



Cambridge Assessment
International Education

Cambridge Lower Secondary Progression Test

Science mark scheme

Stage 7

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
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.
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

Stage 7 Paper 1 Mark scheme

Question	1		
Part	Mark	Answer	Further Information
(a)	1	leaf	Accept any indication of answer but circle takes precedence more than one answer circled = 0 marks
(b) (i)	1	root	Accept any indication of answer but circle takes precedence more than one answer circled = 0 marks
(ii)	1	to grow / to reproduce	Accept to produce leaves / shoots / roots / fruits / flowers / seeds and higher level answers, e.g. make protein / enzymes
(c)	2	Any two from support (leaves / flowers) joins roots to leaves act as a storage organ transport of water transport of salts / minerals transport of food / sugars	Accept photosynthesis if the idea of transport is not qualified, award 1 mark for transport
Total	5		

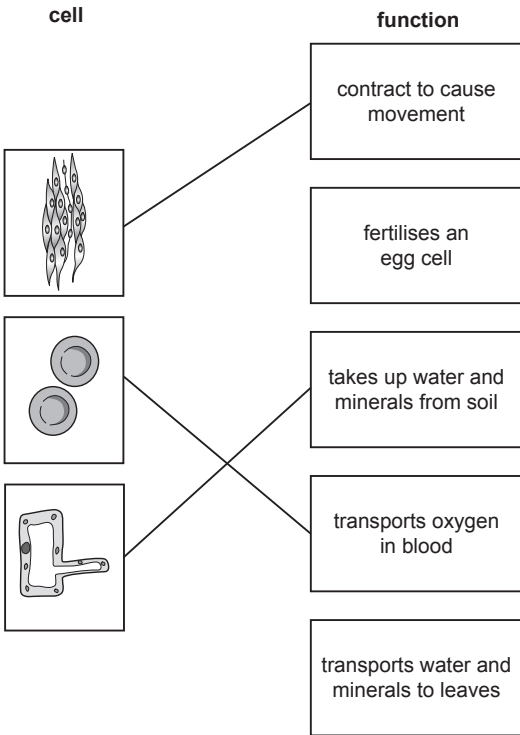
Question	2		
Part	Mark	Answer	Further Information
(a)	1	gold ammonite	
(b)	1	belemnite	
(c)	1	flat spiral (shell)	Accept (shell) is not gold in colour Accept fizzes with acid
Total	3		

Question	3		
Part	Mark	Answer	Further Information
	3	Famous space scientists include Ptolemy, Copernicus and Galileo . Copernicus thought that the Sun was at the centre of the universe. One of the most distant planets is Uranus .	each correct sentence = 1 mark
Total	3		

Question	4		
Part	Mark	Answer	Further Information
(a)	1	bone (cell)	Accept other indication of correct answer but answer line takes precedence more than one answer = 0 marks
(b)	1	spinal cord	Accept other indication of correct answer but answer line takes precedence more than one answer = 0 marks
Total	2		

Question	5		
Part	Mark	Answer	Further Information
(a) (i)	1	any value between 0 and below 7	less than 7 is not sufficient
(ii)	1	any value above 7 and up to 14	more than 7 is not sufficient
(b)	3	indicator (idea of) adding (blue) litmus or pH indicator or pH solution or pH paper or Universal Indicator result with acid (litmus) turns red / pink (pH / Universal Indicator) turns red / orange / yellow result with alkali (litmus) turns blue / purple (pH / Universal Indicator) turns blue / purple / violet	Accept other indicators with correct colour changes indicator colour must match the indicator used
Total	5		

Question	6		
Part	Mark	Answer	Further Information
(a)	1	electrical	Accept any indication of answer but circle takes precedence more than one answer circled = 0 marks
(b)	2	light thermal	Accept any indication of answer but circle takes precedence each correct answer circled = 1 mark two correct and one incorrect = 1 mark if two incorrect = 0 marks
(c)	1	destroyed	
Total	4		

Question	7		
Part	Mark	Answer	Further Information
(a)	1	E	
(b)	3	<p>cell</p>  <p>function</p> <ul style="list-style-type: none"> contract to cause movement fertilises an egg cell takes up water and minerals from soil transports oxygen in blood transports water and minerals to leaves 	each correct match = 1 mark more than one line from a cell = 0 marks for that cell
Total	4		

Question	8		
Part	Mark	Answer	Further Information
	5	See table below	each correct cell = 1 mark
Total	5		

state	distance between particles	movement of particles	forces between particles	shape
solid	(close together)	vibrates / moves to and fro / oscillates	(very) strong	(fixed shape)
liquid	(close together)	(move slowly in all directions)	weak / not strong / stronger than in a gas / weaker than in a solid	(shape of container)
gas	far apart / more than in a solid or liquid	(move quickly in all directions)	(very weak)	shape of container / fills container / no fixed shape

Question	9		
Part	Mark	Answer	Further Information
(a)	1	2.8	Accept 2.8 or test 3 area 50 cm ² next to question but answer in table takes precedence more than one answer = 0 marks
(b)	1	1.6	Accept 2.0
(c)	3	correct direction of relationship, e.g. as the area increases the time increases = 2 marks air resistance increases with increasing area = 1 mark	incorrect relationship, e.g. time decreases with area = 0 marks Accept positive (correlation) between area and time = 2 marks Accept correct mathematical relationships = 2 marks Accept correlation between area and time = 1 mark if only area linked to time = 1 mark Accept ora
Total	5		

Question	10		
Part	Mark	Answer	Further Information
	3	When the arm bends upwards, the biceps muscle contracts and the triceps muscle relaxes . The biceps and triceps are antagonistic muscles.	each correct answer = 1 mark
Total	3		

Question	11		
Part	Mark	Answer	Further Information
(a)	1	D	Accept other indication of correct answer but answer line takes precedence more than one answer = 0 marks
(b)	1	C	Accept other indication of correct answer but answer line takes precedence more than one answer = 0 marks
(c)	1	A	Accept other indication of correct answer but answer line takes precedence more than one answer = 0 marks
Total	3		

Question	12		
Part	Mark	Answer	Further Information
(a) (i)	1	gravity / gravitational force	Accept weight
(ii)	1	↓	Accept any vertical downwardly pointing arrow anywhere on the question
(b)	1	Angelique exerts more force so she jumps higher.	
Total	3		

Question	13		
Part	Mark	Answer	Further Information
(a)	2	(a group of living things which) can breed together and produce (fertile) offspring	Accept they successfully reproduce = 2 marks a group of animals with the same genes = 2 marks
(b)	1	idea of competition / compete for food / compete for habitat / compete for territory / compete for breeding sites	Accept that dogs.... attack / fight with them / introduced a disease / share the same niche
Total	3		

Question	14		
Part	Mark	Answer	Further Information
(a)	1	spring balance	Accept other indication of correct answer but tick takes precedence more than one box ticked = 0 marks
(b)	1	ruler	Accept other indication of correct answer but tick takes precedence more than one box ticked = 0 marks
Total	2		

Stage 7 Paper 2 Mark scheme

Question	1		
Part	Mark	Answer	Further Information
(a)	2	Any two from forelimbs 'webbed' / turned into wings smooth surface large surface area	Accept has wings smooth / large wings = 2 marks
(b)	1	large mouth / wide opening mouth	Accept has pointed / sharp teeth / many teeth Accept has long / large tongue
Total	3		

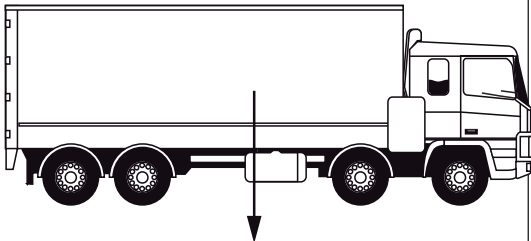
Question	2		
Part	Mark	Answer	Further Information
(a)	2	<p>part of scooter</p> <pre> graph LR subgraph Part_of_scooter [part of scooter] direction TB frame[frame] tyre[tyre] end subgraph Material [material] direction TB clay[clay] foam[foam] rubber[rubber] steel[steel] end frame --- steel tyre --- rubber </pre>	each correct answer = 1 mark
(b)	2	Any two from strong lightweight / low density shiny malleable rigid does not corrode	Ignore light in weight Accept not brittle Accept does not rust
Total	4		

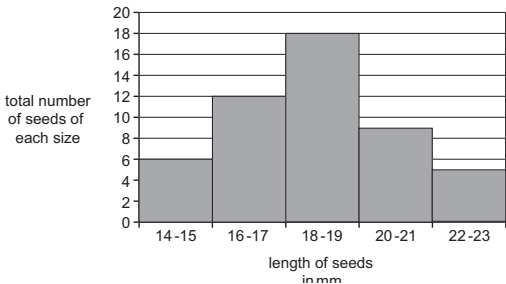
Question	3		
Part	Mark	Answer	Further Information
(a)	1	the Earth moves / the Earth is rotating / the Earth spins	Do not accept Earth is orbiting the Sun
(b)	1	the Earth has a tilted axis	Accept other indication of correct answer but circle takes precedence more than one answer circled = 0 marks
Total	2		

Question	4		
Part	Mark	Answer	Further Information
(a)	1	to kill microorganisms / to kill any bacteria / to sterilise it	Accept microbes killed / destroyed Ignore germs / bugs
(b)	1	the microorganisms / bacteria were caught in the bend of the tube	Accept the microorganisms from the air couldn't get into the broth Ignore all the microorganisms have been killed
Total	2		

Question	5		
Part	Mark	Answer	Further Information
(a)	1	thermometer	
(b) (i)	1	(idea that) as time increases the temperature gets higher	
(ii)	1	50 (°C)	Ignore 0 (°C)
(c)	2	In the first two minutes ice changes state from a solid to a liquid . In the next two minutes the particles gain more energy and move faster / apart .	solid and liquid = 1 mark energy and faster / apart = 1 mark
Total	5		

Question	6		
Part	Mark	Answer	Further Information
(a)	1	The centre of the Earth is called the core .	Accept inner / outer core
(b)	1	The mantle contains some liquid rock. This liquid rock is called magma .	
(c)	1	Liquid rock that erupts from volcanoes is called lava .	
(d)	1	When the liquid rock cools it turns into a type of rock called igneous rock.	Accept basalt / granite / pumice
Total	4		

Question	7		
Part	Mark	Answer	Further Information
(a)	1	speeds up	Accept other indication of correct answer but circle takes precedence more than one answer circled = 0 marks
(b)	1	friction / air resistance	Accept resistance / drag
(c) (i)	1		Accept any downward pointing arrow anywhere on truck or next to truck. more than one arrow = 0 marks
(ii)	1	moves it downwards	Accept other indication of correct answer but circle takes precedence more than one answer circled = 0 marks
Total	4		

Question	8		
Part	Mark	Answer	Further Information
(a)	1	19-20, 18-19, 20-21	all correct = 1 mark check actual size of seeds on question paper.
(b)	3	correct number of extra ticks ecf 18-19 2 ticks or 1 tick 20-21 1 tick 2 ticks correct totals 16-17 12 12 18-19 18 or 17 20-21 9 or 10	Accept ecf from (a) for the tick marks 16-17 with correct total = 1 mark 18-19 with correct total = 1 mark 20-21 with correct total = 1 mark
(c)	3		Accept ecf from (a) and (b) correct y-axis = 1 mark all bars correct = 2 marks but one or two bars correct = 1 mark
Total	7		

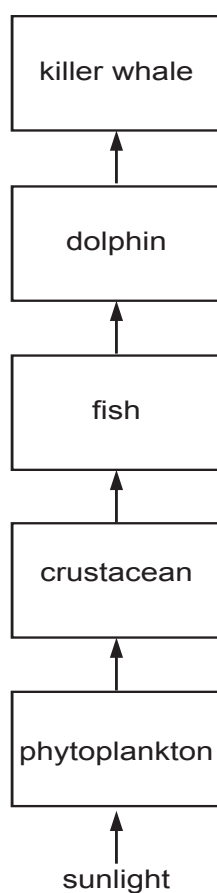
Question	9		
Part	Mark	Answer	Further Information
(a)	1	weakly acidic	Accept other indication of correct answer but tick takes precedence more than 1 tick = 0 marks
(b)	1	(pH) 7	
Total	2		

Question	10		
Part	Mark	Answer	Further Information
(a)	1	birds / aves	
(b)	2	Any two from has feathers has a beak / has a bill has wings	features need to be visible and unique to this group this mark is dependent on a correct answer to (a)
Total	3		

Question	11														
Part	Mark	Answer	Further Information												
	3	<table border="0"> <thead> <tr> <th>type of energy</th> <th>description</th> </tr> </thead> <tbody> <tr> <td>chemical</td> <td>energy it has because it is moving</td> </tr> <tr> <td>elastic potential</td> <td>energy it has because of its position</td> </tr> <tr> <td>gravitational potential</td> <td>energy it has because it has changed shape</td> </tr> <tr> <td>heat (thermal)</td> <td>energy stored in food or fuel</td> </tr> <tr> <td>kinetic</td> <td>energy that flows because of a temperature difference</td> </tr> </tbody> </table>	type of energy	description	chemical	energy it has because it is moving	elastic potential	energy it has because of its position	gravitational potential	energy it has because it has changed shape	heat (thermal)	energy stored in food or fuel	kinetic	energy that flows because of a temperature difference	five correct = 3 marks three or four correct = 2 marks one or two correct = 1 mark
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heat (thermal)	energy stored in food or fuel														
kinetic	energy that flows because of a temperature difference														
Total	3														

Question	12		
Part	Mark	Answer	Further Information
(a)	1	④	Accept other indication of correct answer but circle takes precedence more than one answer circled = 0 marks
(b)	2	reduces friction (so) skater can go faster	Accept acts as a lubricant = 1 mark
Total	3		

Question	13		
Part	Mark	Answer	Further Information
	2	see chain below	phytoplankton and killer whale in correct place = 1 mark crustacean followed by fish followed by dolphin anywhere in food chain = 1 mark



Total	2
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Question	14		
Part	Mark	Answer	Further Information
	2	<p>Any two from</p> <p>metals conduct heat, non-metals do not</p> <p>metals conduct electricity, non-metals do not</p> <p>metals are strong, non-metals are not</p> <p>metals are hard, non-metals are not</p> <p>metals are ductile, non-metals are not</p> <p>metals have a high density, non-metals do not</p> <p>metals are malleable, non-metals are not</p> <p>metals are flexible, non-metals are not</p> <p>metals are sonorous, non-metals are not</p>	<p>answers must refer to both metals and non-metals</p> <p>Accept comparisons, e.g. metals are better heat conductors than non-metals</p>
Total	2		

Question	15		
Part	Mark	Answer	Further Information
(a)	1	Saturn	<p>Accept other indication of correct answer but circle takes precedence</p> <p>more than one answer circled = 0 marks</p>
(b)	1	Mercury	<p>Accept other indication of correct answer but circle takes precedence</p> <p>more than one answer circled = 0 marks</p>
(c) (i)	1	230 N	<p>Accept other indication of correct answer but circle takes precedence</p> <p>more than one answer circled = 0 marks</p>
(ii)	1	50 (kg)	
Total	4		

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