Cambridge Assessment International Education

Cambridge Primary Checkpoint

SCIENCE **0097/02**

Paper 2

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 Markers were instructed to award marks. It does not indicate the details of the discussions that took place at a Markers' 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 End of Series Report. Cambridge will not enter into discussions about these mark schemes.

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 antena but not for anthen (too close to anther).

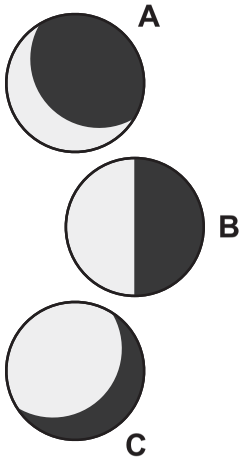
Only the science is being assessed so answers do not need to be grammatically correct. Significant figures will be indicated in the question or in the mark scheme.
Unless specified all marking points are independent.

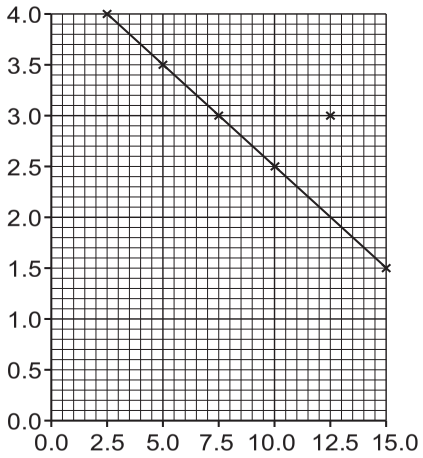
Annotations and abbreviations

/ **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
Underline	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)	heart	**1**	**Accept** any indication of the correct answer on the diagram, but answer line takes precedence
1(b)	pumps blood (around the body) **or** circulates blood (around the body)	**1**	
1(c)	artery **or** arteries vein(s)	**2**	each correct answer in any order = 1 mark **Accept** named artery, e.g. aorta **Accept** named vein, e.g. vena cava **Accept** capillary
1(d)	**A** contains the **highest** percentage/oxygen	**2**	each correct answer = 1 mark **Note** answer must be comparative

Question	Answer	Marks	Further Information
2(a)	temperature at which **solid** becomes a **liquid**	**2**	each correct answer = 1 mark **Ignore** °C **Ignore** ice turns to (liquid) water
2(b)	ethanol	**1**	**Accept** any indication of the correct answer in the table, but answer line takes precedence
2(c)	(boiling point) increases	**1**	**Accept** higher (boiling point) **Ignore** just 'boiling point changes'

Question	Answer	Marks	Further Information
3(a)	(idea) there are clouds	**1**	
3(b)		**2**	**all three** correct = 2 marks **one** or **two** correct = 1 mark **Ignore** answers with no shading
3(c)	one month	**1**	more than **one** answer circled = 0 marks **Accept** any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence

Question	Answer	Marks	Further Information
4(a)	12.5 (g) 3.0 (cm)	**1**	**both** answers correct for the mark **Accept** any indication of the correct answer in the table, but answer line takes precedence
4(b)		**2**	**all three** correct plots = 1 mark appropriate straight line of best fit using the points (plotted) = 1 mark
4(c)	(As the mass of sand in the containers increases) the distance (above the water) decreases.	**1**	**Accept** the container sinks more **or** the container floats less

Question	Answer	Marks	Further Information
4(d)	(I think Mia must use a container with) 22.5 (g of sand). (This will sink because) the mass is higher than the mass of water (displaced) **or** weight/force is greater than upthrust	**2**	each idea = 1 mark **Accept** any number above 15 (g) **Ignore** just 'more (g of sand)' **Note** answer must be comparative **Note** answer must be comparative **Accept** gravity for force **Accept** (idea of) more weight/force downwards than (force) upwards **or** weight/force more than weight/force of water **Accept** higher level answers, e.g. the container is denser than water

Question	Answer	Marks	Further Information
5(a)	(the type of) exercise	**1**	
5(b)	(idea to) allow breathing (rate to return) to be normal/resting	**1**	**Accept** so his breathing is the same each time (he starts a different exercise) **or** if he doesn't rest his breathing rate is already high for the next exercise **or** to see/compare the change in breathing (before and after each exercise) **Ignore** just 'so his breathing rate can decrease' **or** 'to control his breathing rate' **Ignore** references to heart rate
5(c)	oxygen	**1**	**Accept** O_2 **Ignore** air **or** energy **Do not accept** food **or** blood

Question	Answer	Marks	Further Information
6(a)	**A**, **C**, **D** and **F**	**1**	**all four** correct in any order for the mark **Accept** any indication of the correct answer in the table, but answer line takes precedence
6(b)	(Group **1**) have low(er) melting points (Group **2**) have high(er) melting points	**1**	**both answers** correct for the mark **Accept** any suitable temperature limit that will sort the substances in the required way, e.g. (Group1) have a melting point less than 100 (^{o}C) (Group 2) have melting point higher than 100 (^{o}C) **Ignore** just by their melting point

Question	Answer	Marks	Further Information
7(a)	direction refraction	**2**	each correct answer = 1 mark **Accept** higher level answers, e.g. speed **Ignore** medium **or** appearance **Ignore** bends
7(b)	direction reflection	**2**	each correct answer = 1 mark **Ignore** medium **or** appearance **Ignore** bounces
7(c)	(idea that) the light ray will remain **straight**	**1**	**Accept** the light ray will **not** bend **or** the light will **not** refract **Accept** higher level answers about **speed**, e.g. faster than the speed it was in water **or** travels at same speed it travelled in air **Accept** higher level answers about refraction as it passes through the **glass**, e.g. refracts when it goes into the **glass** **Ignore** nothing **or** stays the same

Question	Answer	Marks	Further Information
8(a)	erosion	**1**	more than **one** answer circled = 0 marks **Accept** any indication of the correct answer, e.g. underlining or ticking, but circling takes precedence
8(b)	melting	**1**	more than **one** answer circled = 0 marks **Accept** any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence
8(c)	(sedimentation) (small pieces of) rock settle **or** (small pieces of) rock are deposited (metamorphism) process where rocks are changed because of pressure/heat	**2**	each correct answer = 1 mark **Accept** sediment for small pieces of rock **Accept** named sediments, e.g. sand **Accept** sediments form layers **or** sediments build up **Ignore** sediments form sedimentary rock **Ignore** references to erosion **or** weathering **or** type of rock, e.g. it turns into an igneous rock **Do not accept** references to erosion **or** weathering

Question	Answer	Marks	Further Information
9(a)	bacteria **or** parasite	**1**	**Accept** viruses **or** Plasmodium **or** protozoa **Accept** a named example of a bacterium **or** virus **or** parasite, e.g. (parasitic) worms **or** COVID-19 **Ignore** insects **or** named insects **or** animals **or** named animals **Ignore** named diseases, e.g. measles **or** ringworm **Ignore** fungi **or** named fungi, e.g. mould **or** yeast
9(b)	respiratory (system)	**1**	**Accept** reproductive (system) **or** digestive (system)

Question	Answer	Marks	Further Information
10(a)	condensation	**1**	**Accept** condenses
10(b)	involves changing liquid to gas	**1**	**Accept** a named liquid changing to a gas, e.g. water changes to a gas **or** water changes to water vapour **Accept** require energy
10(c)	**any two from** boiling takes place at a certain/one temperature **or** evaporation takes place at all/different/any temperatures evaporation (only) happens at the surface (of a liquid) **or** boiling happens everywhere (in a liquid) boiling produces bubbles **or** evaporation does **not** produce bubbles boiling is a fast process **or** evaporation is a slow process	**2**	each correct answer any order = 1 mark **Accept** boiling takes place at boiling point **or** evaporation takes place at temperatures below boiling (point) **Ignore** boiling takes place at high temperatures **or** evaporation takes place at low temperatures **Accept** boiling takes place under the surface **or** in evaporation only the top layer gains energy

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