

Cambridge IGCSE™

PHYSICS**0625/63**

Paper 6 Alternative to Practical

May/June 2025

MARK SCHEME

Maximum Mark: 40

Published

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Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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Question	Answer	Marks
1(a)	suitable procedure e.g. measure distance / height to bench in 2 places AND make sure equal	1
1(b)(i)	$d = 35.8$	1
1(b)(ii)	$F_x = 1.55 \text{ (N)}$	1
1(c)	axes labelled with quantity and unit	1
	appropriate scales (plots occupying at least $\frac{1}{2}$ grid)	1
	plots all correct to $\pm \frac{1}{2}$ small square AND precise plots	1
	well-judged line AND thin line	1
1(d)	intercept read correctly from graph and recorded	1
	W_R in range 1.8 (N) to 2.4 (N)	1
1(e)	statement matching plots AND reference to pattern	1
1(f)	force meter F_x has not been set to zero at start of wtte	1

Question	Answer	Marks
2(a)	$\theta_R = 21 (^{\circ}\text{C})$	1
2(b)	read scale perpendicularly / or words to that effect (e.g. at eye level, at right angles)	1
2(c)	$81.0 > \theta_{300} \geq 80.5 (^{\circ}\text{C})$	1
2(d)(i)	$x_1 = 0.067$ AND $x_2 = 0.044$ AND $x_3 = 0.022$	1
2(d)(ii)	units $^{\circ}\text{C/s}$	1
2(d)(iii)	consistent 2 or consistent 3 significant figures	1
2(e)(i)	description matching results e.g. 'cooling rate falls steadily as time goes on' AND reference to cooling rate values to show this	1
2(e)(ii)	θ_F near or equal to θ_R	1
2(f)(i)	cooling rates likely to be lower (e.g.) x_2 lower than x_1 and second 90 s has lower starting temperature	1
2(f)(ii)	any one suitable control variable from: • volume of water • size / material of beaker • room temperature / other valid environmental factor	1

Question	Answer	Marks
3(a)	correct voltmeter symbol connected in parallel	1
3(b)(i)	$V = 0.8 \text{ (V)}$	1
	$I = 0.56 \text{ (A)}$	1
3(b)(ii)	correct calculations of R (1.43, 3.04, 6.21 (Ω))	1
3(c)(i)	$R_A = 2.86$, $R_B = 3.04$ and $R_C = 3.11(\Omega)$	1
	consistent 2 or consistent 3 significant figures	1
3(c)(ii)	statement matching results	1
	within limits of experimental accuracy / owtte AND supported by values from table	1
3(d)	limits current / current could exceed f.s.d. value of ammeter	1
3(e)(i)	resistor symbol with strike-through arrow on long sides	1
3(e)(ii)	can easily obtain a number of values	1

Question	Answer	Marks
4	MP1 apparatus: protractor ruler	1
	MP2 method: shine (incident) ray from ray-lamp into the block trace ray emerging from block measure angle of refracted ray	1
	MP3 repeat for new concentration	1
	MP4 control variable: angle of ray from ray lamp	1
	MP5 table: columns, with units, for concentration and dependent variable any variable mentioned must have correct units	1
	MP6 analysis: compare readings in the table to see if change in concentration produces change in dependent variable plot line graph (with axes specified)	1
	MP7 additional point: any one from: - at least 5 sets of data taken - repeat for each value of independent variable AND take average	1