Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

PHYSICS **0625/51**

Paper 5 Practical **October/November 2017**

MARK SCHEME

Maximum Mark: 40

Published

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Question	Answer	Marks
1(a)	a = 19 – 21	**1**
1(b)(i)	Q values 1.(0), 2.(0), 3.(0), 4.(0), 5.(0)	**1**
1(b)(ii)	b values all less than 50 cm and decreasing	**1**
1(b)(iii)	Correct 1 / Q values 1.(0), 0.5(0), 0.33(3), 0.25, 0.2(0)	**1**
1(c)	Graph:	
	Axes correctly labelled	**1**
	Suitable scales	**1**
	All plots correct to ½ small square	**1**
	Good line judgement, thin, continuous line	**1**
1(d)	Triangle method clearly shown on graph	**1**
	At least half line used for triangle method and G recorded	**1**
1(e)	P correct calculation of G / a and in range 1.8 – 2.0	**1**

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Question	Answer	Marks
2(a)(i)	V to at least 1 dp and < 3 V	**1**
	I to at least 2dp and < 1 A	**1**
2(a)(ii)	R_1 correct	**1**
2(b)(i),(ii)	New values of V and I and R_2 correct AND $2 \times R_1 \pm 10\%$	**1**
2(c)(i)	New values of V and I with $I_3 < I_2$	**1**
2(c)(ii)	R_3 present and V, I, R units seen at least once and not contradicted	**1**
2(d)	Statement to match readings AND Justification to include the idea of within (or beyond, ecf) the limits of experimental accuracy	**1**
2(e)	Determine each resistance in turn	**1**
2(f)	Three resistors in parallel, voltmeter in parallel with resistors and correct symbols for voltmeter and resistors	**1**
	Variable resistor in series, correct symbol in a workable circuit	**1**
2(g)	Repeat with different currents	**1**

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Question	Answer	Marks
3(a)	Table:	
	v = in range 45 – 80	**1**
	uv correct	**1**
	$D = u + v \pm 1$ cm	**1**
3(b)	v = in range 25 – 35	**1**
	$D = u + v \pm 1$ cm	**1**
3(c)	One from: Different size / Different brightness Sharpness / clearness / coloured edges	**1**
3(d)(i),(ii)	f values both rounding to 14 – 16 (cm)	**1**
3(d)(iii)	f_A correct	**1**
	2 or 3 significant figures	**1**
3(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**

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Question	Answer		Marks
4	**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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