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CAMBRIDGE
International Education

Cambridge IGCSE™

PHYSICS **0625 / 62**

Paper 6 Alternative to Practical **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.

This document consists of **13** printed pages.

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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 or **I**	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
PUT 'SEEN' ON THE TWO PAGES ABOVE 1(a)(i) AND LINK TO RELEVANT QUESTIONS, IF APPROPRIATE			
1(a)(i)	all dimensions present	**1**	any three numbers correct answer only, **not** 5.20 etc.
	5.2, 2.5, 2.4 (cm)	**1**	
1(a)(ii)	V_B = 31.2 (cm^3)	**1**	any significant figures >1 ignore rounding error carried forward **1(a)(i)**
1(b)(i)	16 (g)	**1**	correct answer only, not 16.0
1(b)(ii)	ρ_1 = 0.52 (g / cm^3)	**1**	any significant figures >1, ignore rounding **accept** answers rounding to 0.51 (g / cm^3) or 0.52 (g / cm^3) or 0.53 (g / cm^3) error carried forward **1(a)(ii)** and / or **1(b)(i)**
1(c)	V_1 = 72(.0) (cm^3)	**1**	correct answer only
1(d)	57(.0) (cm^3) and V = 15(.0) (cm^3)	**1**	error carried forward **1(c)** and / or **1(d)**
1(e)	ρ_2 = 0.48 (g / cm^3)	**1**	error carried forward **1(a)(ii)** and **1(d)** any significant figures, ignore rounding
1(f)	statement matches results	**1**	expect YES
	correct calculation to support the statement using both values of ρ	**1**	i.e., values used to show that the difference between the values is $\leqslant$ 10% of either, or the ratio of the values is $\geqslant$ 0.9 (90%) a correct calculation, but an incorrect statement can get the second mark if both values are identical then the statement 'the values are the same' scores both marks, without the need for a calculation

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Question	Answer	Marks	Guidance
1(g)	(lowers head and) observes both surfaces at eye level / perpendicularly owtte	1	**accept** lowers head and looks at (both) surfaces (there must be an indication of both surfaces being observed) **accept** pours water (into beaker) slowly **accept** uses a pipette to add a small volume of water (at a time) **accept** uses a ruler and set square **accept** uses a ruler to measure height of water in both beakers **accept** uses a fiducial aid if explained **ignore** puts beakers close together **ignore** references to meniscus / scale

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Question	Answer	Marks	Guidance
2(a)(i)	d_2 = 2.0 (cm)	**1**	correct answer only
2(a)(ii)	θ_W = 27.5 (°C)	**1**	correct answers only
	θ_B = 34(.0) (°C)	**1**	
2(b)(i)	$\Delta\theta_W$ = 7.5 (°C) and $\Delta\theta_B$ = 13.5 (°C)	**1**	error carried forward from **2(a)(ii)** **allow** 7.50 and 13.50
2(b)(ii)	1.875 **and** 3.375	**1**	error carried forward from **2(b)(i)** any significant figures, correctly rounded **accept** 0.03125 **and** 0.05625 (°C / s)
	both rates to 2 significant figures	**1**	**accept** any numbers to 2 significant figures
	°C / min	**1**	**accept** °C / s **not** C° / min or C° / s **accept** minute **not** m or mins or sec or secs
2(c)	temperature of black card increases more (quickly) / black (card) is a better absorber (than white card)	**1**	comment must match candidate's values from **2(b)(ii)** accept black card has larger temperature change **ignore** reference to emission
	values from table or rates quoted in the comparison	**1**	
2(d)(i)	the distance of each card from the lamp is not the same	**1**	**ignore** starting temperatures are different
2(d)(ii)	the black card was further away, but the temperature increase / rate of absorption was still greater / or reverse argument	**1**	

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Question	Answer	Marks	Guidance
3(a)(i)	voltmeter connected in parallel with X	**1**	standard symbol only, no line through the meter **accept** small gaps **ignore** symbol for junction of conductors
3(a)(ii)	1.9 (V)	**1**	correct answer only, **not** 1.90
3(b)	0.53, 0.63, 0.67, 0.77, 1.0	**1**	error carried forward **3(a)(ii)** **accept** any significant figures, correctly rounded
	all values to 2 significant figures	**1**	
3(c)	axes labelled, quantity and unit	**1**	reversed axes lose this mark only
	suitable linear scales (occupying at least ½ the grid)	**1**	no awkward scales e.g. ×3, ×7, ×9 etc. **accept** a scale of 2 cm represents 0.25
	plots correct to ± ½ small square and precise plots	**1**	**reject** large 'blobs' bigger than half a square based on all the plots
	good best-fit line judgement, thin, continuous line	**1**	**accept** a line through 4 points and just one point below the line if incorrect quantities are plotted, only the best-fit line can be awarded
3(d)	some indication on the graph as to how gradient found **and** correct method of calculation of gradient i.e. $\Delta y / \Delta x$	**1**	no need to check actual value **ignore** negative sign
3(e)	*c* correct to ± ½ small square	**1**	**accept** 1 significant figure **ignore** any unit given
3(f)	R_X = 14 – 18 (Ω) inclusive, given to the nearest Ω	**1**	accuracy mark

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Question	Answer	Marks	Guidance
4	**MP1 variable chosen** valid variable which may affect *t*	1	**PUT 'SEEN' ON PAGE 14, BECAUSE CANDIDATES MAY WRITE PART OF THEIR ANSWER HERE** variable must be stated here or later (and not just implied in the method, table or analysis) **accept:** • mass / diameter / size / weight / volume / material / metal / density of the ball • height of release • temperature of the oil **ignore** type of ball or type / density / volume of oil
	MP2 additional apparatus stop-watch / timer **and** additional apparatus (if needed) to measure the independent variable	1	variable must be stated here or later (and not just implied in the method, table or analysis) **accept:** • mass / diameter / size / weight / volume / material / metal / density of the ball • height of release • temperature of the oil **ignore** type of ball or type / density / volume of oil
	MP3 method (hold ball and release and) measure time between the (two) marks / lines **or** measure *t* **and** repeat for new value of independent variable	1	both points needed for this mark **ignore** anything written in the table
	MP4 control variables any significant variable appropriate to the independent variable	1	must be stated explicitly and not just mentioned in the method e.g. height of release if mass is the independent variable e.g. mass of ball / same ball if height is the independent variable **accept** any variable listed in MP1 which is not being used as the independent variable **ignore** volume / type / density of oil **ignore** distance between the lines

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Question	Answer	Marks	Guidance
4	**MP5 results table** columns, quantities with correct units, for independent variable and dependent variable	1	 e.g. height / mass / diameter **and** time **accept** plausible symbols instead of words e.g. *h* and *t* **ignore** units given in the body of the table **ignore** any extra columns in the table if weight is the chosen variable, then *W* / N must be seen and **not** *m* / kg
	MP6 conclusion compare readings in the table to see if / how / whether a change in the variable produces a change in *t* **OR** plot a (line) graph with axes specified	1	**ignore** a conclusion or a prediction from theory compare readings in the table, and nothing else added, is insufficient **accept** a set of labelled axes drawn – no units needed **ignore** a bar chart unless the material of the ball is the selected variable, when it must be a bar chart
	MP7 additional point (one from): second valid control variable stated at least 5 sets of data taken repeat each measurement (of time) **and** take an average	1	 can be seen in the table **ignore** repeat the experiment (and take an average)

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