



Cambridge Lower Secondary Checkpoint

SCIENCE

1113/01

Paper 1

October 2020

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.

Question	Answer	Marks	Further Information
1		4	<p>all six correct = 4 marks</p> <p>four or five correct = 3 marks</p> <p>two or three correct = 2 marks</p> <p>one correct = 1 mark</p> <p>Ignore incorrect spelling</p> <p>Accept if answers are written next to or under question</p>

Question	Answer	Marks	Further Information
2 (a)	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>display</p> </div> <div style="text-align: center;"> <p>change</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">decrease in frequency</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">decrease in loudness</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">increase in amplitude</div> <div style="border: 1px solid black; padding: 2px;">increase in pitch</div> </div> </div>	3	<p>all four correct = 3 marks</p> <p>two or three correct = 2 marks</p> <p>one correct = 1 mark</p> <p>Note more than one line from a display is incorrect for that display</p>
(b)	<p>A high–amplitude sound must be a high–frequency sound. <input type="checkbox"/></p> <p>A high–amplitude sound must be a high–pitch sound. <input type="checkbox"/></p> <p>A high–amplitude sound must be a loud sound. <input checked="" type="checkbox"/></p> <p>A high–amplitude sound must be a low–frequency sound. <input type="checkbox"/></p> <p>A high–amplitude sound must be a sound with a large wavelength. <input type="checkbox"/></p>	1	<p>more than one answer ticked = 0 marks</p>

Question	Answer	Marks	Further Information
3 (a)	igneous	1	Accept basalt / granite / dolomite / pumice / obsidian / other named igneous rocks
(b)	high temperatures would destroy remains (before they become fossils)	1	Accept fossils (already in rocks) would melt / idea that no animals living in or near a volcano Accept it is (too) hot / lava or magma would destroy fossils Accept hot magma (destroys fossils)
(c)	crust inner core mantle outer core	1	more than one circled = 0 marks
(d)	<p>The crust floats on the outer core. <input type="checkbox"/></p> <p>The inner core is solid and the outer core is liquid. <input checked="" type="checkbox"/></p> <p>The mantle is the coldest part of the Earth. <input type="checkbox"/></p> <p>The outer core is the hottest part of the Earth. <input type="checkbox"/></p>	1	more than one box ticked = 0 marks

Question	Answer	Marks	Further Information
4 (a)	vole and rabbit	1	both needed for mark either order
(b)	<div> <div>grass</div> <div>→</div> <div>goat</div> <div>→</div> <div>jackal</div> <div>→</div> <div>lion</div> </div>	1	correct sequence of organisms = 1 mark Accept plant for grass
(c)	<p>(number) goes down because the wild cat will eat more of them</p> <p>OR</p> <p>(number) increases because there are more plants to eat</p> <p>OR</p> <p>(number) stays the same because more are eaten and there is more food</p>	1	<p>Note must have how the number changes and an explanation</p> <p>Accept (number) goes down because the predator will eat more Do not accept an incorrectly named predator e.g. jackal</p> <p>Accept (number) increase because less competition for food to eat / (number) increases because more food available</p>
(d)	respiration / movement / excretion / faeces / urine / heat	1	Accept waste (products) / waste (materials)

Question	Answer	Marks	Further Information
5 (a)(i)	copper	1	
(a)(ii)	both react with acids both react with oxygen	2	each correct answer = 1 mark Accept do not react with cold water as an extra marking point
(b)	hydrogen	1	

Question	Answer	Marks	Further Information												
6 (a)(i)	refraction / it is refracted	1	Accept changes direction / bends (towards the normal) / slows down Do not accept disperses / dispersion / reflection												
(ii)	disperses / dispersion / splits into the spectrum / splits into different colours of light	1	Accept gives colour of rainbow / rainbow colours / gives many colours Do not accept reflection												
(b)	<table><tr><th>colour of light</th><th>colour of book</th><th>colour of light reflected into eye</th></tr><tr><td>red</td><td>red</td><td>red</td></tr><tr><td>blue</td><td>red</td><td>no light</td></tr><tr><td>red</td><td>magenta</td><td>red</td></tr></table>	colour of light	colour of book	colour of light reflected into eye	red	red	red	blue	red	no light	red	magenta	red	2	all three correct = 2 marks two correct = 1 mark one correct = 0 marks Accept black for no light
colour of light	colour of book	colour of light reflected into eye													
red	red	red													
blue	red	no light													
red	magenta	red													

Question	Answer	Marks	Further Information
7 (a)	<p>any two from</p> <p>the temperature of tubes decreases</p> <p>rate of cooling is faster at the start for all 3 tubes / ora</p> <p>correct comparison of temperatures of any two tubes</p>	2	<p>each correct answer = 1 mark</p> <p>Accept the longer the time the lower the temperature</p> <p>Accept the tubes lose heat energy</p> <p>Accept tube A has greatest difference between initial and final temperatures</p> <p>Accept temperature of water in tubes A or C are lower than the temperature of the water in tube B</p> <p>Accept temperature of the water in tube A decreased the fastest or dropped the fastest / temperature of water in tube B dropped the slowest = 2 marks</p>
(b)	plot a (line) graph (of each on same axes)	1	Do not accept bar chart / pie chart or histogram
(c)	<p>tube A at 3 minutes</p> <p>(the temperature falls,) then rises again at 4 minutes</p>	2	<p>each correct answer = 1 mark</p> <p>Accept does not fit the pattern / it decreases too fast or too much</p>

Question	Answer	Marks	Further Information
(d)	<p>(idea of) different (identical) tubes of hot water, one covered with fur, cloth etc. and one without any covering</p> <p>measure the temperature change in both tubes</p>	2	<p>each correct answer = 1 mark</p> <p>Accept any insulating material e.g. paper tissue Do not accept aluminium foil</p> <p>Accept this marking point even if method is incorrect</p> <p>Ignore repeat the previous experiment</p>

Question	Answer	Marks	Further Information
8 (a)	<div> <div>mixture of four elements</div> <div><input type="checkbox"/></div> </div> <div> <div>mixture of four compounds.</div> <div><input type="checkbox"/></div> </div> <div> <div>mixture of two elements and two compounds</div> <div><input checked="" type="checkbox"/></div> </div> <div> <div>mixture of one element and three compounds</div> <div><input type="checkbox"/></div> </div>	1	more than one tick = 0 marks
(b)(i)	protons and neutrons	2	each correct answer = 1 mark either order
(ii)	Copernicus Darwin Galileo Rutherford	1	more than one circled = 0 marks

Question	Answer	Marks	Further Information
9 (a)	<p>yes / true</p> <p>any two from</p> <p>high slope makes block move greater distance / low slope makes block move less distance</p> <p>in the same time</p> <p>correct use of data to illustrate answer with low slope</p> <p>correct use of data to illustrate answer with high slope</p>	2	<p>Note if no / false = 0 marks for the question</p> <p>no mark for yes or true on its own</p> <p>Note just quoting data is not sufficient for the award of a mark</p> <p>Accept greater distance in same time / travels an extra metre in the same time = 2 marks</p> <p>Accept the same distance travelled has a shorter time = 2 marks</p> <p>Accept speed with low slope is 0.25 (m/s)</p> <p>Accept speed with high slope is 0.5 (m/s)</p> <p>Accept speed is twice as fast with high slope = 1 mark</p>
(b)	<p>stop-watch / stop-clock / timing gate</p> <p>and</p> <p>rule / ruler / measuring tape</p>	1	both required in either order

Question	Answer	Marks	Further Information
(c)	any two from (block) same block / same size block / block made of the same material / same mass block / same weight block (position) block placed at top of slope / block placed in same position (slope) slope made of the same material	2	each correct answer = 1 mark

Question	Answer	Marks	Further Information
10 (a)	oxygen	1	
(b)	one gas is swapped for or takes the place of another gas	1	Accept idea that oxygen and carbon dioxide exchanged

Question	Answer	Marks	Further Information
11 (a)	parallel	1	
(b)	close switches 1 and 2 (and open switch 3)	1	Do not accept having switch 3 closed
(c)	close switches 1 and 3 (and open switch 2)	1	Do not accept having switch 2 closed
(d)	idea that current divides	1	Accept current splits / current separates Do not accept current increases

Question	Answer	Marks	Further Information
12 (a)	any value between 21 and 22 (seconds)	1	
(b)	rate of reaction increases / gets larger / gets faster idea that smaller pieces have larger (surface) area / ora so more collisions / ora	3	each correct answer = 1 mark Accept smaller pieces have more surface / more particles exposed on surface Accept particles collide more often / more frequent collisions / more chance of a collision / more (successful) collisions