

Cambridge Lower Secondary Checkpoint

SCIENCE**0893/02**

Paper 2

May 2026

FINAL MARK SCHEME

Maximum Mark: 50

Published

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 curriculum. 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 End of Series Report for Teachers.

This document has **16** pages. Any blank pages are indicated.

General guidelines on marking

Many descriptive answers can be expressed in a variety of ways. Professional judgement can be used in these cases, providing it matches the marking points and further information in the mark scheme.

Answers may have words spelt incorrectly. Credit is normally given for phonetically correct answers, unless the word has a scientifically different meaning. For example, where the answer should be antennae, credit will be given for antenna but not for anthen (too close to anther).

Only the science is being assessed so answers do not need to be grammatically correct. Significant figures will be indicated in the question or in the mark scheme.
Unless specified all marking points are independent.

Annotations and abbreviations

/ or	alternate responses for the same marking point
() brackets	the words or units in brackets do not need to be stated, for example, (recycles or releases or provides) minerals = minerals scores the mark
<u>Underline</u>	exact word is required
Accept	an acceptable response
Do not accept	indicates an incorrect response that would contradict another otherwise correct alternative
Ignore	indicates an irrelevant answer that is not creditworthy. Full marks can still be achieved even with answers that are ignored.
Note	provides extra information when necessary
ecf	error carried forward; marks are awarded if an incorrect response has been carried forward from earlier working, provided the subsequent working is correct
ora	or reverse argument; for example, as mass increases, volume increases could be written as mass decreases, volume decreases

Question	Answer	Marks	Further Information								
1(a)	any one from large quantities of data can be collected or lots of data can be analysed (idea of) ethical reason for not experimenting on babies, e.g. smoking is harmful to babies or babies cannot give consent easy to repeat the investigation automated or more efficient	1	Ignore it is safer unqualified Accept makes fewer mistakes than humans Ignore it is faster Ignore accuracy and reliability								
1(b)	<table><tr><th>average number of cigarettes smoked per day before pregnancy</th><th>number of women who stopped smoking during pregnancy</th></tr><tr><td>0-10</td><td>28</td></tr><tr><td>11-20</td><td>16</td></tr><tr><td>21-30</td><td>1</td></tr></table>	average number of cigarettes smoked per day before pregnancy	number of women who stopped smoking during pregnancy	0-10	28	11-20	16	21-30	1	1	all three correct = 1 mark
average number of cigarettes smoked per day before pregnancy	number of women who stopped smoking during pregnancy										
0-10	28										
11-20	16										
21-30	1										

Question	Answer	Marks	Further Information
1(c)	any two from M1 low birth mass or low birth weight M2 premature birth M3 miscarriage M4 still birth M5 (idea that) reduces brain development	2	each correct answer = 1 mark Note does not grow well is not sufficient Accept (idea of) poor lung development or increased risk of asthma or poor organ development Accept infant addiction or infant withdrawal from substance Accept birth defects or birth abnormalities or disabilities or (idea of) damaged DNA Accept (idea that) lower oxygen levels in fetus

Question	Answer	Marks	Further Information
2(a)(i)	Ω or ohm(s)	1	Note if symbol and name given both must be correct Ignore omega
2(a)(ii)	$(R =) V \div I$ or $(R =) 240 \div 12$ 20	2	Ignore unit 20 with or without working = 2 marks correct formula or substitution = 1 mark
2(b)	any two from convection (current) in the water conduction through the kettle (idea that) thermal energy transfers from hot(ter) regions to cold(er) regions or (heat) dissipation or movement of thermal energy away from the source	2	each correct answer = 1 mark Accept description of convection current e.g. hot water rises and cold water sinks Accept particle description of conduction in kettle. e.g. vibrations passed from one particle to another Accept thermal energy is conducted from the water to the kettle Accept movement of energy from a region of high energy to one of low energy Ignore references to radiation

Question	Answer	Marks	Further Information
2(c)	(electric shock) (how risk is controlled) do not touch the plug with wet hands or do not touch socket with wet hands (risk) boiling water or hot water or burn or scald (how risk is controlled) (linked to) keep hands away from the steam or wear heatproof gloves or do not touch the outside of the kettle or pick up by the handle	3	each correct answer = 1 mark Accept wear rubber gloves or (electrical) insulating gloves or plastic gloves or dry the plug or socket if it is wet or dry wet hands Note gloves must be qualified Accept touching the hot kettle Note gloves must be qualified e.g. (thermal) insulating gloves Accept oven mitts or oven gloves or kitchen gloves or heat-proof gloves or rubber gloves Note thick gloves or safety gloves is not sufficient Note lab-coat must be qualified e.g. lab-coat to stop hot water falling onto legs etc. Accept wear goggles or eye protection Ignore protective clothing or equipment unqualified

Question	Answer	Marks	Further Information
3(a)	two or more atoms joined by covalent bonding or joined by shared pair of electrons	2	each correct answer = 1 mark Do not accept ions Ignore reference to elements joined together Do not accept presence of intermolecular forces Accept atoms joined by covalent bonds = 2 mark Accept atoms joined by shared pair of electrons = 2 marks
3(b)	sodium atom loses an electron	1	Accept sodium atom loses electrons or sodium donates an electron (to another atom) Accept reference to it loses electrons etc. Ignore number of electrons lost

Question	Answer	Marks	Further Information
4	Nebulae are clouds of dust (and) gas . These areas are called stellar nurseries .	2	each correct sentence = 1 mark Accept either order

Question	Answer	Marks	Further Information
5	Chloroplasts contain a green pigment called chlorophyll. During photosynthesis, this green pigment traps energy from the Sun. The two products of photosynthesis are oxygen and glucose.	3	each correct sentence = 1 mark Accept sunlight or light Accept either order Accept O₂ for oxygen and C₆H₁₂O₆ for glucose but words take precedence Ignore references to food or carbohydrate or starch

Question	Answer	Marks	Further Information
6(a)	3 (cm)	1	
6(b)	2 (seconds)	1	
6(c)	wave of same frequency and same amplitude wave with peaks and troughs in opposite directions to original waveform	2	each correct answer = 1 mark Accept waveform drawn on graph with same frequency and same amplitude Accept waveform drawn on graph that has peaks and troughs in opposite directions to original waveform Note it is a reflection of original wave is not sufficient but accept reflection in x-axis = 2 marks Note diagram takes precedence

Question	Answer	Marks	Further Information
7(a)	(density =) mass ÷ volume or m/v (density of zinc =) 7.14 (unit) g/cm ³	3	correct equation = 1 mark 7.14 or 7.1 = 1 mark correct unit = 1 mark
7(b)	(density of oxygen is) lower than density of zinc	1	Accept density of gas is lower than of a solid Accept ora

Question	Answer	Marks	Further Information
8(a)	fusion or fertilisation	1	Ignore sexual reproduction
8(b)	1:1	1	Accept 2:2 or 50:50 or 50%
8(c)	genetic (differences) or genes	1	Accept chromosomes or DNA or genotype or alleles Do not accept environmental factors or named environmental factors

Question	Answer	Marks	Further Information
9(a)	any two from speed or velocity or (kinetic) energy mass or weight volume or size or diameter	2	each correct answer = 1 mark Note if mass, volume, area or size not mentioned accept density Accept (surface) area Accept material (of asteroid) as an additional marking point Accept hardness as an additional marking point Ignore height or angle of impact or shape
9(b)	any one from climate change mass extinction or species loss	1	Accept (global) change in (average) temperature (increase or decrease) e.g. global warming or global cooling or impact Winter or Ice age etc. Accept killing of species or killing humans Accept sea level change or flooding or drought or habitat destruction or deforestation or extreme weather events Accept (giant) dust clouds in atmosphere or debris blocks sunlight Accept tsunami Ignore natural disasters Ignore earthquakes but accept shockwaves

Question	Answer	Marks	Further Information
10	Liquid water is more dense than ice.	1	more than one answer ticked = 0 marks Accept any indication of the correct answer, e.g. circling or underlining, but ticking takes precedence

Question	Answer	Marks	Further Information
11(a)	displacement (reaction)	1	Ignore substitution
11(b)	copper nitrate silver	2	each substance = 1 mark Accept either order Accept Cu(NO ₃) ₂ and Ag, but names take precedence
11(c)	silver is less reactive than zinc or silver is lower in the reactivity series than zinc	1	Accept ora Accept zinc is higher in the reactivity series Accept silver is lower in the reactivity series Note silver is less reactive is not sufficient Note zinc is more reactive is not sufficient Do not accept silver is less reactive than zinc sulfate

Question	Answer	Marks	Further Information
12(a)	(idea that) oil moves convection currents	2	each correct answer = 1 mark Accept answers that refer to water rather than oil Accept oil is warmer in the middle or top or oil is cooler near the sides of the container Note this mark must refer to the oil moving and not to particles moving Accept convection current drags wood pieces apart = 2 marks Accept convection current pulls the wood pieces apart = 2 marks
12(b)	(idea that) time decreases	1	Accept (idea that) the separation is faster or the wood moves faster Do not accept the time is faster or quicker
12(c)	(improvement) use new sample of (the same) oil or wait between experiments (linked explanation) (idea that) the oil is getting warmer for each experiment so this is not a fair test or the oil is getting warmer for each experiment so a variable is changing (that should be controlled) or use oil that starts at the same temperature or wait for the oil to cool down	2	each correct answer = 1 mark Note use a different oil is not sufficient Accept (improvement) use a more viscous or dense liquid e.g. honey (linked explanation) honey will be more like the magma or the wood would take a longer time to reach the end

Question	Answer	Marks	Further Information
13(a)	point circled at (1.5, 4)	1	Accept other unambiguous ways of indicating the point but circle takes precedence
13(b)	as concentration increases, the time taken before the reaction stops decreases	1	Accept ora Accept as concentration increases time decreases Accept as concentration increases the time gets shorter Ignore the time gets faster or the time gets slower or the time gets quicker Ignore references to the rate of reaction being faster
13(c)	yes (no mark) (idea that) as concentration increases as the time taken for the reaction to stop decreases so the reaction gets faster	1	Note if no ticked = 0 marks for the question Accept data quoted from the graph e.g. two concentrations with times decreasing and a comment that shorter time means a faster reaction Ignore answers that refer to collision theory

Question	Answer	Marks	Further Information
14(a)	(Jan to Mar) decreases (Apr to Oct) (idea of) decreases, increases then decreases or goes down then up then down	2	each correct answer = 1 mark Note quoting numbers is not sufficient Accept fluctuates
14(b)	any one from (idea of) not all rats were captured rats introduced from other places rats reproduce	1	

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