Cambridge Assessment International Education

Cambridge Lower Secondary Checkpoint

SCIENCE **0893/02**

Paper 2 **April 2024**

MARK SCHEME

Maximum Mark: 50

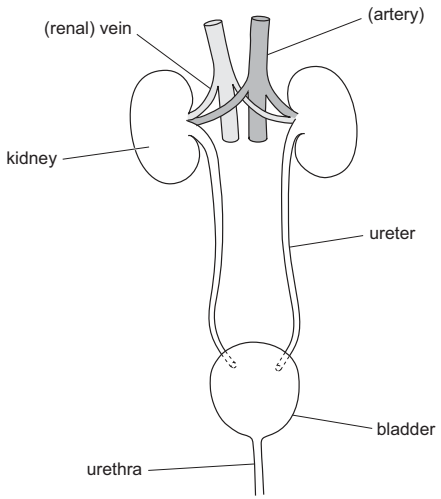
Published

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 **14** pages. Any blank pages are indicated.

IB24 05_0893_02/4RP

Question	Answer	Marks	Further Information
1(a)		**3**	**all five** correct = 3 marks **three or four** correct = 2 marks **one or two** correct = 1 mark
1(b)	(idea that) child **B** has an extra ureter **or** child **B** has more ureters **or** child **B** has 3 ureters (not 2)	**1**	**Accept ecf** for name of ureter from **(a)** **Accept ora** for child **A** **Ignore** child **A** has a normal renal system **or** child **B** has an abnormal renal system

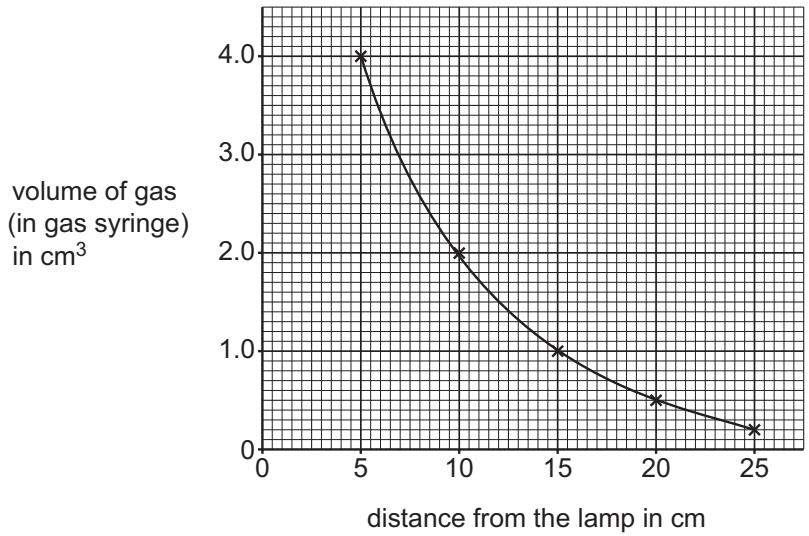
Question	Answer	Marks	Further Information
2(a)	**A**	**1**	
2(b)	protons have a positive charge **and** electrons have a negative charge (idea that) fewer electrons than protons **or** has three protons and two electrons **or** has more protons than electrons	**2**	each correct answer = 1 mark **Accept** more positive particles than negative particles **or** fewer negative particles than positive particles
2(c)	**A**	**1**	
2(d)	attraction between a positive(ly) (charged) **ion** and a negative(ly) (charged) **ion**	**1**	**Accept** electrostatic attraction between **ions** **Accept** attraction between oppositely charged **ions**

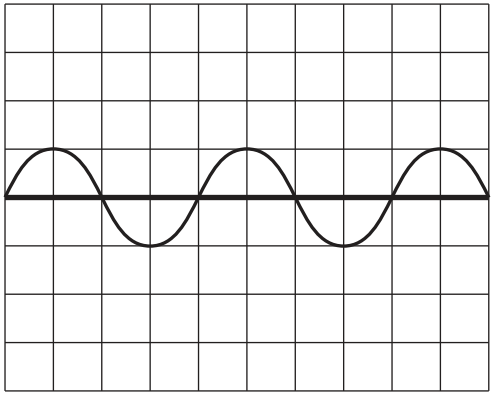
Question	Answer	Marks	Further Information
3(a)	(amplitude) increases **or** (amplitude) is higher	**1**	**Ignore** gets louder
3(b)	frequency	**1**	**Ignore** descriptions of the word frequency

Question	Answer	Marks	Further Information
4(a)	**convect**ion (currents)	**1**	
4(b)	they move towards each other **or** converge **or** subduct	**1**	**Accept** they collide **or** pushed against each other **or** they hit each other **or** crash into each other **or** move against each other **Accept** (fold) mountain building **or** volcanoes **or** volcanic eruptions **or** earthquakes

Question	Answer	Marks	Further Information
5	(density =) mass ÷ volume **or** 840 ÷ 80 10.5 g/cm^3	**3**	$10.5\ g/cm^3$ with or without working = 3 marks 10.5 with or without working = 2 marks correct unit = 1 mark equation **or** evidence of equation, e.g. correct substitution = 1 mark **Accept** $(d =) \frac{m}{v}$

Question	Answer	Marks	Further Information
6(a)	**any one from** pattern of alignment is the same either side of the ridge rocks of similar age are being created **or** rocks of similar age are added to plates either side of ridge the sea floor is moving apart	**1**	**Accept** (idea that) mid-Atlantic ridge present (in the correct context) **or** (idea that) new rock or sea floor is formed as the plates move apart **or** (idea that) magma moves upwards into plate boundary **Note** tectonic plates move is **not** sufficient
6(b)	(idea that) similar fossils are found in different continents (that are not connected)	**1**	**Accept** (idea that) similar fossils are found in different countries (that are not connected) **Accept** (idea that) similar fossils found on different tectonic plates **Accept** same fossils for similar fossils **Accept** (idea that) similar fossil found in different places **or** in different parts of the world

Question	Answer	Marks	Further Information
7(a)	oxygen	**1**	**Accept** O_2 **Ignore** O **Note** if name and formula given the name takes precedence
7(b)		**3**	labelling and units of x-axis **and** labelling and units of y-axis = 1 mark **Accept** distance in cm **and** volume in cm^3 **all** points correctly plotted to ± half a small square = 1 mark curve of best fit = 1 mark **Accept ecf** from incorrect plots **Do not accept** straight lines between the dots
7(c)	as distance from lamp increases volume of gas collected decreases	**1**	**Accept** negative correlation **Accept ora** **Ignore** inversely proportional
7(d)	to make chlorophyll	**1**	

Question	Answer	Marks	Further Information
8(a)	waveform **C** 	**1**	
8(b)(i)	(waveform **F**) ———————	**1**	**Accept** a horizontal straight line by eye
8(b)(ii)	(sound waveform **F**) has no sound	**1**	**Accept** (loudness) decreases **Accept ora** if **D** specified **Accept ecf** from **(b)(i)**

Question	Answer	Marks	Further Information
9(a)	environmental change	**1**	more than **one** box ticked = 0 **Accept** any indication of the correct answer, e.g. circling or underlining, but ticking takes precedence
9(b)(i)	mammals	**1**	
9(b)(ii)	(idea that) coral has a high(er) percentage of low conservation (compared to birds) **or** birds have more medium conservation	**1**	**Accept** coral has less medium conservation **Accept ora** **Accept** data used from graph, e.g. high and medium is approximately 55% for birds but 35% for coral

Question	Answer	Marks	Further Information
10	(resistance =) voltage current **or** 2.7 5.0 (resistance =) 0.54 (Ω)	**2**	0.54 with or without working = 2 marks equation **or** evidence of equation, e.g. correct substitution = 1 mark **Accept** V A **or** V I **or** V C

Question	Answer	Marks	Further Information
11(a)	(description) mass remains the same (explanation) (idea of) law of conservation of mass	**2**	each correct answer = 1 marks **Accept** mass cannot be created or destroyed (during a chemical reaction) / no mass is gained or lost (in a chemical reaction) **Accept** atoms cannot be lost or gained (in a chemical reaction)
11(b)	iron + copper sulfate → iron sulfate + copper	**1**	**Accept** reactants in either order **and** products in either order **Accept** correct formulae, but words take precedence

Question	Answer	Marks	Further Information
12(a)	climate change	1	**Accept** greenhouse effect **or** global warming **or** increasing carbon dioxide in the air **or** increasing temperature (of Earth) **Accept** ice caps melt **or** glaciers melt **or** sea ice melts **or** icebergs melt
12(b)	flooding **or** loss of land	1	**Accept** loss of habitat **Accept** some (named) animals or (named) plants become endangered / some (named) animals or (named) plants become extinct **Accept** human populations living by coast need to move **or** population on islands will need to move **Ignore** sea level rise **Ignore** increase in rain fall **or** extreme weather **Ignore** destruction of property **Ignore** tsunami

Question	Answer	Marks	Further Information
13(a)	caesium **or** francium	**1**	**Accept** Cs **or** Fr, but name takes precedence.
13(b)	any value between 950 and 1500 (^{o}C)	**1**	
13(c)	simple (structure)	**1**	

Question	Answer	Marks	Further Information
14(a)	(lamp added in) series current decreases	**2**	each correct answer = 1 mark **Accept** circuit has less current **Note** resistance decreases and current decreases = 0 marks
14(b)		**1**	**Note** a rectangle on its own is **not** sufficient and the wires at the end should not have any gaps **Do not accept** a symbol for a variable resistor **or** with R in rectangle **or** horizontal line through rectangle

Question	Answer	Marks	Further Information
15(a)	**C E** (A) **D B**	**2**	**C and E** correct = 1 mark **D and B** correct = 1 mark
15(b)	nurseries	**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
16(a)	(beaker 1) 28.5 (beaker 2) 21.0	**2**	each correct answer = 1 mark **Accept** 21 (for beaker 2)
16(b)	(beaker 1) 7.5 **and** (beaker 2) 1.5	**1**	**Accept ecf**
16(c)	dark(er) **or** black **and** speed up **or** increase	**1**	**Accept ora** for a light(er) colour