



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

PHYSICS

0625/51

Paper 5 Practical

October/November 2016

MARK SCHEME

Maximum Mark: 40

Published

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

Page 2	Mark Scheme	Syllabus	Paper
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Question	Answer	Mark
1(a)	Either suitable use of a horizontal straight edge Or holding rule close to pendulum Or line of sight perpendicular to rule	1
1(b)(i)	$t = 27.8 - 29.0$ (s)	1
1(b)(ii)	T correct Unit s	1 1
1(b)(iii)	More likely to miscount/pendulum may stop swinging	1
1(c)(i)	Correct calculation and unit s^2	1
1(c)(ii)	g between 9 and 11 from correct T and working 2 or 3 significant figures	1 1
1(d)(i)	Explanation of cause of inaccuracy in measurement of t or l . e.g. student did not react quickly enough when starting/stopping stopwatch OR difficulty in measuring accurately to centre of bob	1
1(d)(ii)	Any two from: Use different length(s) Repeat timing Use of a fiducial mark Increased number of oscillations Plot a graph using length and time or time ²	2
	Total:	11

Page 3	Mark Scheme	Syllabus	Paper
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Question	Answer	Mark
2(a)	θ_H 60 – 100 θ_C 10 – 40 and θ_{AV} correct Unit °C	1 1 1
2(b)	θ_M between θ_H and θ_C	1
2(c)	Perpendicular viewing of scale OR wait until temperature stops rising OR carry out without undue delay between parts	1
2(d)(i)	Correct diagram with lid Insulation placed round beaker	1 1
2(d)(ii)	Sensible series of values with θ_M between θ_H and θ_C	1
2(d)(iii)	Statement and justification to match results	1
2(d)(iv)	Two from: Room temperature (or other environmental condition) Temperature of cold water Temperature of hot water Volumes of water Size/shape/material/surface area of beaker	2
	Total	11

Page 4	Mark Scheme	Syllabus	Paper
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Question	Answer	Mark
3(a)	Ray trace: Correct normal and all lines in approximately the right places P at least 5 cm from AB Table: θ values within $\pm 2^\circ$ of ray trace values θ values within $\pm 1^\circ$ of 20, 30, 40, 50, 60	1 1 1 1
3(b)	Graph: Axes correctly labelled and right way round Suitable scales All plots correct to $\frac{1}{2}$ small square Good line judgement, thin, continuous line	1 1 1 1
3(c)	Triangle method shown on graph <u>and</u> triangle using at least half of candidate's line G 0.9 – 1.1	1 1
3(d)	Points close to/scattered from line (to match graph)/all on line.	1
	Total:	11

Page 5	Mark Scheme	Syllabus	Paper
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Question	Answer	Mark
4	MP1 On circuit diagram: one voltmeter in parallel with any component	1
	MP2 Circuit diagram correctly shows power supply, ammeter, unless in a branch, two or more resistors in parallel	1
	MP3 Circuit diagram: Correct symbols for ammeter, voltmeter and fixed resistor	1
	MP4 Repeat with a different number of resistors (in parallel)	1
	MP5 Table that includes columns for number of resistors, voltage/V and current/A	1
	MP6 & MP7 Then any two from: Resistance calculated (may be shown in table) Use low current (to stop resistors getting too hot)/switch off between readings Use at least 5 different combinations Repeat with different current or voltage or variable resistor setting Drawing a graph of number of resistors against combined resistance	2
	Total:	7