



Science

Stage 6

Paper 1

Mark Scheme

Science Stage 6 Paper 1 Mark Scheme

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.

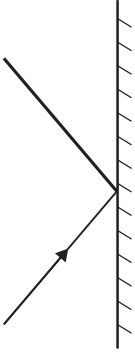
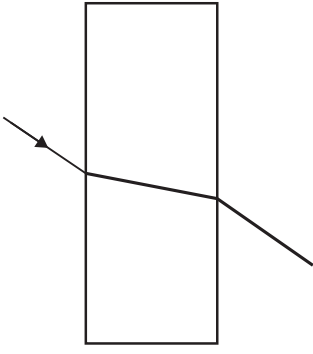
Annotations and abbreviations

/ 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

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Question	Answer	Marks	Further Information
1(a)	artery / arteries vein / veins capillary / capillaries	3	each correct answer = 1 mark Accept any order
1(b)	pump(s) blood	1	Accept forces blood around the body
1(c)	any two from oxygen nutrients / glucose / amino acids / sugar waste / urea	2	each correct answer = 1 mark

Question	Answer	Marks	Further Information
2(a)	B	1	
2(b)	E any two from the temperature stays the same / there is no temperature change there are no gas bubbles there is no colour change / stays a colourless solution	3	correct letter = 1 mark each correct reason = 1 mark, maximum 2 marks Note the marking points are independent of each other so the incorrect letter could still get 2 marks if the reasons are correct

Question	Answer	Marks	Further Information
3(a)	straight line reflected at the plane mirror 	1	Ignore any arrows on diagram Note judge the reflected line by eye but it must be a continuous line Accept other lines that are reflections but do not obey the law of reflection
3(b)	reflection	1	
3(c)	ray changes direction (when entering the block) straight line through the block ray changes direction (when leaving the block) 	3	each correct answer = 1 mark Note mark each marking point independently Note lines not drawn with a ruler is a maximum of 2 marks Ignore any arrows on diagram
3(d)	refraction	1	

Question	Answer	Marks	Further Information
4(a)	energy (transfer)	1	Ignore who eats who / food
4(b)	fruit/berries → mouse → snake → buzzard correct order = 1 mark correct arrows = 1 mark	2	Accept correct arrows even if an incorrect food chain is given, i.e. answer with three or five organisms
4(c)	berries are eaten by an animal and then the next animal and finally by the buzzard the toxic substance will follow the same path/passes down the food chain to the buzzard and is toxic to the buzzard	2	Accept buzzard eats animals that have eaten the greenfly that have been killed Accept correctly named animals that have eaten the berries and then been eaten by the buzzard Accept higher level answers

Question	Answer	Marks	Further Information
5(a)	16	1	Accept 16.0 Accept correct answer anywhere in the question, but table takes precedence Ignore any units given in the table
5(b)	fair test/it is a control variable	1	Do not accept to make it reliable or more accurate
5(c)	volume of water collected / volume of water in measuring cylinder	1	Note just volume of water is not sufficient
5(d)	X	1	Accept ecf from reading in (a) Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence more than one answer circled = 0 marks
5(e)	any value equal to or above 36 (cm ³)	1	Do not accept value above 50 cm ³

Question	Answer	Marks	Further Information
6(a)	as temperature increases the time gets less	1	Accept ora
6(b)	as temperature increases the (water) particles move faster/ as temperature increases the water particles surround the salt particles faster	1	Accept ora
6(c)	line graph	1	Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence more than one answer circled = 0 marks
6(d)	increase reliability	1	Accept can check results / can take averages Do not accept fair testing Ignore make it more accurate
6(e)	the salt dissolves too fast / the time taken is too short / there is more of a safety risk with very hot water	1	

Question	Answer	Marks	Further Information												
7(a)	<table><thead><tr><th>component</th><th>number of components in the circuit</th></tr></thead><tbody><tr><td>buzzer</td><td>1</td></tr><tr><td>cell</td><td>2</td></tr><tr><td>closed switch</td><td>2</td></tr><tr><td>open switch</td><td>1</td></tr><tr><td>lamp</td><td>3</td></tr></tbody></table>	component	number of components in the circuit	buzzer	1	cell	2	closed switch	2	open switch	1	lamp	3	3	all five correct = 3 marks three or four correct = 2 marks one or two correct = 1 mark
component	number of components in the circuit														
buzzer	1														
cell	2														
closed switch	2														
open switch	1														
lamp	3														
7(b)	series and (idea that) there is only one pathway from one side of the cell to the other side of the cell	1	both answers needed for the mark parallel circuit = 0 marks												

Question	Answer	Marks	Further Information																		
8(a)	<table><tr><th>planet</th><th>distance from the Sun in millions of km</th></tr><tr><td>Mercury</td><td>58</td></tr><tr><td>Mars</td><td>228</td></tr><tr><td>Venus</td><td>108</td></tr><tr><td>Earth</td><td>150</td></tr><tr><td>Neptune</td><td>4495</td></tr><tr><td>Uranus</td><td>2871</td></tr><tr><td>Saturn</td><td>1434</td></tr><tr><td>Jupiter</td><td>779</td></tr></table>	planet	distance from the Sun in millions of km	Mercury	58	Mars	228	Venus	108	Earth	150	Neptune	4495	Uranus	2871	Saturn	1434	Jupiter	779	3	all eight correct = 3 marks five, six or seven correct = 2 marks three or four correct = 1 mark Note if no marks scored award 1 mark if all eight planets are named Ignore Pluto
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8(b)	orbit	1																			
8(c)	28 days	1	Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence more than one answer circled = 0 marks																		

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