



Cambridge IGCSE™

PHYSICS**0625/61**

Paper 6 Alternative to Practical

October/November 2021

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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This document consists of **11** printed pages.

Question	Answer	Marks
1(a)(i)	439 / 43.9	1
	454 / 45.4 and both answers with correct unit	1
1(a)(ii)	I_0 = top - bottom	1
1(b)(i)	439 / 43.9	1
1(b)(ii)	454 / 45.4 and both answers with correct unit	1
1(c)	Graph: Axes correctly labelled with quantity and unit and right way round	1
	Suitable scales	1
	All <u>SIX</u> plots (including 0, 0) correct to $\frac{1}{2}$ small square	1
	Good line judgement, thin, continuous line	1
1(d)	I and I_0 clear and correct	1
	e clear and correct	1

Question	Answer	Marks
2(a)(i)	$V_X = 1.2$	1
	$I_X = 0.26$	1
2(a)(ii)	$R_X = 4.62$	1
	units A, V and Ω seen correctly	1
2(b)	(No) – <u>too</u> different (owtte)	1
2(c)(i)	Resistors Z and X in parallel and named	1
	Voltmeter correctly placed	1
	Ammeter correctly placed, correct circuit and all symbols correct.	1
2(d)	2.2 (given to 2 significant figures)	1
2(e)	At least 4 additional values suggested	1
	All values within $1(\Omega)$ to $20(\Omega)$	1

Question	Answer	Marks
3(a)	Normal at 90°	1
	Correctly placed lines at $40^\circ \pm 2^\circ$ and $70^\circ \pm 2^\circ$	
	Both 7.0 ± 0.2 cm	
3(b)	P ₁ P ₂ distance at least 50 mm on AB	1
3(c)	α $70 \pm 2^\circ$	1
3(d)	Correct unit	1
3(e)	At least 3 extra angles suggested	1
	Range of at least 30°	1
3(f)	One of: Difficulty in lining up pins Thickness of mirror Thickness of pins / size of pin holes	1
3(g)	Any two from: Box 2 ticked Box 3 ticked Box 5 ticked	2

Question	Answer	Marks
4	MP1 Apparatus: (stop)watch / clock / timer	1
	MP2 Method: Heat water in a container to a specified temperature or to boiling point	1
	MP3 Method: Repeat for at least two additional containers	1
	MP4 Constant Variable: Volume of water	1
	MP5 Constant Variable: Starting temperature (of water) OR room temperature OR power of heater	1
	MP6 Table with columns to match their method. If MP2 correct, this needs type of container and time with unit (s)	1
	MP7 Compare times / durations (for the various containers) OR see which takes longer.	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 mark available in this case is the first (axes right way round and labelled) So maximum 1.
If axes are wrong way round, the other 3 marks are still available.