

## **Mark Scheme for June 2010**

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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Question		Expected Answers	Marks	Additional Guidance
1	a	cost <input type="checkbox"/> heat insulation <input checked="" type="checkbox"/> (1) melting point <input checked="" type="checkbox"/> (1) strength <input type="checkbox"/>	[2]	accept any clear and unambiguous response.
	b		[2]	both lines correct on LHS = 1 mark both lines correct on RHS = 1 mark
	c	...is made from wood... <input checked="" type="checkbox"/> (1) ...is more flexible... <input type="checkbox"/> Both...can be recycled. <input type="checkbox"/> ...rots... <input checked="" type="checkbox"/> (1) ...was used for many years... <input type="checkbox"/>	[2]	accept any clear and unambiguous response.

Question		Expected Answers	Marks	Additional Guidance					
1	d	...hydrocarbon molecules.	<table border="0"> <tr> <td><b>true</b></td> <td><b>false</b></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<b>true</b>	<b>false</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	[2]	<b>accept</b> any clear and unambiguous response.  all four correct = 2 marks three or two correct = 1 mark
		<b>true</b>	<b>false</b>						
		<input checked="" type="checkbox"/>	<input type="checkbox"/>						
		...water and oxygen only.	<table border="0"> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
		<input type="checkbox"/>	<input checked="" type="checkbox"/>						
...contains polymers.	<table border="0"> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<input type="checkbox"/>	<input checked="" type="checkbox"/>								
Small molecules...	<table border="0"> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
<input checked="" type="checkbox"/>	<input type="checkbox"/>								
<b>Total</b>			[8]						
2	a	cotton (1)		[1]	<b>accept</b> any clear and unambiguous response.				
		b	i	Thickness / time weights left on fibre / method of placing weight on fibre are factors that will change the outcome of the test (1)	[2]	<b>allow</b> 1 mark for any well-reasoned factors, e.g. batch of material used in the repeats for a single fibre type  <b>allow</b> 1 mark for the reason for that factor.			
				thicker will need greater force / longer time makes breaking more likely / dropping weight on fibre causes bigger force (in the fibre) owtte (1)					
				ii			0.60 to 1.45/1.45 to 0.60 (1)	[1]	
		iii	more reliable (1)	[2]	<b>ignore</b> 'accurate' or 'fair test'  <b>allow</b> 'George's results are closer to each other' / 'Mary's results have outliers' <b>allow</b> correct numerical values of ranges 0.60-1.45 and 0.80-1.00 or 0.85 and 0.2				
idea of smaller range (1)									
<b>Total</b>			[6]						

Question			Expected Answers	Marks	Additional Guidance
3	a	i	light (1)	[1]	
		ii	radio (waves) (1)	[1]	
		iii	<b>any two from:</b> radio (waves); microwaves; infrared; light	[1]	2 correct for 1 mark.
	b		emits reflects absorbs	[2]	all correct = 2 marks one or two correct = 1 mark
			<b>Total</b>	[5]	

Question			Expected Answers	Marks	Additional Guidance
4	a	i	E B C D F A	[2]	all correct = 2 marks (E)BCxxx gets 1 mark
		ii	flooding (1) idea of a consequence, e.g. drowning, loss of homes or farmland, damage to infrastructure, etc. (1)	[2]	
	b	i	John <input type="checkbox"/> Kate <input checked="" type="checkbox"/> Nora <input type="checkbox"/> Mike <input checked="" type="checkbox"/>	[1]	both required for 1 mark.  <b>accept</b> any clear and unambiguous response.
		ii	John <input type="checkbox"/> Kate <input checked="" type="checkbox"/> (1) Nora <input type="checkbox"/> Mike <input type="checkbox"/>	[1]	<b>accept</b> any clear and unambiguous response.
		iii	John <input type="checkbox"/> Kate <input type="checkbox"/> Nora <input type="checkbox"/> Mike <input checked="" type="checkbox"/> (1)	[1]	Tick for John or Kate scores 0 marks  <b>accept</b> any clear and unambiguous response.  <b>allow</b> Nora for 1 mark.  <b>allow</b> Nora and Mike for 1 mark.
<b>Total</b>				<b>[7]</b>	

Question	Expected Answers	Marks	Additional Guidance												
5	<p><b>benefit:</b> idea of looking good, feeling good, vitamin D production,</p> <p><b>risk:</b> recognition of risk,</p>	[2]	<p><b>max 1 mark for benefit, 1 mark for risk.</b></p> <p><b>accept</b> 'get a tan' for benefit mark.</p> <p>recognition of risk might be e.g. they do not feel that (Skin) cancer/ sun burn will effect them/ they are not worried about sunburn/(skin) cancer</p>												
	<b>Total</b>	[2]													
6	a	virus (1)	[1] <b>accept</b> any clear and unambiguous response.												
	b	skin rapidly poisons symptoms	[3] all four correct = 3 marks three correct = 2 marks one or two correct = 1 mark												
	c	<p><b>i</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;"></td> <td style="text-align: center;"><b>true</b></td> <td style="text-align: center;"><b>false</b></td> </tr> <tr> <td>...every three years.</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>...10 times more cases...</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>The number of cases halved...</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>		<b>true</b>	<b>false</b>	...every three years.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	...10 times more cases...	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The number of cases halved...	<input checked="" type="checkbox"/>	<input type="checkbox"/>	[2] all three correct = 2 marks two correct = 1 mark
	<b>true</b>	<b>false</b>													
...every three years.	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
...10 times more cases...	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
The number of cases halved...	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
		<p><b>ii</b></p> <p><b>advantage:</b> idea of not getting ill with measles; idea of not spreading measles (1)</p> <p><b>disadvantage:</b> idea of side effects ; not 100% effective (1)</p>	[2] <b>max 1 advantage, 1 disadvantage</b> <b>allow</b> 'not get measles'												
			<b>accept</b> a named/suggested side effect. allow named effect of vaccination process, e.g. 'sore arm', 'high temperature'												

Question		Expected Answers	Marks	Additional Guidance
6	d	Red blood cells... <input type="checkbox"/> ...antibodies...very quickly. <input checked="" type="checkbox"/> (1) ...confusing the measles... <input type="checkbox"/> The body's natural barriers... <input type="checkbox"/> ...produce antibodies... <input checked="" type="checkbox"/> (1)	[2]	if 3 ticks deduct 1 mark 4 or 5 ticks = 0 marks
<b>Total</b>			<b>[10]</b>	
7	a	smoking <input type="checkbox"/> stress <input type="checkbox"/> regular exercise <input checked="" type="checkbox"/> (1) excessive alcohol drinking <input type="checkbox"/>	[1]	<b>accept</b> any clear and unambiguous response.
	b	<b>any two from:</b> risk of stomach bleeds; study showed no benefit to taking aspirins; study is reliable; no history of heart attacks (in the family)	[2]	<b>allow</b> ' it is peer reviewed/ it was a major long term study' as implying reliability.
	c	oxygen (1)	[1]	<b>accept</b> any clear and unambiguous response.
<b>Total</b>			<b>[4]</b>	



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