

Cambridge Secondary 1 Progression Test

Mark scheme

Cambridge
Secondary 1

Science

Stage 7



This table gives general guidelines on marking answers involving units of length. For questions involving other quantities, correct units are given in the answers. The table shows acceptable and unacceptable versions of the answer 1.85 m.

	Correct answer	Also accept	Do not accept
Units are not given on answer line and the question does not specify a unit	1.85 m	Correct conversions provided the unit is stated, e.g. 1 m 85 cm 185 cm 1850 mm 0.00185 km	1.85 185 m
If the unit is given on the answer line, e.g.m1.85.....m	Correct conversions, provided the unit is stated unambiguously, e.g.185 cm m185.....m1850.....m etc
If the question states the unit that the answer should be given in. e.g. "Give your answer in metres"	1.85 m	1.85 1 m 85 cm	185; 1850 Any conversions to other units.

Stage 7 Paper 1 Mark Scheme

Question	1		
Part	Mark	Answer	Further Information
(a)	1	nucleus	Accept phonetic spelling
(b)	2	Any two from: chloroplast (large) vacuole cell wall starch grain(s)	Accept tonoplast
(c)	1	very small / too small to see by eye	Ignore small unqualified
Total	4		

Question	2		
Part	Mark	Answer	Further Information
(a)	1	thermometer	
(b)	3	B D C	must be in correct order
(c)	1	(no lid / not sealed so liquid) will evaporate	Accept (idea of) liquid could be easily spilled
Total	5		

Question	3										
Part	Mark	Answer	Further Information								
(a)	1	D									
(b)	1	sperm (cell) / spermatozoon / spermatozoa(n)	Accept phonetic spellings Ignore male gamete								
(c)	3	<table><tr><th>function</th><th>letter</th></tr><tr><td>to carry signals around body</td><td>A</td></tr><tr><td>to absorb water</td><td>D</td></tr><tr><td>to carry oxygen</td><td>C</td></tr></table>	function	letter	to carry signals around body	A	to absorb water	D	to carry oxygen	C	Accept names of cells: nerve cell / neurone root hair cell red blood cell
		function	letter								
		to carry signals around body	A								
		to absorb water	D								
to carry oxygen	C										
Total	5										

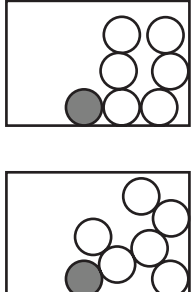
Question	4		
Part	Mark	Answer	Further Information
(a)	1	any value above 7 and up to 14	Allow decimal values in range
(b)	1	neutralisation	Accept exothermic
(c)	1	universal indicator	
(d)	1	stir / mix / swirl / shake	
Total	4		

Question	5		
Part	Mark	Answer	Further Information
(a)	1	A (and) C	in either order
(b)	1	arrow drawn pointing down and to the left	Accept arrow drawn anywhere on diagram, or underneath question, must be reasonably straight
(c)(i)	1	weight	Accept gravity
(c)(ii)	1	arrow drawn straight upward	Accept arrow drawn anywhere on diagram, or underneath question, must be reasonably straight
Total	4		

Question	6		
Part	Mark	Answer	Further Information
(a)	1	Any pair from: A (and) D B (and) C	letters can be in either order but must be paired correctly
(b)	1	B	
(c)	1	A	
Total	3		

Question	7		
Part	Mark	Answer	Further Information
(a)	1	(idea of) protection (from predators) / catching prey	Accept paralysing another insect for egg laying
(b)	1	(idea of) fooling predators that it is a wasp / that it can sting	Ignore looks like a wasp without qualification
(c)	1	<div>herbivore <input type="checkbox"/></div> <div>predator <input checked="" type="checkbox"/></div> <div>prey <input type="checkbox"/></div> <div>producer <input type="checkbox"/></div>	
Total	3		

Question	8		
Part	Mark	Answer	Further Information
(a)	2	<div> <div> fact <div> <div>The Earth orbits the Sun. It takes 365 days for one orbit.</div> <div>The Earth stays about the same distance from the Sun in its orbit.</div> <div>The Earth spins on its axis. It takes 24 hours to spin once.</div> <div>The direction of the Earth's spin on its axis is from west to east.</div> </div> </div> <div> observation <div> <div>The Sun always appears the same size.</div> <div>The seasons repeat after one year.</div> <div>The Sun rises in the east.</div> <div>We have day and night.</div> </div> </div> </div>	3 correct = 2 marks 2 correct = 1 mark 1 correct = 0 marks
(b)	1	<div> Jupiter <input type="checkbox"/></div> <div> Mars <input type="checkbox"/></div> <div> Saturn <input type="checkbox"/></div> <div> Venus <input checked="" type="checkbox"/></div>	more than 1 tick = 0 marks
Total	3		

Question	9		
Part	Mark	Answer	Further Information
(a)	1	When a substance condenses, it changes from a gas to a liquid .	
(b)	1	at least six more circles drawn	<p>must be touching, not crossing through each other, appear reasonably random e.g.</p> 
(c)	3	nitrogen iron nitrogen	<p>one mark each, must be in correct order</p> <p>Accept Fe for iron, N₂ for nitrogen</p> <p>Ignore N</p>
Total	5		

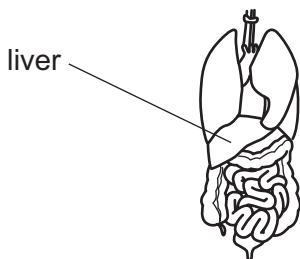
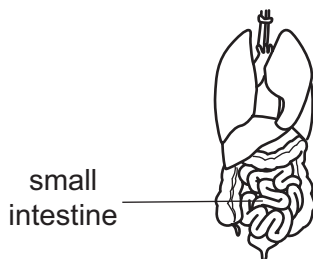
Question	10		
Part	Mark	Answer	Further Information
(a)	1	fossil(s)	
(b)	1	eight / four pairs of legs / two body parts	
(c)	2	<p>mammals did not live at the same time as spiders <input type="checkbox"/></p> <p>spiders existed before mammals <input checked="" type="checkbox"/></p> <p>mammals could live in the same place as spiders <input checked="" type="checkbox"/></p> <p>mammals developed from spiders <input type="checkbox"/></p> <p>the spiders were eaten by the mammals <input type="checkbox"/></p>	<p>one mark for each correct tick</p> <p>more than two ticks = 0 marks</p>
Total	4		

Question	11		
Part	Mark	Answer	Further Information
(a)	2	(advantage): strong(est) / strength 400 (disadvantage): forms rust / iron oxide / reacts with water	Ignore reference to cost
(b)	1	does not react with water / lightest / least dense / mass of 2.7(g)	
(c)	1	does not corrode / does not tarnish / does not react with water/air	
(d)	1	(idea of) lustrous / shiny / looks nice / desirable / malleable / easily worked into shape / valuable	
Total	5		

Question	12		
Part	Mark	Answer	Further Information
(a)	1	moons were going round / orbiting Jupiter / the planet	must be clear moons are orbiting Jupiter
(b)	1	Any one from: (January) 13 th (January) 15 th	Allow dates given as 13/1 or 1/13 Ignore any reference to year
(c)	1	(idea that) moon(s) could be (passing) in front of or behind planet	Accept those not visible were outside telescope's field of view not moons were not there
(d)	1	(idea that) too small / not bright enough or other telescopes were not high enough quality / powerful enough	Do not accept ideas that they were not there at that time
(e)	1	conflicted with religion / tradition / accepted views	Accept he was not trusted as a scientist
Total	5		

Stage 7 Paper 2 Mark Scheme

Question	1		
Part	Mark	Answer	Further Information
(a)	2	A: leaf / leaves B: stem	one mark for each correct answer
(b)	1	take in water / minerals support / anchorage	must have idea of taking up water or minerals
(c)	1	to attract insects	
Total	4		

Question	2		
Part	Mark	Answer	Further Information
(a)	1		one mark for each correct line label lines to end within the perimeter line of each organ Ignore arrow heads or dashed lines
(b)	1		
Total	2		

Question	3		
Part	Mark	Answer	Further Information
(a)	1	coal oil/petroleum natural gas	all 3 required for 1 mark, can be in any order Accept coal derivatives, eg. coke, anthracite Accept fuel derivatives in place of oil, e.g. kerosene Accept methane as alternative to natural gas
(b)	1	(contributes to) global warming / acid rain / smog / non-renewable / emits large amounts of CO ₂ / reference to effects of particulates e.g. asthma, blackened buildings	Ignore pollution unqualified Ignore climate change
(c)	1	material / matter from living things / organisms	
(d)	1	can produce / grow more	not can be used again
(e)	1	Any one from: deforestation / habitat destruction / soil erosion / food chain disruption / loss of natural resource / increased CO ₂ levels / loss of visual appeal of landscape / loss of recreational resource	can be idea of these rather than specific terms
Total	5		

Question	4				
Part	Mark	Answer			Further Information
	4	element	metal	non-metal	6 ticks correct = 4 marks 5 ticks correct = 3 marks 4 ticks correct = 2 marks 2 or 3 ticks correct = 1 mark 1 tick correct = 0 marks
		A		✓	
		B	✓		
		C	✓		
		D	✓		
		E		✓	
		F		✓	
Total	4				

Question	5		
Part	Mark	Answer	Further Information
(a)	1	arrow pointing upwards and parallel to the ramp surface	Accept arrow drawn anywhere on diagram
(b)	2	Any two from: height of the ramp / number of books same ramp surface / material same weight / mass / size of object	Ignore same person timing / same stopwatch
(c)	1	too large / doesn't fit the pattern	Ignore looks wrong unqualified
(d)	1	(idea of) repeating (this test)	
Total	5		

Question	6		
Part	Mark	Answer	Further Information
(a)	1	14 /14.0	Do not accept 14.00
(b)	1	0.8 / 0.80	Do not accept .8 or .80
Total	2		

Question	7				
Part	Mark	Answer			Further Information
	3	object	energy from	energy to	one mark for each correct answer Accept heat / light for wood fire
		car	(chemical)	(kinetic)	
		light bulb	(electrical)	light	
		wood-burning fire	(chemical)	thermal	
		battery in a circuit	chemical	(electrical)	
Total	3				

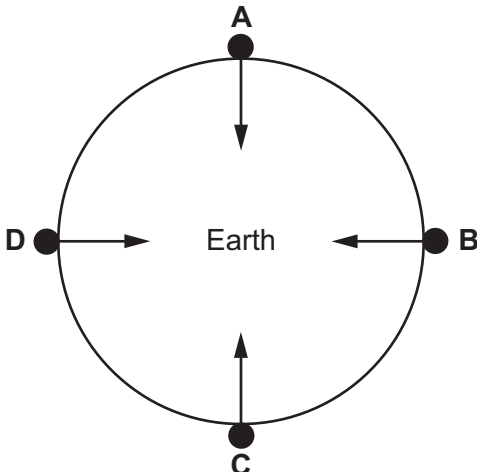
Question	8		
Part	Mark	Answer	Further Information
(a)	1	ball moves quickly / difficulty looking at eye level / hard to watch ball and scale together	Allow ball may not bounce vertically / in front/ in line with / scale
(b)	2	both points plotted correctly appropriate straight line drawn	points to be within $\pm 1/2$ small square
(c)	1	(idea that) anomalies are more easily spotted / other values can be predicted	
(d)	1	(idea that) less reliable / not as accurate as Liz and Rena's / whole test needs repeating	lack of reliability idea can refer to any aspect of the test
Total	5		

Question	9		
Part	Mark	Answer	Further Information
(a)	2	A: crust B: mantle	one mark for each correct answer
(b)	2	The inner core is a solid and it is made of iron .	one mark for each correct answer and must be in the correct order
Total	4		

Question	10		
Part	Mark	Answer	Further Information
(a)	2	forces are equal / same size / both 100 N forces are opposite / forces cancel out / pulling against each other	one mark for each correct answer
(b)	1	decreases / becomes less / smaller	Accept numerical value less than 100 N
Total	3		

Question	11		
Part	Mark	Answer	Further Information
(a)	2	B are taller B have paler leaves	one mark for each correct answer Must refer to tray A or B Allow reverse argument for A Allow less green for paler
(b)	2	light is a form of energy <input checked="" type="checkbox"/> light is given out by the window <input type="checkbox"/> light is the same as heat <input type="checkbox"/> the sun is a light source <input checked="" type="checkbox"/> the moon is a light source <input type="checkbox"/>	one mark for each correct box more than two ticks = 0 marks
(c)	1	7 / 7.0 / seven	
Total	5		

Question	12		
Part	Mark	Answer	Further Information
(a)	1	the moon (orbits the earth)	
(b)	1	(idea that) all appear to go around us / appear to move across sky / Earth does not seem to move / sun rises and sets	Accept idea that Earth appears stationary to us. Not Earth spins on axis unqualified.
Total	2		

Question	13		
Part	Mark	Answer	Further Information
(a)	2	<p>arrows from B and D pointing towards centre of Earth</p> <p>arrow from C pointing towards centre</p> 	<p>both arrows from B and D needed for 1 mark</p> <p>all arrows must be reasonably straight and point approximately to the centre</p>
(b)	2	<p>The mass of object A will be the same when placed on the Moon</p> <p>The weight of object A will be less when placed on the Moon</p>	one mark for each correct answer
Total	4		

Question	14		
Part	Mark	Answer	Further Information
	2	<p>any value between 0 and below 7</p> <p>because it is an acid</p>	Accept decimal values
Total	2		

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