Cambridge Secondary 1 Checkpoint

Cambridge International Examinations
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SCIENCE **1113/02**

Paper 2 **October 2018**

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 an 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 consists of **11** printed pages.

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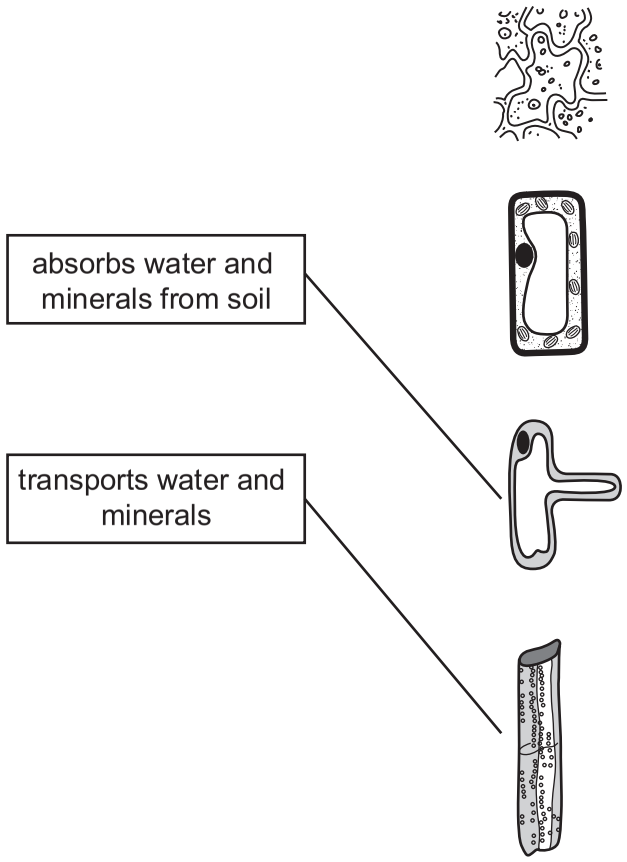
Question	Answer	Marks	Further Information
1	**function** **plant cell**  	**2**	each correct line = 1 mark two lines from a function = 0 marks

Question	Answer	Marks	Further Information
2(a)	<table><tr><th>non-metal</th><th>type of compound</th></tr><tr><td>chlorine</td><td>chloride</td></tr><tr><td>oxygen</td><td>oxide</td></tr><tr><td>sulfur</td><td>sulfide</td></tr></table>	**2**	
2(b)	water	**1**	

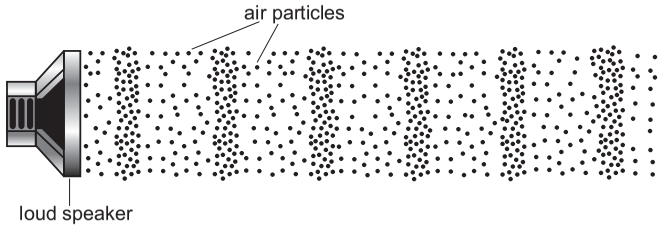
Question	Answer	Marks	Further Information
3	A_2 is **0.4** A. A_3 is **0.4** A. A_4 is **0.8** A.	**2**	**three** correct = 2 marks **two** correct = 1 mark **one** correct = 0 marks

Question	Answer	Marks	Further Information
4	frog = amphibia(n) valid reason e.g. larval stage / smooth skin / moist skin	**2**	**Note** second marking point is dependent on correct identification of amphibian(n) **Accept** reference to young being tadpoles sufficient for larval stage **Accept** permeable skin / idea of absorbing oxygen through the skin / lays eggs in water / **lays** unshelled eggs

Question	Answer	Marks	Further Information
5(a)	**any one from** different size stars different brightness of stars stars not in the same position	**1**	 **Accept** the biggest star has moved **Accept** stars have moved / position of stars / constellations have moved / arrangement of stars is different
5(b)	same or similar to the one in January	**1**	

Question	Answer	Marks	Further Information
6(a)(i)	photosynthesis	**1**	
6(a)(ii)	oxygen	**1**	
6(b)	gas **A** = grown / increased in size gas **B** = small(er) / dying gas **C** = (idea of) no change / not grown	**3**	**Accept** grew very well / tall(er) **Accept** wilting **Accept** same size

Question	Answer	Marks	Further Information
7(a)	40 (cm^3)	**1**	
7(b)	any volume greater than 22 (cm^3)	**1**	
7(c)	more particles more collisions	**2**	**Accept** less space between particles / more particles in one unit volume / more crowded particles / more particles in the same space / particles closer together / more particles (to) collide / particles more concentrated / more frequent collisions / collisions more often / more chance of collisions = 2 marks

Question	Answer	Marks	Further Information
8	 letter **C** touching area where dots are close together letter **R** touching area where dots are far apart	**2**	

Question	Answer	Marks	Further Information
9(a)	(aerobic) respiration	**1**	**Accept** anaerobic respiration **Do not accept** breathing
9(b)	oxygen	**1**	
9(c)	carbon dioxide	**1**	
9(d)	**any two from** air is less dense / few(er) particles / particles further apart so less oxygen (taken in with each breath idea) lower concentration gradient (for gaseous exchange) so gaseous exchange is less efficient / diffusion (of oxygen) is slower	**2**	

Question	Answer	Marks	Further Information
10(a)	calcium magnesium zinc iron	**1**	all correct = 1 mark
10(b)	magnesium + hydrochloric (acid) → magnesium chloride + hydrogen	**3**	both reactants in any order = 1 mark hydrogen as a product = 1 mark magnesium chloride as a product = 1 mark
10(c)	stop chemicals getting into eye / avoid injuries to eye from corrosive chemicals / stop reaction (mixture) getting into the eyes	**1**	There must be a reference to the eye **and** a substance, chemical or reaction

Question	Answer	Marks	Further Information
11(a)	dispersion	**1**	**Ignore** refraction
11(b)	(red) **orange** (yellow) **green** (blue) **indigo** (violet)	**2**	**three** correct and in correct order = 2 marks **one** or **two** correct and in correct order = 1 mark **note** these are the only colours allowed

Question	Answer	Marks	Further Information
12(a)	**compound**: **magnesium carbonate**; **water** **element**: (carbon); **copper**; **sulfur**	**2**	**all** correct = 2 marks **two** or **three** correct = 1 mark **one** correct = 0 **note** if substance is written in both columns then that substance is incorrect
12(b)	Mixtures are pure substances. ☐ Mixtures can be separated by physical means. ✓ Mixtures only contain elements. ☐ Elements in mixtures are joined by chemical bonds. ☐	**1**	more than one tick ✓ = 0 marks
12(c)	nitric (acid)	**1**	

Question	Answer	Marks	Further Information
13	All the water molecules in the liquid are moving. Some of the molecules have more **energy**. These molecules move **fast** / **quick** / **rapid** enough to escape the surface of the liquid. This is called **evaporation**. This makes the liquid become **cooler**.	**4**	each correct answer = 1 mark **Accept** heat energy / speed **Ignore** freely **Accept** vigorous **Accept** denser / decrease in volume / gas / (water) vapour

Question	Answer	Marks	Further Information
14(a)	<table><tr><th colspan="2">concentration of carbon dioxide</th><th colspan="2">concentration of oxygen</th></tr><tr><td>high</td><td>low</td><td>high</td><td>low</td></tr><tr><td>✓</td><td></td><td></td><td>✓</td></tr></table>	**1**	both ticks required any incorrect tick = 0 marks
14(b)(i)	artery	**1**	
14(b)(ii)	(blood is at high) pressure / so it does not rupture	**1**	**Accept** so blood vessel will not burst / resists the pressure of the blood

Question	Answer	Marks	Further Information
15(a)	A B C D **E**	**1**	more than one answer = 0 marks
15(b)	increasing / going up	**1**	**Accept** accelerating / (goes) faster / slow then goes fast

Question	Answer	Marks	Further Information
16	force x distance is a moment balance when moments are equal / balance when clockwise moment equals anti-clockwise moment **but for 2 marks** $F_1 \times d_1 = F_2 \times d_2$	**2**	 **Accept** $F_1 \times d_1$ or $F_2 \times d_2$ answer must refer to moments rather than force or pressure