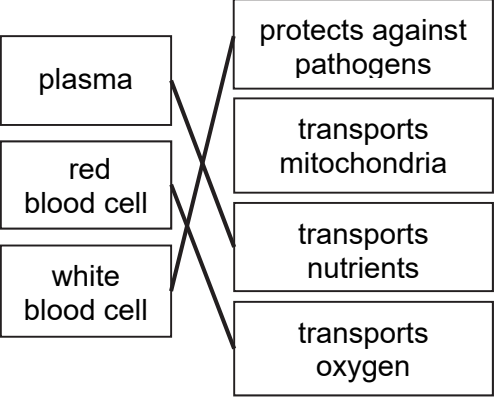


Question	Answer	Marks	Further Information
1(a)	<p><b>component</b>                      <b>function</b></p>  <pre> graph LR     subgraph Component         C1[plasma]         C2[red blood cell]         C3[white blood cell]     end     subgraph Function         F1[protects against pathogens]         F2[transports mitochondria]         F3[transports nutrients]         F4[transports oxygen]     end     C1 --- F1     C2 --- F4     C3 --- F3     F2 --- None[ ]             </pre>	2	<p><b>all three</b> correct = 2 marks</p> <p><b>one</b> or <b>two</b> correct = 1 mark</p> <p><b>Note</b> if more than <b>one</b> line from one component and <b>one</b> is incorrect that component is incorrect</p>
1(b)	diffusion	1	<p><b>Ignore</b> absorption <b>or</b> gaseous exchange</p>
1(c)	<p><b>any two from</b></p> <p>respiration is a chemical reaction <b>and</b> breathing is a mechanical process</p> <p>in respiration gases are reactants or products <b>and</b> breathing involves exchange of gases</p> <p>respiration only occurs inside cells <b>and</b> (idea that) breathing involves organs</p> <p>respiration releases energy <b>and</b> breathing requires energy</p>	2	<p>each correct answer = 1 mark</p> <p><b>Accept</b> breathing is physical process</p> <p><b>Note</b> if no marks have been awarded, <b>accept two</b> correct statements about respiration = 1 mark</p> <p><b>Note</b> if no marks have been awarded, <b>accept two</b> correct statements about breathing = 1 mark</p>

Question	Answer	Marks	Further Information
2(a)	(A) nucleus (B) electron	2	each correct answer = 1 mark <b>Accept</b> protons <b>and</b> neutrons
2(b)	protons <b>and</b> neutrons	1	both answers in either order for the mark

Question	Answer	Marks	Further Information
3	<b>Accept</b> any suitable device, e.g. mobile phone, loudspeaker, electrical fan, CD player	1	<b>Accept</b> any device that contains an electromagnet

Question	Answer	Marks	Further Information
4	field core	2	each correct answer = 1 mark

Question	Answer	Marks	Further Information
5(a)(i)	protein(s)	1	<b>Do not accept</b> any other constituent
5(a)(ii)	<b>any two from</b> calcium vitamin D protein	1	<b>two</b> correct in either order for the mark
5(b)(i)	65%	1	
5(b)(ii)	drinking alcohol	1	<b>Accept</b> any other reasonable lifestyle choice

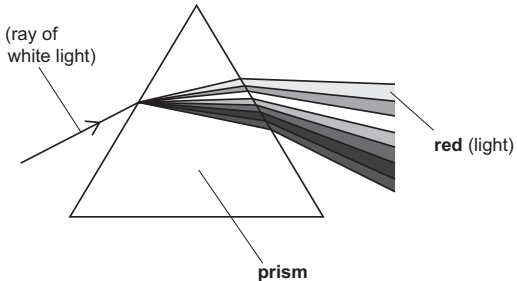
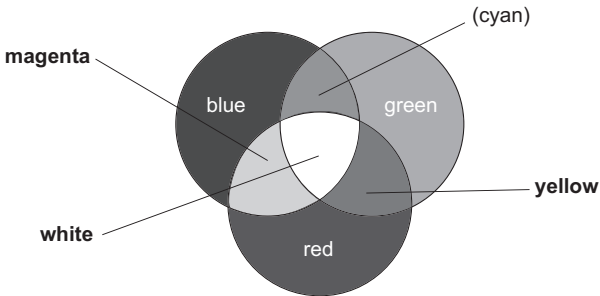
Question	Answer	Marks	Further Information
6(a)	<b>B = -7, C = (+)25, D = 0</b>	1	<b>all three</b> correct for the mark
6(b)	<b>B</b>	1	
6(c)	(idea that) there is no reaction	1	<b>Accept</b> there is no energy change

Question	Answer	Marks	Further Information
7	<b>any two from</b> moon(s) asteroid(s) comets(s) meteor(s) planetary system(s) <b>or</b> planet(s) (stellar) dust <b>and/or</b> gas(es)	1	any two correct answers = 1 mark

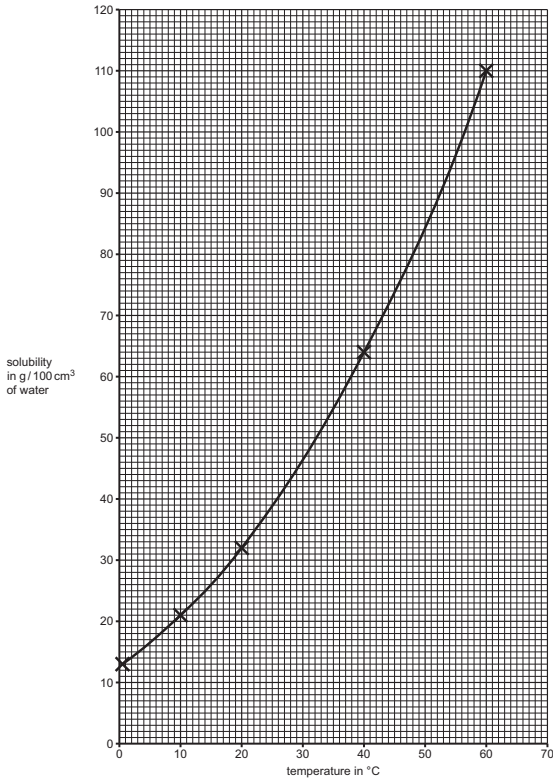
Question	Answer	Marks	Further Information
8(a)	75 (m)	1	
8(b)	62 (m)	1	
8(c)	(idea that) the slope of the graph is steeper	1	<b>Accept</b> gradient for slope  <b>Ignore</b> any quantitative answer e.g. it only takes Mike 2 s to run 14 m whereas it takes Oliver 3 s  <b>Ignore</b> (idea that) he runs further in the same time
8(d)	(idea that) Oliver's graph reaches 75m before Mike's graph	1	<b>Ignore</b> Oliver's graph reaches 75 m faster  <b>Ignore</b> any reference to Oliver being faster

Question	Answer	Marks	Further Information										
9(a)(i)	<table border="1"> <tr> <td>bread</td> <td>33</td> <td>(32)</td> <td>(30)</td> <td>42</td> <td>(41)</td> <td>(40)</td> <td>9</td> <td>(9)</td> <td>(10)</td> </tr> </table>	bread	33	(32)	(30)	42	(41)	(40)	9	(9)	(10)	1	all three correct for the mark
bread	33	(32)	(30)	42	(41)	(40)	9	(9)	(10)				
9(a)(ii)	36(°C)	1	Accept any indication of the correct answer, e.g. ticking or underlining or circling in the table, but answer line takes precedence										
9(a)(iii)	<p>no ticked (no marks)</p> <p><b>and</b></p> <p>(idea that) bread has more mass than the other two foods but rise in temperature is least</p> <p><b>or</b></p> <p>(idea that) sunflower seeds had least mass but greatest rise in temperature</p>	1	Accept any correct explanation that is supported by data from the table										
9(b)	<p>high proportion of fat</p> <p>high proportion of carbohydrate</p>	2	each correct answer = 1 mark										

Question	Answer	Marks	Further Information
10(a)	sodium hydroxide hydrogen	2	each correct answer = 1 mark
10(b)	inert	1	

Question	Answer	Marks	Further Information
11(a)(i)		2	each correct answer = 1 mark  <b>Accept</b> any indication of the correct answer, e.g. line joining word to answer line, but answer on line takes precedence
11(a)(ii)	dispersion	1	<b>Ignore</b> refraction  <b>Do not accept</b> dispersal <b>or</b> reflection
11(b)		2	<b>all three</b> correct = 2 marks  <b>one</b> or <b>two</b> correct = 1 mark  <b>Accept</b> any indication of the correct answer, e.g. line joining word to answer line, but answer on line takes precedence

Question	Answer	Marks	Further Information
12(a)	(idea of) producing electricity	1	<b>Accept</b> powering a named electrical device <b>or</b> heating water
12(b)	wind <b>or</b> tidal  fossil fuel	2	each correct answer = 1 mark  <b>Accept</b> other renewable resources e.g. geothermal or biofuel  <b>Ignore</b> solar  <b>Do not accept</b> natural gas  <b>Accept</b> named fossil fuel e.g. gasoline, diesel, coal, gas or natural gas  <b>Accept</b> nuclear or named nuclear fuel e.g. uranium or plutonium

Question	Answer	Marks	Further Information
13(a)	<p>both points correctly plotted within <math>\pm</math> half a small square</p> <p>curve touching all the points</p> 	2	each correct answer = 1 mark  <b>Do not accept</b> dot-to-dot
13(b)	(idea that) (as temperature increases) solubility increases	1	

Question	Answer	Marks	Further Information
14(a)	(idea that) distance between electromagnet and pins must be the same  <b>or</b>  (idea that) pins must have the same mass	1	<b>Accept</b> the pins must be identical  <b>Accept</b> the current through the electromagnet must remain the same
14(b)(i)	(idea that) results at 60 are inconsistent	1	<b>Accept</b> second try at 60 turns greater than second try at 80 turns
14(b)(ii)	repeat more readings (to get more consistent results)	1	
14(b)(iii)	10 <b>and/or</b> 11	1	<b>Do not accept</b> numbers other than 10 or 11
Question	Answer	Marks	Further Information
15	(idea of) an easily recognised scenario that can be used to explain a complex concept	1	<b>Accept</b> (idea of) a model showing the similarity of like features for comparison

Question	Answer	Marks	Further Information
16(a)	weather climate weather weather	2	<b>all</b> correct = 2 marks <b>two</b> or <b>three</b> correct = 1 mark <b>one</b> correct = 0 marks
16(b)	<b>any one from</b> (idea of) burning fossil fuels deforestation release of greenhouse gases increased cattle farming	1	<b>Accept</b> any example of burning fossil fuels, e.g. burning coal <b>Accept</b> cutting down trees <b>Accept</b> use of aerosols <b>Do not accept</b> unqualified methane from cows