



2012 Science

Standard Grade Credit

Finalised Marking Instructions

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2012 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
1	(a) (i)	Cartilage	KU1
	(ii)	Bronchi	KU1
	(b)	Capillaries	KU1
	(c)	<p>Idea of Mucus/(sticky) substance which traps dirt 1 mark Cilia/(small) hairs which brush (or similar) mucus/dirt upwards/out 1 mark Mention of mucus and cilia only 1 mark</p>	KU2
2	(a) (i)	Burning more fossil fuels/ more cars/ more factories Cutting down forests/deforestation Increasing (human) population	KU1 Not: More smoke, burning fossil fuels, cars/ fumes from cars, pollution
	(ii)	Any two from Melting of (polar) ice caps (glaciers), flooding, rising sea levels, global warming (rising temperatures), more extreme weather patterns or example (hurricanes, drought etc), climate change or example (more deserts) 1 mark each	KU2 Not: Greenhouse effect Acid rain Damage to the ozone layer
	(b)	Ozone	KU1

			Space for Notes
3	<p>Polyurethane</p> <p>carbon monoxide/CO</p> <p>burns/damages the lungs/respiratory system</p> <p>1 mark each</p>	KU3	Not: affects the lungs, lung disease, lung failure
4	<p>Any two from</p> <p>leave for longer</p> <p>repeat (and average)</p> <p>more woodlice/lice/slaters</p> <p>different light intensities</p> <p>bigger tray</p> <p>black out the wall on the dark side</p> <p>1 mark each</p>	PS2	Not: More trays unless qualified to indicate repeating
5	(a) 5 (catches fire easily)	KU1	
	(b) 2 (allows heat to pass through)	KU1	
	(c) 4 (bends without snapping)	KU1	
	(d) 6 (resists damage by impact)	KU1	

			Space for Notes
6	<p>(a) Any two from</p> <p>Nausea, diarrhoea or bloating (build up of gas)</p> <p>Two required for 1 mark</p>	PS1	Not: Inability to digest lactose
	(b) Enables them to digest milk	PS1	Not: because they drink a lot of milk
	<p>(c) (Body begins to) produce less lactase or (Body) fails to produce (enough) lactase</p>	PS1	Not: because they drink less milk
	<p>(d) (i) Idea of</p> <p>Giving (a person) a drink with a high concentration of lactose</p>	PS1	Not: just given a drink/just given lactose
	<p>(ii) Lactose intolerance test involves analysing blood samples or Hydrogen breath test involves analysing breath samples or One tests the blood and the other tests the breath</p>	PS1	
	(e) May cause diarrhoea and (severe) dehydration	PS1	

			Space for Notes
7	<p>(a) As zinc increases, the hardness increases or As copper increases, the hardness decreases (or vice versa)</p>	PS1	<p>Not: (Tensile) strength or MPa related to hardness "Units" for hardness Accept: Hardness and (tensile) strength together (ignore reference to strength) e.g. As zinc increases, the hardness and tensile strength increase.</p>
	(b) Between 280 and 357	PS1	
8	<p>(a) Any one from Disease, migration, climatic change (e.g. drought), habitat interference (e.g. deforestation, building houses), food/prey, water, space, predators/hunting, waste</p>	KU1	<p>Not: natural disasters (given in question) e.g. hurricanes, forest fires pollution</p>
	(b) population	KU1	
9	(a) anodising	KU1	
	(b) electroplating	KU1	
	(c) waterproofing	KU1	
	(d) galvanising	KU1	

			Space for Notes
10	<p>(a) Any two from the idea of</p> <p>As the light intensity increases, (the number of) wood sorrel decreases (or vice versa)</p> <p>As the light intensity increases,(the number of) daisies increases (or vice versa)</p> <p>As the light intensity increases, (the number of) clover plants increases (or vice versa)</p> <p style="text-align: right;">1 mark each</p>	PS2	<p>Not: The higher the light intensity, the more plants</p> <p>Conclusions from bar graph or table alone</p> <p>Conclusions that refer to one set of data (e.g. at light intensity 10 there are more plants)</p> <p>Accept: Conclusions 2 and 3 combined in one sentence for 2 marks (As the light intensity increases,(the number of) daisies and clover plants increase)</p>
	(b) 10	PS1	
	(c) Any answer between 8 and 15	PS1	
11	<p>(a) 5 (oxides of nitrogen) and 6 (sulphur dioxide)</p> <p style="text-align: right;">1 mark each</p>	KU2	
	(b) 2 (carbon monoxide)	KU1	

			Space for Notes
12	iron pyrites air (any order) oxygen sulphur trioxide absorber sulphuric acid	PS2 All correct, 2 marks 4 or 5 correct, 1 mark	
13	(a) distillation	KU1	
	(b) Test drilling and gravity survey (any order)	KU1	
		Both required	
14	Any two from the idea of cost of protection repair replacement parts additional labour lost production	KU2	
		1 mark each	

					Space for Notes
15	(a)	Idea of As age increases, the number of people/men/women treated for heart disease increases (At any age) more men are treated for heart disease than women 1 mark each		PS2	<p>Accept: References to being treated without mention of heart disease or References to heart disease without being treated</p> <p>eg As age increases, more people get heart disease More men get treated</p>
	(b)	40 16% of 250 giving incorrect answer 50 (20% of 250 – men) 27.5 (11% of 250) 12.5 (5% of 250) 2.5 (1% of 250)	correct answer 2 marks 1 mark 1 mark 1 mark 1 mark	PS2	<p>Accept: answers from space for working</p>
16		Stronger/bigger/more magnets Rotate it faster 1 mark each		KU2	<p>Not: More turns/coils of wire (given in question)</p>
17		35 2 marks 180 1 mark		PS2	<p>Accept: answers from space for working</p> <p>Not: 36 (average)</p>

				Space for Notes	
18	(a)	Label and linear scale from zero on y-axis	1 mark	PS3	<p>If scale is not linear or does not begin at zero – maximum 1 mark for legend and labels or key</p> <p>Bars for Tartan Oil Field must be shown between 170 and 180/ 100 and 110</p> <p>Accept: superimposed bars Not: stacked bars</p>
		Legend and labels (or key) on x-axis	1 mark		
		Bars drawn correctly	1 mark		
	(b)	40	2 marks	PS2	Accept: answers from space for working
		70	1 mark		
19		D		KU1	
20	(a)	haemoglobin		KU1	
	(b)	Clotting (of blood)/seal cuts		KU1	<p>Accept: Heals cuts Forms scab Clogs the blood/cut</p> <p>Not: Covers the cut</p>
	(c)	B (immunisation)		KU1	

			Space for Notes
21	(a) 4.2	PS1	
	(b) calcite	PS1	Apply cancelling errors if other answers given
	(c) Bauxite and rocksalt Both required	PS1	Apply cancelling errors if other answers given
	(d) 1500	PS1	
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22	(a) 3	KU1	Accept: values in the range of 3 to 3.5 inclusive
	(b) Lead-212	KU1	Accept: Lead Not: -212 10.6 hours

				Space for notes	
23	(a)	(i)	toddler	PS1	
		(ii)	school child	PS1	
	(b)	Adult and school child	Both required	PS1	
	(c)	91	2 marks	PS2	Accept: answers from space for working
		13	1 mark		
		70	1 mark		
		77	1 mark		
		84	1 mark		
24	(a)	B		KU1	
		Idea of	more links/more organisms		
			Both required		
	(b)	decomposers		KU1	
	(c)	C		KU1	

				Space for Notes	
25	(a)	y-axis title/unit and x-axis title/unit	'Mass of ammonia' and (tonnes) 'Pressure' and (atm) 1 mark	PS3	
		y-axis and x-axis	linear scale between 300 and 1400 linear scale between 50 and 250 1 mark		
		allow transposed axes			
		all points correct for each line and lines labelled or key 1 mark			
		allow +/- half box if scale is 1 box/1mm no tolerance if smaller scale is used			
		ignore extrapolation			
	(b)	Any value between 800 and 1300		PS1	
		Total		KU40 PS40	

[END OF MARKING INSTRUCTIONS]