CAMBRIDGE
International Education

Cambridge IGCSE™

CO-ORDINATED SCIENCES (DOUBLE AWARD) **0654/52**

Paper 5 Practical Test **February/March 2026**

MARK SCHEME

Maximum Mark: 60

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 February/March 2026 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

This document consists of **12** printed pages.

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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 descriptions 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.

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.

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	‘List rule’ guidance 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.

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.

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
BOD	benefit of the doubt given
TV	response is too vague or there is insufficient detail in response
ECF	error carried forward applied
^	information missing or insufficient for credit
	unclear response
I	incorrect or insufficient point ignored while marking the rest of the response
R	incorrect point or mark not awarded
CON	contradiction in response, mark not awarded

Annotation	Meaning
SEEN	point has been noted, but no credit has been given or blank page seen
	key point attempted / working towards marking point / incomplete answer / response seen but not credited / blank page seen
sup	refers to the supervisors' responses

Question	Answer	Marks
1(a)	quality – clear and continuous lines ; size – pentagon and at least half the box used and all must fit inside the box ; detail – 5 holes and a central part ;	**3**
1(b)(i)	measurement in mm ;	**1**
1(b)(ii)	correct measurement ± 1 mm **and** line drawn ;	**1**
1(b)(iii)	correct calculation ; 2 significant figures ;	**2**

Question	Answer	Marks
1(c)	**max 2 differences:** central part **seeds:** central part of star fruit has seeds / central part okra has no seeds / seeds in okra are round the sides / seeds in star fruit are in centre / star fruit has fewer seeds / okra has more seeds / star fruit has smaller seeds / okra has larger seeds / seeds in okra round or circular / seeds in star fruit are oval ; **shape** star fruit is a star **and** okra is a pentagon / star fruit has lobes / sides of star fish are bent / sides of okra are straight ; **size** star fruit is larger / star fruit has more **flesh** okra has **spaces** / star fruit has no **spaces**/is solid **max 1 similarity** number of **points** / both have 5 sides/points ; both have **seeds** ; **seeds** are in the centre ;	**3**

Question	Answer	Marks
2(a)(i)	column/row headings for Benedict's and biuret ; final colour/colour **and** separate from reagents ;	**2**
2(a)(ii)	(Benedict's) yellow / green / orange / red ; (biuret) purple ;	**2**

Question	Answer	Marks
2(a)(iii)	contains reducing sugar ; contains protein ;	2
2(b)(i)	even distribution of Benedict's / biuret / reagent ;	1
2(b)(ii)	prevent contamination with Benedict's solution ;	1
2(c)	ethanol / alcohol and water ; white emulsion ;	2

Question	Answer	Marks
3(a)(i)	volume for 30 s ; full set of volumes ; volumes increasing ; all volumes to nearest 0.5 cm^3 ;	4
3(a)(ii)	axes correct orientation and labelled ; suitable linear scales and plotted points would cover ⩾ ½ grid and all points can be plotted ; points plotted correctly ± ½ small square ;	3
3(a)(iii)	best-fit curve ;	1
3(a)(iv)	fastest at the start/rate slows down **AND** then stops ; gradient is steepest at the start / gradient becomes less steep (**and** plateaus) ;	2
3(a)(v)	volume from graph drawn ± ½ small square ;	1

Question	Answer	Marks
3(b)	correct calculation ;	1
3(c)(i)	reduces the volume collected by the same / similar amount each time ;	1
3(c)(ii)	divided flask / tube on a piece of string and lowered in ;	1
3(d)	read scale perpendicular to the reading ;	1
3(e)(i)	tangent drawn ;	1
3(e)(ii)	accuracy mark – gradient calculated as 0.012 – 0.017 inclusive ;	1

Question	Answer	Marks
4(a)	(with UI) red : (with $AgNO_3$) white ppt **and** (with $BaCl_2$) colourless solution / no reaction ;	2
4(b)	hydrochloric acid ;	1

Question	Answer	Marks
5(a)(i)	Mass recorded for water ; Mass in range 47–53 g for water ; 2 temperatures recorded for water ; Full set of results for oil ;	4
5(a)(ii)	2 temperature differences calculated ;	1

Question	Answer	Marks
5(a)(iii)	P for water calculated ; P for oil calculated ;	**2**
5(a)(iv)	10% calculation ; use of 10% and explanation consistent with calculation ; e.g. 10% of 14.2 – 1.42 13.1 + 1.42 = 14.52 (which is > 14.2) so yes e.g. 10% of 13.1 = 1.31 14.2 – 1.31 = 12.89 (which is smaller than 1.31) so yes e.g. [(14.2 – 13.1)] / 14.2 ; x 100 = 7.7 % yes ; e.g. 90% of 14.2 = 12.7 which is smaller than 13.1 so yes e.g.110% of 13.1 = 14.41 which is greater than 14.2 so yes e.g. finding range of 10% of 14.2 = 12.78 to 15.62 13.1 is within this range so yes e.g. finding 10% range of 13.1 = 11.79 to 14.41 14.2 is within range so yes	**2**
5(a)(v)	to ensure all water is at the same temperature ;	**1**
5(b)(i)	anomaly for trial 1 of wax / 22.2 is an anomaly ; do not include in average / repeat trial 1 / average should be 14.2/14.3 ;	**2**

Question	Answer	Marks
5(b)(ii)	P would decrease as more heat/thermal energy escapes into surroundings / P would decrease and less heat/thermal energy reaches the beaker ;	1

Question	Answer	Marks
6	**one** mark from each section and any **two** others : **apparatus** ammeter and its use in the method ; power supply / battery and its use in the method ; **method** connect lamps (in series) and measure current / I and repeat for minimum of 2 numbers of lamps ; **table** headings: number of lamps, current ; A/amp/amps for current ; **control variables and ensuring valid results** voltage of power supply / battery ; temperature of lamps / switch off between readings / allow lamps to warm up before taking readings ; at least 5 different numbers of lamps ; repeat each measurement to identify / exclude / remove anomalies ; **conclusion** plot graph of current against number of lamps ; describe shape of graph e.g. positive gradient – if current increases as number of bulbs increases then positive relationship AND if current decreases as number of bulbs increases then negative relationship ; (look and see) if number of lamps increases, does the current increase, decrease (or stay the same) ;	7