Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

PHYSICS **0625/61**

Paper 6 Alternative to Practical **October/November 2017**

MARK SCHEME

Maximum Mark: 40

Published

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Question	Answer	Marks
1(a)(i)	1.8 (V)	**1**
	0.38 (A)	**1**
1(a)(ii)	R_1 4.74 (4.737, 4.7)	**1**
1(b)	R_2 = 9.47 OR 9.5 (*2* or 3 significant figures required)	**1**
1(c)	Pointer at 0.13	**1**
1(d)	Statement YES or NO (owtte) Justification to include the idea of within (or beyond, ecf) the limits of experimental accuracy, matching the statement	**1**
1(e)	Determine each resistance in turn	**1**
1(f)	Three resistors in parallel, ONE voltmeter in parallel with resistors and correct symbols for voltmeter and resistors	**1**
	Variable resistor in series with the supply, correct symbol in a correct circuit	**1**
1(g)	Repeat with different currents OR to obtain a range of readings	**1**

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Question	Answer	Marks
2(a)(i),(ii)	v = 6.(0) AND d = 8.(0) or v = 60 AND d = 80	**1**
	correct matching unit	**1**
2(b)(i),(ii),(iii)	V = 60 cm (or 10 · candidate's v) and D = 80 cm (or 10 · candidate's d)	**1**
	UV 1200 (ecf)	**1**
2(c)	**One** from: Different size Different brightness Sharpness / clearness / coloured edges	**1**
2(d)(i),(ii),(iii)	f values 15(.0) and 14.9 (14.87)	**1**
	f_A correct method	**1**
	2 or 3 significant figures	**1**
2(e)	Any **two** from: Difficulty deciding exact position of sharpest image Difficulty measuring to centre of lens Product uv increases problem Image edges blurred / not clear Insufficient sets of results	**2**
2(f)(i)	5 – 10	**1**
2(f)(ii)	Difference of at least 40 cm with a range 15–100	**1**

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Question	Answer		Marks
3	**MP1**	Stopwatch (or equivalent) AND (metre) rule / ruler	**1**
	MP2	Measure time for 5 (+) oscillations	**1**
	MP3	Divide by number of oscillations to find period (*T*)	**1**
	MP4	Repeat for each bob	**1**
	MP5	Variable; one from: Initial amplitude / starting position Length of pendulum / thread Number of oscillations	**1**
	MP6	Table with column headings for *t*, or period (*T*), or both AND *d*, with correct units	**1**
	MP7	Conclusion: Plot graph(s) of *d* against period (*T*) or *t* (or vice versa) OR compare period (*T*) or *t* values for different diameters	**1**

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Question	Answer	Marks
4(a)	1 / *Q* values 1.(0), 0.5(0), 0.33(3), 0.25, 0.2(0)	**1**
4(b)	Graph:	
	Axes correctly labelled and right way round	**1**
	Suitable scales	**1**
	All 5 plots correct to ½ small square	**1**
	Good line judgement, thin, continuous line	**1**
4(c)(i),(ii)	At least half line used for triangle method	**1**
	Clearly shown on graph	**1**
	$P = 1.8 – 2.2$ (N)	**1**
4(d)	1.9	**1**
4(e)	Two from: Difficulty in obtaining balance Difficulty in judging centre of loads Loads may slip / slide Forcemeter not sensitive Forcemeter zero error	**2**

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