



**2010 Science**

**Standard Grade Credit**

**Finalised Marking Instructions**

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## 2010 Science – Standard Grade

### Credit Level Marking Scheme

Please note that **FRACTIONAL** marks should **NOT** be awarded for responses to questions on this paper.

		Space for Notes
<b>1</b>	<b>(a)</b> Idea it is addictive	<b>KU1</b>
	<b>(b)</b> Idea of prevents gas exchange/lung cancer/reduces/stops oxygen getting in (to blood)	<b>KU1</b> <u>Not:</u> stops air getting in prevents self-cleaning mechanism blocks lungs/air sacs
	<b>(c)</b> Haemoglobin	<b>KU1</b>
<b>2</b>	Idea that mucus traps dust/dirt etc Idea that cilia sweep dirty mucus 1 mark each	<b>KU2</b>
<b>3</b>	<b>(a)</b> X	<b>KU1</b>
	<b>(b)</b> Heron	<b>KU1</b>

		Space for Notes
<b>4</b>	<p>Any <b>two</b> from</p> <p>Repeat or repeat and average  More ages/older/younger/wider age range  More men/people  Use women (as well)  Measure over a longer time</p> <p style="text-align: right;">any two, 1 mark each</p>	<b>PS2</b>
<b>5</b>	<p>Good electrical conductivity allows heat to flow through it easily</p> <p>Good thermal conductivity allows an electric current to flow through it easily</p> <p>Hard can withstand damage to its surface caused by heat</p> <p>Strong can withstand damage to its surface caused by friction</p> <p>Heat resistant can withstand damage to its surface caused by impact</p> <p>Wear resistant can support a heavy load without breaking</p> <p style="text-align: right;">all 5 correct    3 marks  3, 4 correct    2 marks  1, 2 correct    1 mark</p>	<b>KU3</b>

			Space for Notes
6	(a) To protect the <u>local</u> environment	PS1	
	(b) Any <b>two</b> from  Fold flat Easy to transport Reliable Simple to operate Can be recycled Uses heat/energy from the sun Idea of cleaning water	PS1	
	(c) <u>Idea of</u> traps heat (absorbed by pot)	PS1	
	(d) Kills (disease-causing) parasites	PS1	
7	(a) Pie chart 1 <u>Idea of</u> flowers are closer together <u>and</u> bees journeys are shorter	PS1	
	(b) 160.5 2 marks  Correct total (963) 1 mark Wrong total divided correctly by 6 1 mark	PS2	160 } rounding answer – 1 mark 161 }  160·3 correct total – 1 mark

		Space for Notes
(c)	Any <b>two</b> from  Movement or example Waste Respiration Heat Not eating all the animal/plant or example Reproduction Growth	<b>KU2</b> <u>Not</u> : feeding/death
8	(a) Any <b>two</b> from  As power (rating) increases, cross-section increases (or vice versa)  As power rating increases, maximum safe current increases (or vice versa)  As cross-section increases, maximum safe current increases (or vice versa)  1 mark each	<b>PS2</b> Power rating: <u>accept</u> power/wattage/watts <u>not</u> : W Maximum safe current: <u>accept</u> maximum current safe current <u>not</u> : current amps A  Do not accept answers relating to fuse ratings
(b)	(i) 1.25	<b>PS1</b>
	(ii) 6	<b>PS1</b>
(c)	3	<b>KU1</b>

		Space for Notes
<b>9</b>	<p><b>(a)</b> Any <b>two</b> from</p> <p>Loss of production Cost of replacement parts/repair Cost of protection Cost of labour</p> <p>1 mark each</p>	<b>KU2</b>
	<b>(b)</b> Greasing or oiling or lubrication (or examples)	<b>KU1</b> Apply cancelling errors Eg oiling and painting – 0 marks
	<b>(c)</b> Anodising	<b>KU1</b>
	<b>(d)</b> Zinc	<b>KU1</b>
<b>10</b>	<p>Ammonia Nitrogen monoxide Oxidising tower Nitrogen dioxide Water</p> <p>5 correct 2 marks 3/4 correct 1 mark 0/1/2 correct 0 marks</p>	<b>PS2</b>

		Space for Notes
11	<p>(a)</p> <p> Aerial survey      setting off small explosions and recording the echoes  Geological survey      boring holes so that rocks from underground can be studied  Seismic survey      collecting and examining different rocks from an area  Test drilling      taking photos from a satellite to produce a map </p> <p> All 4 correct      3 marks  2/3 correct      2 marks  1 correct      1 mark </p>	KU3
	<p>(b)      (fractional) distillation</p>	<p>KU1</p> <p>Fractioning/Fractionating/distilling/ Refining/Fractionising      } Accept</p> <p>Not refinery</p>
12	<p>Any <b>two</b> from</p> <p>Strong Lightweight/light Corrosion resistant Wear-resistant/hard wearing/durable/durability</p> <p>1 mark each</p>	<p>KU2</p> <p><u>Not</u> hard</p>

			Space for Notes	
13	(a)	200	KU1	
	(b)	Longer	KU1	
14	(a)	6 months	PS1	
	(b)	95	PS1	
	(c)	Sickness and headache	PS1	
15	(a)	Idea of: As mass (hanging on spring) increases, the stretch increases (or vice versa)  Idea of: As the width (of the spring) increases, the stretch decreases (or vice versa)  1 mark each	PS2	
	(b)	1.7	PS1	
	(c)	Any value <b>between</b> 2.4 and 5.5	PS1	



					Space for Notes	
16		Cold and hot	both required	1 mark	KU2	
		Heated and steam	both required	1 mark		
17	(a)	A and C (both required)			KU1	
	(b)	Right atrium (auricle)			KU1	
	(c)	Has to pump blood all round the body/further			KU1	<u>Not</u> higher pressure
18	(a)	Capillary			KU1	
	(b)	Veins			KU1	
19	(a)	Fungi/fungus			KU1	Apply cancelling answer for fungus and hazel trees
	(b)	A (producers)			KU1	
	(c)	C (population)			KU1	
	(d)	More stable/other things for animals to eat etc			KU1	

			Space for Notes
<b>20</b>	<p><b>(a)</b> Idea of: The percentage drinking (more than the weekly limit) is higher in males (than females) (or vice versa)</p> <p>The percentage drinking (more than the weekly limit) decreases with age (or vice versa)</p>	<b>PS2</b>	
	<p><b>(b)</b> Label and scale on y-axis 1 mark Legend and labels (or key) on x-axis 1 mark Bars drawn correctly within <math>\frac{1}{2}</math> small square 1 mark</p>	<b>PS3</b>	<p>Not tolerance of <math>\pm \frac{1}{2}</math> square If only half the graph paper is used. Accept percentage or % in label</p>
	<p><b>(c)</b> 26 units 2 marks</p> <p>1 mark for correctly identifying 5 units of alcohol over limit</p>	<b>PS2</b>	
<b>21</b>	<p><b>(a)</b> 4 (carbon monoxide)</p> <p><b>(b)</b> 3 (ozone)</p> <p><b>(c)</b> 6 (sulphur dioxide)</p>	<p><b>KU1</b></p> <p><b>KU1</b></p> <p><b>KU1</b></p>	

			Space for Notes
22	(a) green	PS1	
	(b) (leaves) yellow, (leaf) bases red, smaller (leaves) any two, 1 mark	PS1	Apply cancelling errors if information about roots and/or height is given
	(c) 4 (magnesium)	PS1	
	(d) D	PS1	
23	(a) 40 2 marks 500 1 mark $\frac{20000}{500}$ 1 mark	PS2	Accept correct answer from space for working Ignore transcription errors
	(b) 60 2 marks (1500 – 600) = 900 1 mark $\frac{900}{1500} \times 100$ 1 mark	PS2	Accept correct answer from space for working Ignore transcription errors

					Space for Notes
24	y-axis title	‘mass’ <b>and</b> unit (g)		PS3	Accept ‘temp’ for temperature
	<b>and</b> x-axis title/unit	‘temperature’ <b>and</b> unit (°C)	1 mark		
	y-axis	linear scale from 0 to 80			
	<b>and</b> x-axis	linear scale from 0 to 100	1 mark		
	<b>allow</b> transposed axes				
	All 6 points correct for each line <b>and</b> lines labelled or key				Accept shortened labels eg pot chloride <u>Not</u> initials only
				1 mark	
	<b>allow</b> +/-half box if scale is 1 box/1°C no tolerance if smaller scale is used				
Total				KU40 PS40	

[END OF MARKING INSTRUCTIONS]