a)(i)	Normal through block and at centre of AB	1
3(a)(ii)	$i = 30^\circ$ on correct side of normal	1
3(a)(iii)	P_1 and P_2 at minimum distance apart of 5.0 cm	1
3(b)(i)	Line through P_3 and P_4 straight and continued to NL	1
3(b)(ii)	a in range 17 mm to 21 mm	1
3(b)(iii)	b in range 55 mm to 56 mm and both a and b with correct unit	1
3(b)(iv)	n in range 1.31–1.65, 2 or 3 significant figures	1
3(c)	$n = 1.5$ or 1.53 , both n with no unit	1
3(d)	Any two from: Getting pins vertical / pins are bent Lining up the pins exactly / seeing pins clearly Drawing accurate / thin lines Replacing block accurately on outline / outline larger than block / owtte	2
3(e)	3rd box (view bases of pins)	1

Question	Answer	Marks
4	MP1 Workable, correct circuit diagram with power source and correct symbols for ammeter and voltmeter.	1
	Method to include:	
	MP2 Measuring V and I	1
	MP3 Repeating with at least two other values of V or power, and / or I	1
	MP4 Measuring time to raise water temperature by a specific amount or to a specific value	1
	MP5 Any ONE from: Same starting temperature Same finishing temperature Same temperature difference Same room temperature Same volume / mass / amount of water	1
	MP6 Table with clear columns for time, V and I , with appropriate units and P (or VI)	1
	MP7 Conclusion: Plot a graph of power against time.	1