



Cambridge Assessment
International Education

Cambridge Lower Secondary Sample Test
For use with curriculum published in
September 2020

Science Paper 1
Mark Scheme
Stage 9

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

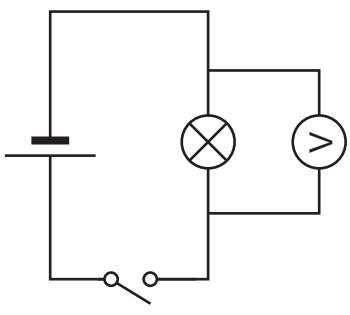
Only the science is being assessed, so answers do not need to be grammatically correct. Significant figures will be indicated in the question or in the mark scheme.

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
<u>Underline</u>	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)(i)	kidney	1	
1(a)(ii)	urea	1	Accept higher level answers e.g. ammonia / uric acid Ignore water
1(b)(i)	<p>material or piece of apparatus</p> <p>part of human excretory system</p> <p>blood cells</p> <p>kidney</p> <p>waste product</p>	3	<p>all four lines correct = 3 marks</p> <p>two or three lines correct = 2 marks</p> <p>one line correct = 1 mark</p> <p>if two lines from one material or piece of apparatus and one is incorrect = 0 marks for that material or piece of apparatus</p>
1(b)(ii)	<p>any two from</p> <p>the kidney separates waste or urea from blood / the sieve separates the sugar from the rice and or lentils</p> <p>it acts as a filter</p> <p>large particles do not pass through / blood cells do not pass through / rice or lentils do not pass through</p> <p>small particles do pass through / urea passes through / sugar passes through</p>	2	Accept the waste passes through the sieve

Question	Answer	Marks	Further Information
2(a)	2.8.3	1	Accept correct drawing but 2.8.3 takes precedence
2(b)	9	1	
2(c)	(sodium atom) loses an electron	1	Accept electron(s) lost
Question	Answer	Marks	Further Information
3(a)	A	1	
3(b)	variable resistor	1	
3(c)	 <p>voltmeter connected across lamp or cell</p>	1	

Question	Answer	Marks	Further Information
4(a)(i)	chlorophyll	1	
4(a)(ii)	protein/amino acids/peptides/polypeptides	1	
4(b)(i)	plant A has more chlorophyll plant A can make more food/more photosynthesis	2	Note assume answer refers to plant A Accept converse argument if plant B specified Accept plant A has more green leaves but name takes precedence
4(b)(ii)	oxygen	1	Accept O ₂ or O
4(c)	to reduce competition (for light, water or minerals)	1	Accept to reduce overcrowding Accept prevents spread of disease or pests / make harvesting easier Accept to have more space to grow

Question	Answer	Marks	Further Information
5(a)	decreases / goes down / reduces / gets less	1	Accept ora if going up the group is specified
5(b)	density	1	
5(c)	any value between 20 and 50 (°C)	1	Accept answers written in table but answer line takes precedence
5(d)	reactivity increases (down the group)	1	

Question	Answer	Marks	Further Information												
6(a)	piece of the Earth's crust floating on the mantle / which moves around (slowly)	2	Accept part of the lithosphere												
6(b)	any one from the two continents have complementary shapes fit together (almost exactly)	1	Ignore they have the same / similar shapes												
6(c)	<table border="1"> <thead> <tr> <th>evidence</th> <th></th> </tr> </thead> <tbody> <tr> <td>comparing their climates</td> <td></td> </tr> <tr> <td>comparing their rocks</td> <td>✓</td> </tr> <tr> <td>comparing their sizes</td> <td></td> </tr> <tr> <td>comparing their fossil records</td> <td>✓</td> </tr> <tr> <td>comparing their ecosystems</td> <td></td> </tr> </tbody> </table>	evidence		comparing their climates		comparing their rocks	✓	comparing their sizes		comparing their fossil records	✓	comparing their ecosystems		2	each correct answer = 1 mark one or two correct ticks and one incorrect tick = 1 mark two or more incorrect ticks = 0 marks
evidence															
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comparing their fossil records	✓														
comparing their ecosystems															
6(d)	earthquake / volcano / tsunami	1	Accept subduction / mountain building Accept mid-ocean ridges or trenches made												
6(e)	The tectonic plates are represented by the plastic / blocks . The water represents the magma / mantle . The water moves in a cycle in a process called convection . The Bunsen burner represents the heat source from the core .	4	each correct answer = 1 mark Accept inner core / outer core Accept centre of the Earth												

Question	Answer	Marks	Further Information
7	A white-hot spark is at a very high temperature . It does not contain much heat energy because it does not contain many particles .	3	each correct answer = 1 mark
Question	Answer	Marks	Further Information
8(a)	hydrogen	1	Accept H / H ₂ but name takes precedence
8(b)	filtration / filtering	1	
8(c)	evaporation	1	Accept boiling Ignore crystallisation
8(d)	zinc oxide + sulfuric acid → zinc sulfate + water	1	order on each side unimportant
Question	Answer	Marks	Further Information
9(a)	B	1	
9(b)	E	1	
9(c)	D and E	1	both required order unimportant
9(d)	C	1	

Question	Answer	Marks	Further Information
10(a)	all points correctly plotted curve line passing through all points	2	Accept ecf from incorrect points plotted Do not accept dot to dot Do not accept line that starts at the origin
10(b)	the higher the concentration the shorter the reaction time / ora	1	Ignore the higher the concentration the faster the reaction time Accept the higher the concentration the faster the reaction / ora

Question	Answer	Marks	Further Information
11(a)	he repeats the experiment	1	
11(b)	any two from the apparatus gets hot / risk of getting burnt the pins are sharp / risk of getting skin wound the wax catches fire	2	Note the question asks for the risks not for the precautions