Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

PHYSICS **0625/62**

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)	centre of mass/gravity not in centre (however expressed)	**1**
1(b)	graph:	
	axes correctly labelled and right way round	**1**
	suitable scales starting from (0,0)	**1**
	all plots correct to less than ½ small square	**1**
	good line judgement, thin, continuous line	**1**
1(c)	triangle method used and <u>seen on graph</u>	**1**
	triangle at least half of distance between extreme plotted points i.e. $\Delta a \geqslant 10$	**1**
1(d)	intercept correct to ½ small square – if graph not extrapolated, use the ruler tool	**1**
1(e)	width 2.5(0) cm / 25 mm with correct unit	**1**
1(f)	statement to match results	**1**
	justification to match statement and include idea of within (or beyond) limits of experimental accuracy	**1**
1(g)	difficulty in achieving exact balance/keeping the pivot in the same position/locating the centre of load (Q)/load(s) slipping/load obscuring readings on rule	**1**

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Question	Answer	Marks
2(a)	22(.0) (ºC)	**1**
2(b)(i)	s, ºC seen in both tables	**1**
2(b)(ii)	third box ticked to match readings	**1**
2(b)(iii)	quoting temperatures from the table in the same time	**1**
2(c)	any one from: higher room temperature lower starting/initial temperature insulation	**1**
2(d)	perpendicular viewing of thermometer/view (reading) at eye level/stir the water/thermometer not touching the sides of the beaker/wait for the temperature to stop rising (initially)	**1**
2(e)	any two from: room temperature/stated environmental condition starting/initial temperature of the (hot) water volume/mass/amount of water same beaker total time for experiment	**2**
2(f)	third box ticked	**1**

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Question	Answer	Marks
3(a)	3.6(0) (V) 0.3(0) (A)	**1** **1**
3(b)	12 (Ω)	**1**
3(c)	8 and unit Ω	**1**
3(d)(i)	11/11.3/11.29 (Ω)	**1**
3(d)(ii)	statement to match results justification to match results (with idea of within or beyond limits of experimental accuracy explained)	**1** **1**
3(e)	brightness/intensity of lamp changes	**1**
3(f)	correct symbols with resistors and lamp in parallel one voltmeter correctly positioned – accept across power supply	**1** **1**
3(g)	variable resistor	**1**

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Question	Answer	Marks
4	**Apparatus** **MP1** diagram showing object, lens, screen/image in correct order	**1**
	MP2 *u* and *v* correctly labelled on diagram	**1**
	Method **MP3** measure/record/calculate *u* and *v* and lens thickness *t*	**1**
	MP4 repeat with a different lens	**1**
	MP5 method of obtaining a sharp image by moving object, lens or screen….	**1**
	Measuring lens thickness **MP6** use of blocks either side of lens (and measure distance)	**1**
	Table **MP7** table with columns for *u*, *v* and *t* with correct units	**1**

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