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CAMBRIDGE
International Education

Cambridge IGCSE™

PHYSICS **0625/51**

Paper 5 Practical Test **May/June 2026**

MARK SCHEME

Maximum Mark: 40

Published

This mark scheme contains the instructions and marking guidance that our examiners used to mark candidate responses for this component.

Before they start marking, examiners complete a standardisation process. They review a range of candidate responses and discuss the mark scheme in detail to agree which answers can and cannot be accepted. Examiners award marks where it is clear that candidate responses have met the requirements of the mark scheme. These requirements may vary between different components or different versions of the same component, depending on the exact requirements of the question and the candidate responses seen during the standardisation process.

Sometimes, our mark schemes may allow marks to be awarded to responses which contain elements that are factually incorrect or for content not covered by the syllabus. We do this in response to the demands of a specific question to support candidates and make sure that our assessments are fair. However, these allowances should not be used as a guide for teaching and learning.

We cannot discuss the mark scheme with schools, and we recommend that schools read the mark scheme together with the assessment material and the Principal Examiner Report for Teachers.

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General marking principles

All examiners must apply these marking principles when marking candidate responses.

1	Examiners must award marks for each response in line with: • the specific **content** defined in the mark scheme • the specific **skills** defined in the mark scheme or in the level descriptions • the **standard of response** required as exemplified by the standardisation scripts.
2	Examiners must award **whole marks** (not half marks, or other fractions).
3	Examiners must award marks **positively**. This means that: • marks are not deducted for errors or omissions • marks are awarded for correct/valid answers as defined in the mark scheme and also for **other valid answers** which go beyond the scope of the syllabus and mark scheme referring to your team leader as appropriate • the quality of spelling, punctuation and grammar are judged **only** when the mark scheme indicates that these features are **specifically assessed** in the question. However, the meaning of all responses must be unambiguous.
4	Examiners must **consistently** apply the requirements of the mark scheme and any rules for what to do when candidates have not followed instructions correctly.
5	Examiners must use the **full range of marks** defined in the mark scheme, unless limited by the quality of the candidate responses seen.
6	Examiners must award marks according to the mark scheme and **must not** award marks with grade thresholds or grade descriptions in mind.

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Science-Specific Marking Principles

1	Examiners should consider the context and scientific use of any keywords when awarding marks. Although keywords may be present, marks should not be awarded if the keywords are used incorrectly.
2	The examiner should not choose between contradictory statements given in the same question part, and credit should not be awarded for any correct statement that is contradicted within the same question part. Wrong science that is irrelevant to the question should be ignored.
3	Although spellings do not have to be correct, spellings of syllabus terms must allow for clear and unambiguous separation from other syllabus terms with which they may be confused (e.g. ethane / ethene, glucagon / glycogen, refraction / reflection).
4	The error carried forward (ecf) principle should be applied, where appropriate. If an incorrect answer is subsequently used in a scientifically correct way, the candidate should be awarded these subsequent marking points. Further guidance will be included in the mark scheme where necessary and any exceptions to this general principle will be noted.
5	<u>'List rule' guidance</u> For questions that require ***n*** responses (e.g. State **two** reasons …): • The response should be read as continuous prose, even when numbered answer spaces are provided. • Any response marked *ignore* in the mark scheme should not count towards ***n***. • Incorrect responses should not be awarded credit but will still count towards ***n***. • Read the entire response to check for any responses that contradict those that would otherwise be credited. Credit should **not** be awarded for any responses that are contradicted within the rest of the response. Where two responses contradict one another, this should be treated as a single incorrect response. • Non-contradictory responses after the first ***n*** responses may be ignored even if they include incorrect science.

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6 Calculation specific guidance

Correct answers to calculations should be given full credit even if there is no working or incorrect working, **unless** the question states 'show your working'.

For questions in which the number of significant figures required is not stated, credit should be awarded for correct answers when rounded by the examiner to the number of significant figures given in the mark scheme. This may not apply to measured values.

For answers given in standard form (e.g. $a \times 10^n$) in which the convention of restricting the value of the coefficient (a) to a value between 1 and 10 is not followed, credit may still be awarded if the answer can be converted to the answer given in the mark scheme.

Unless a separate mark is given for a unit, a missing or incorrect unit will normally mean that the final calculation mark is not awarded. Exceptions to this general principle will be noted in the mark scheme.

7 Guidance for chemical equations

Multiples / fractions of coefficients used in chemical equations are acceptable unless stated otherwise in the mark scheme.

State symbols given in an equation should be ignored unless asked for in the question or stated otherwise in the mark scheme.

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Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning
	correct point or mark awarded
	incorrect point or mark not awarded
^	information missing or insufficient for credit
A	allow or accept
AE	arithmetic error
I	incorrect or insufficient point ignored while marking the rest of the response
CON	contradiction in response, mark not awarded
BOD	benefit of the doubt given
ECF	error carried forward applied
NAQ	response has not answered question

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Annotation	Meaning
RE	rounding error
SEEN or 	point has been noted, but no credit has been given or blank page seen
SF	error in number of significant figures
TE	transcription error
TV	response is too vague or there is insufficient detail in response
T	answer outside the tolerance of the mark scheme
	used to highlight parts of an extended response
	used to highlight parts of an extended response
MO	mandatory mark not awarded
SC	special case
	unclear response
PD	poor diagram
POT	power of ten error
XP	incorrect physics
U	incorrect unit

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Acronym / shorthand	**Explanation**
Brackets ( )	Words not explicitly needed in an answer, however if a contradictory word/phrase/unit to that in the brackets is seen the mark is not awarded.
Underlining	The underlined word (or a synonym) must be present for the mark to be scored. If the word is a technical scientific term, the word must be there.
/ or **OR**	Alternative answers any one of which gains the credit for that mark.
ORA	Or reverse argument
owtte	Or words to that effect.
ignore	Indicates either an incorrect or irrelevant point which may be disregarded, not treated as contradictory.
cao	correct answer only

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Question	Answer	Marks	Guidance
1(a)(i)	Initial *y* value < 40 cm	**1**	
1(a)(ii)	Correct *x* values	**1**	
	y values decreasing	**1**	
	All values of *x* and *y* given to nearest mm	**1**	
1(b)	Graph:		**Please annotate the graph with a tick or a cross for each marking point.** **Position these down the side of the graph, in mark scheme order.**
	Axes correctly labelled with quantity and unit the right way round	**1**	If wrong graph is plotted (e.g. *x* against *y*), this mark is not gained but other 3 are available ECF.
	Suitable scales	**1**	Do not award if origin present / reverse scales / awkward scales e.g. 3's, 7's etc. **ignore** (0, 0) if numbers on axes suggest a false origin required to score MP2 plots to occupy more than ½ the grid in both directions
	All plots correct to ½ small square	**1**	Indicate incorrectly plotted point e.g. highlight tool Do not allow large 'blobs' bigger than half a square
	Good line judgement, thin, continuous line	**1**	based on all the plots; not dot-to-dot;
1(c)	Triangle method clearly shown on graph	**1**	**allow** two points indicated on line of best-fit
	Using at least half of distance between extreme plots	**1**	This point dependent on MP1 being given
	G in range 0.60 to < 0.75, seen as a decimal	**1**	**allow** G to any number of significant figures **ignore** candidate's calculation **ignore** fractions and units No ECF for G for *x* plotted against *y* **ignore** negative sign if G is negative

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Question	Answer	Marks	Guidance
2(a)(i)	I_1 to at least 2 decimal places and < 1 A	**1**	
2(a)(ii)	V_1 to at least 1 decimal place and < 3 V	**1**	
2(a)(iii)	R_1 present and units A and V	**1**	Accept in words
2(a)(iv)	*r* correct	**1**	2 or more significant figures (accept 1 significant figure if exact answer)
2(b)(i)	N = 5 – 25 and d = 0.7 – 1.7 cm	**1**	Or, for d, Supervisor's value $\pm$ 0.2 cm
2(b)(ii)	Correct calculation of l_1	**1**	Candidate's value same as examiner's value when rounded to 2 significant figures. Do not allow answer in terms of π
2(c)(i)	I_2 *and* V_2 *present*	**1**	
2(c)(ii)	R_2 correct	**1**	Any number of significant figures.
2(d)	l_2 in range 40 to 60 cm and to nearest mm	**1**	

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Question	Answer	Marks	Guidance
2(e)	Suitable reason (that matches suggestion)	1	no mark just for the suggestion (which could be l_1 or l_2) Example 1: l_2 (more accurate) because whole number of turns underestimates / gives inaccurate length owtte (MP1). Electrical measurements are more precise / accurate / reliable **OR** electrical method uses whole length of the wire (MP2) Example 2: l_2 (more accurate) because using a ruler to measure the (rod) diameter is inaccurate owtte (MP1) Electrical measurements are more precise / accurate / reliable (MP2) Example 3: l_1 (more accurate) because fewer readings required owtte (MP1) electrical method involves more measurements (MP2) **OR** other valid reasons **ignore** poor experimental practice e.g. parallax / human error
	Sensible comparison with other method	1	

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Question	Answer	Marks	Guidance
3(a)	1.4(0)–1.6(0)	**1**	
	cm	**1**	Accept mm if h_O in mm
3(b)(i)	v in range 50–70 cm	**1**	Or ± 5 cm from Supervisor's Value
3(b)(ii)	$h_1 > h_O$	**1**	
3(c)	Correct calculation of m_1	**1**	accept any number of significant figures ignore multiplication sign x ignore units
3(d)	y = 17–23 cm	**1**	
3(e)	$m_1 = 1 / m_2$ to within 10%	**1**	$m_1 \times m_2$ between 0.9 and 1.1
3(f)	Statement matches results	**1**	Expect yes OR $m_1.m_2$ should be 1.00 Check that m_1 and m_2 match statement
	Justification matches correct statement	**1**	Value is (very) close to 1.00 / within 10% of 1.00 / within the limits of experimental accuracy Check justification if m_1m_2 not seen Statement NO if difference > 10% Value is **much** bigger / smaller than 1.00 / beyond 10% of 1.00 / beyond the limits of experimental accuracy ECF allowed Ignore 'rounds to 1.00' Award BOD to correct justification if no statement
3(g)	Darkened room / bright object	**1**	
	Move **screen** slowly **OR** move **screen** back and forth **OR** approach clearest position of **screen** from both directions (and average)	**1**	Do not allow moving lens or object Accept 'it' for screen

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Question	Answer	Marks	Guidance
4	**MP1** **ADDITIONAL APPARATUS:** timer / stop-watch / clock	1	may be seen in a diagram, check page 10
	MP2 **METHOD MARK 1**: Heat water in one container (on the hotplate). Measure **OR** see **OR** record time taken for water to reach boiling point.	1	accept reference to (start) bubbling for boiling accept start AND stop timer for measuring time not calculate or 'investigate time taken to boil water' Ignore timing intermediate temperatures
	MP3 **METHOD MARK 2:** Repeat with a different container	1	Stated; not just from table.
	MP4 and MP5 **TWO VARIABLES TO KEEP CONSTANT:** Any two from: Volume of water Starting temperature of water / container Setting of hotplate	2	allow amount / quantity / mass of water
	MP6 **TABLE** with clear columns for container / metal (A, B, C, D, and E) with no unit and time with unit.	1	Allow h, min, s; not sec or secs Allow headed rows instead of columns Ignore any additional columns
	MP7 **CONCLUSION:** Draw / construct / plot a graph / chart with container / metal on one axis and time on the other axis. **OR** Compare times or rates for each container to see if/how/whether the container affects the time (to reach boiling point) **OR** see if the differences in times taken are significant/large/beyond experimental accuracy owtte	1	**Accept** a sketch with labelled axes **Ignore** the container which reaches boiling point in shortest time is the best owtte **Ignore** any reference to colour of containers **Ignore** a prediction

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