Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

PHYSICS **0625/61**

Paper 6 Alternative to Practical **May/June 2019**

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.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the May/June 2019 series for most Cambridge IGCSE™, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

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GENERIC MARKING PRINCIPLE 5: Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).
GENERIC MARKING PRINCIPLE 6: Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

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Question	Answer	Marks
1(a)	Graph:	
	Axes correctly labelled with quantity and unit and right way round	**1**
	Suitable scales	**1**
	All plots correct to ½ small square	**1**
	Good line judgement, thin, continuous line	**1**
1(b)	triangle method indicated on graph	**1**
	triangle at least half of candidate's line	**1**
1(c)	Correct calculation	**1**
	2 or 3 significant figures and unit N	**1**
1(d)	Difficulty in achieving exact balance OR difficulty in judging centre of P OR load easily slips OR top of pivot not a sharp edge	**1**
1(e)	113	**1**
1(f)(i)	1.13	**1**
1(f)(ii)	Statement and explanation to match results. Expect Yes, because values are close, owtte	**1**

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Question	Answer	Marks
2(a)(i)	I = 0.47(A)	**1**
2(b)(i)	V/l 0.025 0.023 0.027 0.026 0.024	**1**
2(b)(ii)	V/l consistent 2 significant figures or consistent 3 significant figures	**1**
	V/cm	**1**
2(c)	Box 1 ticked	**1**
	Values are close OR values are within the limits of experimental accuracy	**1**
2(d)	5.1(1)	**1**
	2 or 3 significant figures	**1**
	Unit Ω	**1**
2(e)	Keep current low OR switch off between readings	**1**
2(f)	Correct symbol	**1**

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Question	Answer	Marks
3(a)	24 (°C)	**1**
3(b)(i)	s, °C seen and not contradicted	**1**
3(b)(ii)	Third box ticked to match readings	**1**
	Pairs of readings 94(°C), 89(°C) and 93 (°C), 87 (°C) quoted. OR differences 5(°C) and 6(°C) quoted	**1**
	Difference is only 1(°C) OR difference is small. owtte	**1**
3(c)(i)	Use a black painted beaker (and black painted can)	**1**
	Use a shiny can (and unpainted beaker)	**1**
3(c)(ii)	Any two from: Room temperature Volume of water Same starting temperature (of water)	**2**
3(d)	Perpendicular viewing of the thermometer OR stirring OR thermometer not touching beaker.	**1**

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Question	Answer		Marks
4	**MP1**	Apparatus: Forcemeter/Newtonmeter or pulley and weights arrangement	**1**
	MP2	Method: Pull box up slope, measure force and measure distance moved	**1**
	MP3	Method: Repeat with different masses	**1**
	MP4	Variable: Angle of slope or height of blocks	**1**
	MP5	Variable: Distance moved	**1**
	MP6	Table to include columns for mass and force, both with unit (g or kg for mass and N for force)	**1**
	MP7	Calculate work done and compare with mass. OR Compare work done with mass (if there is a work done column in the table). OR Plot graph of work done against mass	**1**

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