

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)	kingfisher	1	
1(b)	water beetle and snail	1	both needed in any order for the mark
1(c)	plants → tadpole → fish → kingfisher	1	all four correct for the mark
1(d)	Sun/light absorbed by plants tadpole/animal eats the plants and so obtains energy	2	each correct answer = 1 mark Accept Sun/light used for photosynthesis Accept producer for plant

Question	Answer	Marks	Further Information
2(a)	gas at room temperature (hydrogen) neon solid at room temperature (gold) carbon copper lead	2	all four correct = 2 marks one, two or three correct = 1 mark if substance in both ovals, then incorrect for that substance
2(b)	hydrogen	1	
2(c)	(Boiling is) when a liquid becomes a gas at the boiling point. (Evaporation is) when a liquid becomes a gas below the boiling point.	2	each correct sentence = 1 mark Accept boiling only happens at the boiling point or boiling occurs throughout a liquid Accept evaporation happens below the boiling point or evaporation only occurs at the surface of a liquid

Question	Answer	Marks	Further Information												
3(a)	<table><tr><th>(circuit)</th><th>lamp brightness</th></tr><tr><td>A</td><td>8</td></tr><tr><td>B</td><td>8 and 8</td></tr><tr><td>C</td><td>(8 and 8 and 8)</td></tr><tr><td>D</td><td>5 and 1</td></tr><tr><td>E</td><td>2 and 2 and 2</td></tr></table>	(circuit)	lamp brightness	A	8	B	8 and 8	C	(8 and 8 and 8)	D	5 and 1	E	2 and 2 and 2	2	all five correct = 2 marks two, three or four correct = 1 mark one correct = 0 marks Accept 5 and 1 in either order
(circuit)	lamp brightness														
A	8														
B	8 and 8														
C	(8 and 8 and 8)														
D	5 and 1														
E	2 and 2 and 2														
3(b)	D	1	more than one answer circled = 0 marks Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence Accept answer circled in the results table or diagrams, but circled letter on answer line takes precedence Accept ecf from part (a)												
3(c)	lamps have the same brightness in parallel circuits the more lamps in a series circuit the dimmer/less bright the lamps / ora	2	each correct answer = 1 mark Accept higher level answers, e.g. the current is the same in all branches of a parallel circuit Accept the lamps are brighter in the parallel circuits than in the series circuits												

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Question	Answer	Marks	Further Information
4(a)	igneous	1	Accept named igneous rock, e.g. granite
4(b)	metamorphic	1	Accept named metamorphic rock, e.g. slate
4(c)	sedimentary	1	Accept named sedimentary rock, e.g. sandstone
4(d)	melting	1	more than one answer circled = 0 marks Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence Accept answer written on diagram, but answer line takes precedence

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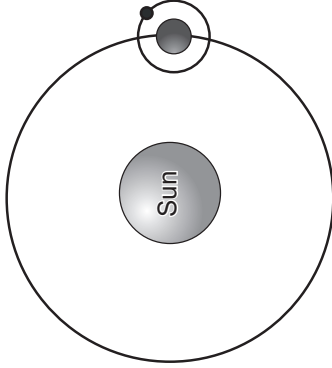
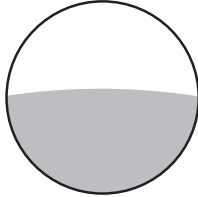
Question	Answer	Marks	Further Information
5(a)	through the nose and/or mouth to the lung(s) from the lung(s) to the blood	2	each correct answer = 1 mark
5(b)	to hold more air/oxygen	1	Accept correct ideas, e.g. so it can hold its breath longer underwater

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Question	Answer	Marks	Further Information
6(a)	any one from mass of liquid time taken	1	Accept mass decrease
6(b)	for one mark circles/particles drawn leaving the liquid for two marks more circles/particles leaving liquid A than liquid B	2	
6(c)	any two from shows particles are involved in evaporation shows evaporation happens at the surface of a liquid shows particles change from being a liquid to a gas (state) particles cannot be seen helps Safia describe the process of evaporation	2	each correct answer = 1 mark Accept other ideas, e.g. it simplifies the process or visualises the process

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Question	Answer	Marks	Further Information
7(a)	A upthrust B friction or water resistance C weight or (force of) gravity D applied force	2	all four correct = 2 marks one, two or three correct = 1 mark Accept buoyancy force or lift Accept for C gravitational force Accept for D thrust or propulsion or forward force or driving force or pushing force
7(b)	(speed) stays the same or constant (speed)	1	
7(c)	A	1	more than one answer circled = 0 marks Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence

Question	Answer	Marks	Further Information																		
8(a)	<table><thead><tr><th>planet</th><th>distance from the Sun in millions of km</th></tr></thead><tbody><tr><td>Earth</td><td>150</td></tr><tr><td>Jupiter</td><td>779</td></tr><tr><td>Mars</td><td>228</td></tr><tr><td>Mercury</td><td>58</td></tr><tr><td>Neptune</td><td>4495</td></tr><tr><td>Saturn</td><td>1434</td></tr><tr><td>Uranus</td><td>2873</td></tr><tr><td>Venus</td><td>108</td></tr></tbody></table>	planet	distance from the Sun in millions of km	Earth	150	Jupiter	779	Mars	228	Mercury	58	Neptune	4495	Saturn	1434	Uranus	2873	Venus	108	2	all eight correct = 2 marks four, five, six or seven correct = 1 mark less than four correct = 0 marks
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8(b)		1	Moon and orbit around Earth = 1 mark Accept the Moon drawn in any position on its orbit around the Earth																		
8(c)	(idea that) clouds are in the way	1																			
8(d)		1	correct diagram = 1 mark Accept approximately half shaded on the left-hand side																		

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Question	Answer	Marks	Further Information
9(a)	(Blood vessel A is) an artery. (Blood vessel B is) a vein.	1	both answers correct for the mark
9(b)	nutrients	1	Accept any correct answer, e.g. carbon dioxide or hormones or named nutrients Ignore oxygen and waste

Question	Answer	Marks	Further Information
10	(description) (idea that ray of) light changes direction when it travels into glass/water (explanation) this is refraction	2	each correct answer = 1 mark Note answers can be anywhere on the answer lines

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