



Cambridge IGCSE™

PHYSICS

0625/61

Paper 6 Alternative to Practical

October/November 2023

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

Question	Answer	Marks
1(a)	$a = 15(.0)$	1
1(b)	Graph:	
	Axes correctly labelled and right way round	1
	Suitable scales	1
	All plots correct to $\frac{1}{2}$ small square	1
1(c)	Good line judgement, thin, continuous line	1
	Method shown clearly on graph	1
	Triangle using at least $\frac{1}{2}$ of candidate's line between extreme plots.	1
1(d)	$W = 2G$ with unit N	1
	W in range 1.0–1.4	1
1(e)	Difficult to obtain exact balance OR difficult to judge position of (centre of) load OR load / ruler may slide	1
1(f)	Balance rule on pivot, balance point is at centre of mass / Find where the rule balances.	1

Question	Answer	Marks
2(a)(i)	$I = 0.76(A)$	1
2(a)(ii)	$V = 0.5$	1
2(a)(iii)	$R = 0.7, 0.66 \text{ or } 0.658$	1
2(a)(iv)	$R / l = 0.035 \text{ or } 0.033$	1
2(a)(v)	cm, V, Ω	1
	Ω / cm	1
2(b)(i)	Conclusion to match results. Expect R increases as / increases / (directly) proportional / R / l constant	1
2(b)(ii)	Justification matching conclusion with clear reference to the results.	1
2(c)	Correct method (e.g. doubling the 100 cm value, or taking average R / L or 0.033 then multiply by length)	1
	Correct answer	1
	Answer quoted to one or two significant figures	1

Question	Answer	Marks
3(a)	$h_o = 1.5$ or 15	1
	unit to match result, cm or mm	
3(b)(i)	2.0 cm	1
3(b)(ii)	$V = 80(.0)$ cm	1
	Working from candidate's v value shown	
3(b)(iii)	m correct calculation	1
3(b)(iv)	h_i / h_o correct and to 2 significant figures	1
3(c)(i)	Statement matches results (expect YES)	1
	Justification matches statement and includes idea of within (or beyond) the limits of experimental accuracy	
3(c)(ii)	Change value of u / distance from object to lens	1
	Take at least 5 sets of readings in total (or take at least 3 additional sets of readings)	

Question	Answer	Marks
4	MP1 (stop)watch / clock / timer / chronometer	1
	MP2 Measure / record time for evaporation / for water to disappear / for dish to become dry.	1
	MP3 Repeat with a different volume / depth of water OR different distance of heater from water / different height of heater	1
	MP4 One from: Volume / depth of water (if not chosen variable) OR Height / distance of heater from water (if not chosen variable)	1
	MP5 One from: Room temperature / (initial) water temperature Reference to avoiding draughts Surface area of water Second variable from MP4 if wrong investigation	1
	MP6 Table with clear columns for time and chosen variable with appropriate units. These must be headed with both a quantity (or a recognised symbol for it) and unit.	1
	MP7 Plot graph of chosen variable against time OR an answer which suggests comparing values of chosen variable and time in table	1

Additional graph notes:

- NOTE:** – The principle to apply here is ‘could I draw a significantly better line, using these points, under examination conditions?’ If the answer is definitely ‘yes’, do not award the mark.
- NOTE:** – If candidate’s scale consists of actual readings at equal intervals this will produce a perfect straight line! The only marks available in this case are the first (axes right way round and labelled) So maximum 1.
If axes are wrong way round, the other 3 marks are still available.