Cambridge Assessment International Education

Cambridge Lower Secondary Checkpoint

SCIENCE **1113/01**

Paper 1 **October 2022**

MARK SCHEME

Maximum Mark: 50

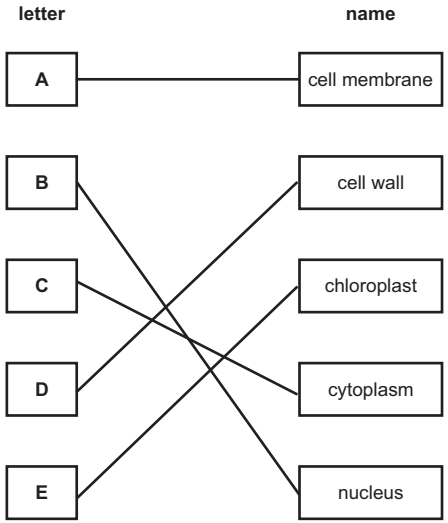
Published

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.

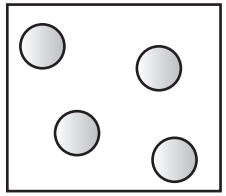
Mark schemes should be read in conjunction with the question paper and the End of Series Report. Cambridge will not enter into discussions about these mark schemes.

This document has **16** pages. Blank pages are indicated.

IB22 10_1113_01/6RP

Question	Answer	Marks	Further Information
1		**4**	**all five** correct = 4 marks **three** or **four** correct = 3 marks **two** correct = 2 marks **one** correct = 1 mark **two** or more lines from a letter = 0 marks for that letter

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Further Information</th></tr>
<tr><td>2(a)</td><td><table><tr><th>description</th><th>letter</th></tr><tr><td>gas</td><td>(F)</td></tr><tr><td>solid</td><td>K</td></tr><tr><td>condensing</td><td>G</td></tr><tr><td>freezing</td><td>J</td></tr><tr><td>liquid</td><td>H</td></tr></table></td><td>2</td><td>all four correct = 2 marks

two or three correct = 1 mark</td></tr>
<tr><td>2(b)</td><td>  </td><td>1</td><td>Note need between 2 and 12 particles inclusive and particles should not be in a pattern or touching each other

Ignore different sizes of particle

Ignore arrows showing movement

Note if molecules drawn accept between 2 and 6 molecules inclusive</td></tr>
</table>

Question	Answer	Marks	Further Information
3(a)	We can see the Sun because the Sun **emits** **or** **gives out** light. We can see the Moon because light from the **Sun** is **reflected** to the Earth.	**2**	**Accept** 'is a source of' **or** radiates **Ignore** shines **or** luminates **Both** answers correct for the mark
3(b)	Earth revolves on its axis day – part of Earth faces the Sun **and** night – part of the Earth does **not** face the Sun	**2**	each correct answer = 1 mark **Accept** rotates (every 24 hours) **or** spins **Note** answers need to link day and night with the explanation **Note** part not facing Sun is dark is **not** sufficient

Question	Answer	Marks	Further Information
4(a)	<table><tr><td>**pollen formation**</td><td>**pollination**</td><td>(fertilisation)</td><td>**seed formation**</td><td>**dispersal**</td></tr></table>	**2**	pollen formation **and** pollination in correct position= 1 mark formation of seeds **and** dispersal in correct position = 1 mark
4(b)	**any three from** (suggestion) (orange or fruit) falls from tree (reason) rolls away from tree rots **or** decays **or** (suggestion) **eaten** by animals (reason) animals find (and eat) fruit fallen from trees (animals attracted by) sweet taste (animals attracted by) brightly coloured fruit animals discard uneaten seeds seeds pass through the gut of animals seeds are deposited in animal faeces	**3**	**Note** award marking points wherever they appear in the answer **Ignore** seed attracted or stuck on animal **Note** by animals is **not** sufficient **Accept** attracted by smell **Accept** animals drop seed (at a distance from parent plant) **Ignore** seeds are digested **Accept** (idea of) deposited in animal waste **Ignore** reference to excretion

Question	Answer	Marks	Further Information
5(a)	S	**1**	
5(b)(i)	chlorine	**1**	
5(b)(ii)	sodium hydrogen oxygen	**2**	**all three** correct any order = 2 marks **two** correct any order = 1 mark **one** correct = 0 marks **Accept** natrium **Do not accept** oxide

Question	Answer	Marks	Further Information
6(a)	same amplitude	**1**	**Accept** same height **Do not accept** (same) frequency **or** (same) wavelength
6(b)	**any two from** different frequency **or** different pitch **or** wave from hammer has a higher pitch tuning fork wave is a smooth wave **or** hammer wave is a jagged wave tuning fork wave is one wave **or** hammer wave is a mixture of waves	**2**	each correct answer = 1 mark **Accept** wavelengths are different **Accept** waves are closer together with the hammer **Do not accept** hammer has lower pitch **or** hammer has longer wavelength **Accept ora** if tuning fork specified. **Ignore** reference to stability of waves **or** waves are consistent or inconsistent

Question	Answer	Marks	Further Information
7	**any two from** particles move particles spread out **or** particles of dye separate **or** particles disperse particles are random water particles and dye particles mix diffusion occurs (coloured dye) goes from a region of high concentration to one of a low concentration	**2**	each correct answer = 1 mark **Accept** particles move further apart = 2 marks **Accept** particles have random motion **or** particles move in all directions = 2 marks **Accept** particles move from a region of high concentration to one of a low concentration = 2 marks

Question	Answer	Marks	Further Information
8(a)	to make food **or** make glucose **or** make sugar **or** make carbohydrate **or** for photosynthesis **or** to make oxygen	**1**	**Do not accept** for respiration
8(b)	(description) (carbon dioxide concentration) decreases (explanation) more photosynthesis uses up carbon dioxide	**2**	each correct answer = 1 mark **Accept** high CO_2 to low CO_2 **Accept** more carbon dioxide is used up
8(c)(i)	(same amount of algae) is a control variable	**1**	**Accept** to make it a fair test **Do not accept** to be more accurate **or** more reliable

Question	Answer	Marks	Further Information
8(c)(ii)	**any two from** species of algae amount of algae **or** number of algae temperature time (before observations were made) volume of indicator concentration of indicator colour of light	**2**	each correct answer = 1 mark **Accept** type of algae **or** type or species of plant **Note** algae alone is **not** sufficient **Accept** mass of algae **Accept** duration (of experiment**)**
8(d)	respiration **or** algae are producing carbon dioxide	**1**	**Accept** carbon dioxide (concentration) increas**es** **or** there is more carbon dioxide

Question	Answer	Marks	Further Information
9(a)	1.5 (cm^3)	**1**	
9(b)(i)	change in temperature in ^oC **(+)11** (−7) **−4** **(+)16**	**1**	**all three** correct = 1 mark **Note** the negative sign must be included but positive signs can be missing
9(b)(ii)	(liquid) (dilute) sulfuric acid (solid) magnesium (ribbon)	**1**	**both** needed for mark
9(b)(iii)	is the reaction exothermic or endothermic? **exo(thermic)** **endo(thermic)** **endo(thermic)** **exo(thermic)**	**1**	**all four** correct = 1 mark **Note no ecf** from (b)(ii)
9(c)	repeat his investigation	**1**	**Accept** check the results

Question	Answer	Marks	Further Information
10(a)(i)	parallel	**1**	
10(a)(ii)	current splits evidence from diagram, e.g. 6 = 2 + 2 + 2	**2**	**Accept** electron flow splits **Ignore** electricity splits **Do not accept** voltage splits **Accept** 2A + 2A + 2A = 6A **or** 6A gets evenly split into 3 (the 2 is implied in this answer) **or** 6A shared equally between the three lamps
10(b)	voltmeter	**1**	**Accept** voltemeter **Do not accept** voltameter

Question	Answer	Marks	Further Information
11(a)	**deficiency disease** developmental disease genetic disease infectious disease	**1**	more than **one** answer circled = 0 marks
11(b)	haemoglobin transports oxygen in blood (cells need oxygen) for respiration **or** to react with glucose	**2**	each correct answer = 1 mark **Accept** haemoglobin carries oxygen **Accept** lack of oxygen **Ignore** haemoglobin contains oxygen
11(c)	calcium **iron** potassium sodium	**1**	more than **one** answer circled = 0 marks

Question	Answer	Marks	Further Information
12(a)	4 500 (million years)	**1**	
12(b)	4 050 (million years)	**1**	

Question	Answer	Marks	Further Information
13(a)	(density =) mass / volume	**1**	**Accept** (density =) m / v
13(b)(i)	60(.0) (g)	**1**	
13(b)(ii)	1.2 (g / cm^3)	**1**	**Accept ecf** from part **(b)(i)** only