

Cambridge IGCSE™

PHYSICS**0625/62**

Paper 6 Alternative to Practical

October/November 2025

MARK SCHEME

Maximum Mark: 40

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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)	normal correct (by eye), extended to cross PR <u>and</u> Q labelled	1
1(b)	$\theta = 10^\circ \pm 1^\circ$ <u>and</u> end of line labelled O MO = 14.0 ± 0.2 cm	2
1(c)(i)	line joining M to the crosses, continued to cross PR	1
1(c)(ii)	$a = 1.7 \pm 0.1$ cm $b = 10.3 \pm 0.1$ cm	1
1(d)	r correct answer to 2 significant figures	2
1(e)	statement to match results (expect YES) <u>values from table</u> used to justify statement	2
1(f)	extend the investigation for different values of θ	1
1(g)	reflecting surface of the mirror is at the back/thickness of mirror/small variations in protractor angle have a much larger effect on a and b / thickness of light ray/difficult to locate centre of light ray/experiment not done in a dark room	1

Question	Answer	Marks
2(a)	4.4(0) (V)	1
2(b)(i)	0.135 / 0.14 (A) 0.14 (A)	2
2(b)(ii)	3.0(1)	1
2(c)	scales labelled with quantity and unit, correct way around suitable scales (occupying at least $\frac{1}{2}$ the grid) plots correct to $\pm \frac{1}{2}$ small square <u>and</u> precise plots good best-fit line judgement, thin, continuous line	4

Question	Answer	Marks
2(d)	indication on the graph as to how gradient found <u>and</u> correct method of calculation of gradient i.e. $\Delta y / \Delta x$ at least $\frac{1}{2}$ the distance between the extreme plotted points used ($\Delta I \geq 0.045$)	2
2(e)	any integer from 19–25 inclusive	1

Question	Answer	Marks
3(a)(i)	87.0 (°C)	1
3(a)(ii)	min/minute(s) <u>and</u> 1, 2, 3, 4, 5	1
3(b)(i)	to get the highest temperature reached/to allow the liquid in the thermometer time to expand/to allow the beaker to warm up/to allow the thermometer to reach the temperature of the hot water/to allow the thermometer (time) to respond/to ensure that the temperature has stopped rising	1
3(b)(ii)	read thermometer perpendicular to the scale/at eye level / hold the stopwatch close to the thermometer/thermometer not touching the sides/base of the beaker/stir the water before taking a reading	1
3(c)(i)	11.5 °C	1
3(c)(ii)	$R_1 = 5.75$ / candidate's (c)(i) $\div 2$ °C / min	2
3(c)(iii)	$R_2 = 3.5$ (°C / min) or 0.0583 (°C / s)	1
3(d)	cooling rate decreases (with temperature/time)	1
3(e)(i)	45–55 (°C) inclusive	1
3(e)(ii)	room temperature/21.5 °C	1

Question	Answer	Marks
4	variable MP1 valid variable which may affect h <u>stated</u>	1
	apparatus MP2 ruler/measuring tape <u>and</u> additional apparatus to measure the independent variable (if not height of release or diameter of ball)	1
	method MP3 <u>measure</u> the independent variable <u>and</u> release the ball MP4 <u>measure</u> h <u>and</u> repeat for a new value of independent variable	2
	control variable MP5 any significant variable appropriate to the independent variable	1
	table MP6 columns <u>with</u> <u>units</u> , for independent variable and dependent variable	1
	conclusion MP7 compare readings in the table to see <u>if/how/whether</u> a change in the variable produces a change in h OR plot a (line) graph <u>with</u> <u>axes specified</u>	1