



Cambridge IGCSE™

PHYSICS

0625/61

Paper 6 Alternative to Practical

May/June 2021

MARK SCHEME

Maximum Mark: 40

Published

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This document consists of **8** printed pages.

Question	Answer	Marks
1(a)	$x = 50.0$ (cm)	1
1(b)(i)	$T = 1.67$	1
1(b)(ii)	$T^2 = 2.79$ (or 2.789 or 2.7889)	1
	T^2 given to 3 significant figures	1
1(b)(iii)	cm, s, s, s ²	1
1(c)	Graph: Axes correctly labelled with quantity and unit and right way round	1
	Suitable scales	1
	All the plots from their table correct to better than $\frac{1}{2}$ small square	1
	Good line judgement, thin, continuous line	1
1(d)	No. Not through origin	1
1(e)	(Timing) errors less significant / have a smaller <u>percentage uncertainty</u> / the error is spread over 10 periods / is divided by 10	1

Question	Answer	Marks
2(a)(i)	$V_1 = 2.4$	1
	$I_1 = 0.50$	1
	V, A	1
2(a)(ii)	$R_1 = (4.8)$ in Ω	1
2(b)	$R_S = 9.29$ or 9.3 stated to 2 / 3 sf	1
2(c)	$R_P = 2.42$	1
2(d)	Resistors in parallel	1
	Voltmeter and ammeter correctly placed, all symbols correct	1
2(e)	Use another resistor	1
	Add at least three more resistors (one at a time)	1
2(f)	Correct symbol for variable resistor	1

Question	Answer	Marks
3(a)	Normal at centre of AB	1
3(b)	EF and GH at 2.0 cm and 5.0 cm	1
3(c)(i)	$i = 30^\circ \pm 2^\circ$ to the left of normal and above the block	1
3(c)(ii)	P ₁ P ₂ distance at least 5.0 cm but not greater than 15 cm	1
3(d)(i)	a between 2.2 and 2.6 (cm) or 22 and 26 (mm)	1
3(d)(ii)	b between 5.2 and 5.6 cm or 52 and 56 mm, and correct unit seen in (i) or (ii) and not contradicted	1
3(d)(iii)	b / a value quoted with no unit	1
	b / a lies within range 2.00 to 2.50	1
3(e)	One from: View bases of pins Pins at least 5cm apart Ensure pins are vertical	1
3(f)	At least 4 additional values, all $< 90^\circ$	1
	Range at least 30°	1

Question	Answer	Marks
4	MP1 Apparatus: timer	1
	MP2 Remove block from water	1
	MP3 Record temperatures and times OR record temperatures over a fixed time OR record time for a fixed temperature drop	1
	MP4 Other block(s) used	1
	MP5 Key variable: One from: Starting temperature of block Room temperature Water temperature Size of block Mass of block	1
	MP6 Table with columns for metal / block / material (owtte), temperature OR time OR temperature and time as appropriate to the method. Correct quantity and units required	1
	MP7 Plot graph of temperature against time (for each material) OR Compare rates of cooling OR Compare temperature drops (if fixed time used) OR Compare times (if fixed temperature drop used) OR Equate large temp. drop / short time to a high rate of cooling (or the converse)	1