

Science

Stage 6

Paper 2

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

Question	Answer	Marks	Further Information
1(a)	arteries veins capillaries	2	all three correct in any order = 2 marks one or two correct = 1 mark
1(b)	oxygen nutrients waste	2	all three correct = 2 marks one or two correct = 1 mark

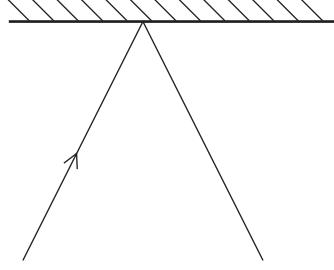
Question	Answer	Marks	Further Information
2(a)	Sun or sunlight or light	1	
2(b)	crab or starfish crab and octopus	2	each correct food chain = 1 mark both needed in the correct order for the mark
2(c)	any one from (idea that) the sealion eats lots of crabs (idea that) the sealion eats crab and octopus	1	Ignore the sealion is bigger

Question	Answer	Marks	Further Information
3(a)	(idea that) solid particles move into the liquid or the liquid particles surround the solid particles (idea that) solid particles spread out or there is more space between the solid particles	2	each correct answer = 1 mark
3(b)	any two from particles have more energy particles move faster particles collide more particles move further apart	2	each correct answer = 1 mark

Question	Answer	Marks	Further Information
4(a)	any two from amount of bacteria amount of nutrients temperature or warmth time or (5) days	2	each correct answer = 1 mark
4(b)	(risk) bacteria may get out of the dishes (way to reduce this risk) seal the dishes or use lids on the dishes	2	any one correct risk = 1 mark correct way to minimise the risk given = 1 mark Accept any suitable risk and the correct way to minimise this risk, e.g. (risk) acid is corrosive or acid can burn (way to minimise the risk) by washing hands immediately after contact or wearing gloves
4(c)	W on top left dish A on bottom middle dish	1	both correct for the mark
4(d)	stomach	1	

Question	Answer	Marks	Further Information
5(a)	21 (°C)	1	
5(b)	temperature at which a liquid becomes a gas	2	each correct answer = 1 mark Ignore °C or 100 °C Ignore water turns to (water) vapour/steam
5(c)	(highest boiling point) gallium (least difference) water (measure a temperature of –50 °C) ethanol	2	all three correct = 2 marks one or two correct = 1 mark

Question	Answer	Marks	Further Information						
6(a)	(10% idea that the ball is) 10% below water surface or nearly all above water (50% idea that the ball is) half above water and half below water (100% idea that the ball is) completely below surface of water	2	all three correct = 2 marks one or two correct = 1 mark						
6(b)	<table><tr><td>percentage 0% to 32%</td><td>percentage 33% to 66%</td><td>percentage 67% to 100%</td></tr><tr><td>B E</td><td>A C D</td><td>F</td></tr></table>	percentage 0% to 32%	percentage 33% to 66%	percentage 67% to 100%	B E	A C D	F	2	all six correct = 2 marks four or five correct = 1 mark
percentage 0% to 32%	percentage 33% to 66%	percentage 67% to 100%							
B E	A C D	F							
6(c)	sinks heavier	2	each correct answer = 1 mark Accept higher level answers in terms of density						
6(d)	(idea of) changes shape of the modelling clay	1	Accept examples of change of shape, e.g. flatten the modelling clay or make the ball hollow						

Question	Answer	Marks	Further Information
7(a)	refraction (idea that the) ray of light changes direction (when it changes medium)	2	each correct answer = 1 mark Ignore bends Accept higher level answers e.g. ray of light changes speed when it changes medium Accept clear answer drawn on the diagram
7(b)		1	Note correct reflection and at least one arrow in the correct direction needed for the mark Note any additional arrows drawn must be in the correct direction

Question	Answer	Marks	Further Information
8(a)	C	1	more than one answer circled = 0 marks Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence
8(b)	igneous	1	
8(c)	(suggestion idea that) rock F cooled quickly creating small crystals (suggestion idea that) rock E has larger crystals because it cooled slowly or the crystals in rock E had more time to form ora (explanation idea that) rock F was formed nearer to the surface or rock E was formed deeper in the Earth	2	each correct answer = 1 mark Accept correct answers written anywhere within the response area
8(d)	metamorphism and 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
Question	Answer	Marks	Further Information
9	air box stays the same	2	all three correct = 2 marks one or two correct = 1 mark

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