
SCIENCE

0846/02

Paper 2

April 2019

MARK SCHEME

Maximum Mark: 50

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Markers were instructed to award marks. It does not indicate the details of the discussions that took place at an Markers' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the End of Series Report.

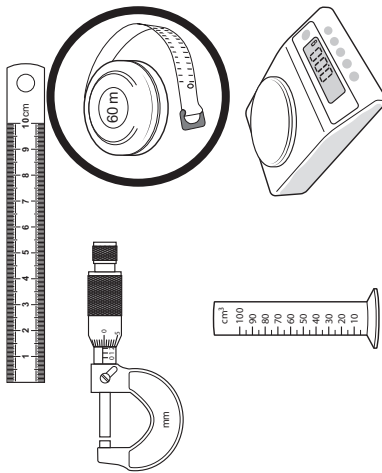
Cambridge will not enter into discussions about these mark schemes.

This document consists of **12** printed pages.

Question	Answer	Marks	Further Information								
1(a)	<table border="1"> <thead> <tr> <th>group 1</th> <th>group 2</th> </tr> </thead> <tbody> <tr> <td>(A)</td> <td>(D)</td> </tr> <tr> <td>(F)</td> <td>B</td> </tr> <tr> <td>E</td> <td>C</td> </tr> </tbody> </table>	group 1	group 2	(A)	(D)	(F)	B	E	C	1	all correct = 1 mark B and C can be in either order in group 2
group 1	group 2										
(A)	(D)										
(F)	B										
E	C										
1(b)	wings	1	Accept can fly								
Question	Answer	Marks	Further Information								
2	intensity opaque reflection shadow transparent	1	more than one answer circled = 0 marks								

Question	Answer	Marks	Further Information
3	<p>cause loss of species <input checked="" type="checkbox"/></p> <p>plant forests <input type="checkbox"/></p> <p>protect habitats <input type="checkbox"/></p> <p>reduce waste <input type="checkbox"/></p> <p>stop people killing animals <input type="checkbox"/></p>	1	more than one answer ticked = 0 marks
Question	Answer	Marks	Further Information
4(a)	filter paper	1	
4(b)	evaporating basin / evaporating dish	1	Accept 'evaporation' for 'evaporating'
4(c)	<p>any three from</p> <p>sand does not go through the filter paper / sand is insoluble / sand does not dissolve in water</p> <p>salt solution goes through the filter paper or funnel / salt solution collected (in the evaporating basin/dish) / salt is soluble</p> <p>(heat to) evaporate the water</p> <p>salt is left behind / salt crystals are formed</p>	3	<p>Accept sand is the residue / sand stays on the paper</p> <p>Accept salt solution is the filtrate</p> <p>Accept 'salt water' for 'salt solution'</p>

Question	Answer	Marks	Further Information
5(a)	1 12 24 48 365	1	more than one answer circled = 0 marks
5(b)	direction the Earth spins or rotates or turns or moves	1	
Question	Answer	Marks	Further Information
6	<p>any two from</p> <ul style="list-style-type: none"> insulator / keeps the drink hot non-toxic / non-poisonous low density / makes a light cup / lightweight can be molded into shape / malleable insoluble / does not dissolve waterproof / does not leak lasts for a long time / durable high melting point / does not melt easily does not react with the drink reused / recycled cheap to make 	2	

Question	Answer	Marks	Further Information
7(a)	<p>in the abdomen</p> <p>in the chest</p> <p>in the head</p> <p>in the legs</p> <p>in the stomach</p>	1	more than one answer circled = 0 marks
7(b)	<p>I predict that animal C / 4.8 is the smallest.</p> <p>I predict this because it has the shortest intestine / the intestine is <u>only</u> 4.8 (m).</p>	1	<p>both answers correct = 1 mark</p> <p>Answer must be comparative</p> <p>Accept correct comparisons e.g. it has the smallest intestine / small compared to the others</p>
7(c)		1	more than one answer circled = 0 marks

Question	Answer	Marks	Further Information
8(a)	thermometer	1	Accept temperature probe
8(b)	the liquid can burn / catch fire	1	
8(c)	turns into a gas	1	Accept turns into a vapour / it evaporates Do not accept turns into water vapour / condenses / turns into steam
8(d)	C because it has a boiling point of 100(°C)	1	no marks for C on its own
8(e)	B because it leaves behind a solid	1	no marks for B on its own
Question	Answer	Marks	Further Information
9(a)	wind (dispersal)	1	
9(b)	any two from (same) number of seeds amount she blows / strength of blow / idea that Lily does it both times length of tube / type of tube / size of funnel / same apparatus place where she does the investigation all the seeds start in the funnel	2	each correct answer = 1 mark Accept (same) funnel / (same) tube / direction of funnel

Question	Answer	Marks	Further Information
10(a)	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px; margin: 5px;">force</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">kilogram</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">mass</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">kilometre</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">weight</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">litre</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">newton</div> </div>	2	all three correct = 2 marks two correct = 1 mark one correct = 0 marks
10(b)	forcemeter	1	Accept newton meter / spring balance
10(c)	(direction of) friction / frictional force / air resistance	1	
Question	Answer	Marks	Further Information
11	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px; margin: 5px;">A</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">fertilisation</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">B</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">germination</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">C</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">growth</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">pollination</div> <div style="border: 1px solid black; padding: 2px; margin: 5px;">seed dispersal</div> </div>	2	all three correct = 2 marks two correct = 1 mark one correct = 0 marks

Question	Answer	Marks	Further Information
12(a)	a force of attraction a force of repulsion a negative force a positive force there is no force	1	more than one answer circled = 0 marks
12(b)	(idea that he) turns the magnet around / hold the magnet at the other end of the toy car	1	Accept use the N pole of the magnet
Question	Answer	Marks	Further Information
13	chart key table graph results	1	more than one answer circled = 0 marks
Question	Answer	Marks	Further Information
14(a)	1199 1201 1211 1219 1910	1	more than one answer circled = 0 marks
14(b)	A C D E	1	more than one answer circled = 0 marks
14(c)	(air particles) vibrate	1	

Question	Answer	Marks	Further Information
15(a)	pump blood (around the body)	1	
15(b)	bone(s)	1	
15(c)	lung(s)	1	
Question	Answer	Marks	Further Information
16	<p>the lamp is on the wrong side of the switch <input type="checkbox"/></p> <p>the switch is open <input type="checkbox"/></p> <p>there is no cell <input type="checkbox"/></p> <p>the circuit is not complete <input checked="" type="checkbox"/></p>	1	more than one answer ticked = 0 marks

Question	Answer	Marks	Further Information
17(a)	As the temperature increases the solubility of salt increases .	1	<p>Accept reverse argument e.g. As the temperature decreases the solubility of salt decreases.</p> <p>Accept alternative words for increases e.g. is more</p>
17(b)	As the temperature increases the solubility of oxygen decreases .	1	<p>Accept reverse argument e.g. As the temperature decreases the solubility of oxygen increases.</p> <p>Accept alternative words for increases e.g. rises</p> <p>Accept alternative words for decreases e.g. is less</p>

Question	Answer	Marks	Further Information
18(a)	sound (level) meter / decibel meter	1	
18(b)	to make sure the results are correct / to check the results / to make the results reliable	1	<p>Accept the words 'measurement' and 'answer' for 'result' e.g. to make sure the measurements are correct</p> <p>Do not accept to make it a fair test / to make the results accurate</p>
18(c)	<p>any two from</p> <p>all the readings are in the 60s / all the readings are in 60-70 range</p> <p>68 is the highest or loudest /</p> <p>61 is the lowest or quietest or softest</p> <p>68 is different to the others / 68 may be wrong</p> <p>the mean is 62.8</p>	2	<p>Accept most are 61 or 62 / two of the results are 62 / two of the results are 61 / two of the numbers are repeated / the range is 7</p>

Question	Answer	Marks	Further Information
19(a) 6Pf1 K	<p>the mass is 0.45 cm²</p> <p>the mass is 0.45 kg</p> <p>the mass is 0.45 m</p> <p>the mass is 4.5 N</p> <p>the mass is 4.5 s</p>	1	more than one answer circled = 0 marks
19(b) 6Pf1 K	<p>the weight is 0.45 cm²</p> <p>the weight is 0.45 kg</p> <p>the weight is 0.45 m</p> <p>the weight is 4.5 N</p> <p>the weight is 4.5 s</p>	1	more than one answer circled = 0 marks
Question	Answer	Marks	Further Information
20	<p>solute</p> <p>solution</p> <p>solvent</p> <p>a mixture of a dissolved solid and a liquid</p> <p>the liquid that dissolves a solid</p> <p>the solid that dissolves in a liquid.</p>	2	<p>all three correct = 2 marks</p> <p>two correct = 1 mark</p> <p>one correct = 0 marks</p>