



PHYSICS

0625/61

Paper 6 Alternative to Practical

October/November 2017

MARK SCHEME

Maximum Mark: 40

Published

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This document consists of **5** printed pages.

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

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 $10 \times$ candidate's v) and $D = 80$ cm (or $10 \times$ 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

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

Question	Answer	Marks
4(a)	1 / Q values 1.(0), 0.5(0), 0.3 <u>3</u> (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