



2010 Science

Standard Grade General

Finalised Marking Instructions

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2010 Science – Standard Grade

General Level

Marking Scheme

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

Please note that where a question specifies circling or underlining, other forms of clearly indicating a response are acceptable.

			Space for Notes
1	<p>(a) Bubonic plague is spread by fleas (brucellosis is spread by cattle)</p> <p>Accept spread in different ways/methods/animals</p>	PS1	<p>Not 'one is spread by fleas' alone</p> <p>Ignore spelling eg 'flies'</p>
	<p>(b) (infectious disease)</p> <p>incubation period 1 to 3 days</p> <p>spread by airborne droplets</p> <p>caused by a bacterium/bacteria</p> <p style="text-align: right;">all 3 correct, 2 marks 2 correct, 1 mark</p>	PS2	<p>Full answers as shown</p>
2	<p>(a) X – vein</p> <p>Y – capillary</p> <p>Z – artery</p> <p style="text-align: right;">1 mark each</p>	KU3	
3	<p>(a) B (Joules)</p>	KU1	
	<p>(b) C (5 kW oven used for 3 hours)</p>	KU1	

					Space for Notes
4	(a)	Metals Or Conductors	Non-metals Insulators	both required	KU1 Metals/– zero Metals/Materials zero
	(b)	Metal Wood Plastic Cloth/Fabric		any three	KU1 Not named examples of any type of material eg steel, aluminium, cotton
	(c)	(i)	4 (wear resistant)		} KU 2 in script
		(ii)	1 (strong)		
5	(a)	C (heat)			KU1
	(b)	B (steam)			KU1
	(c)	Deep underground Or For a long time			KU1 Accept ‘for hundreds of years’ as long time (or longer)

			Space for Notes
6	(a) Blind and helpless	PS1	Accept correct additional info eg small, hatch quickly (line 2)
	(b) More food is stored (for the developing chick) Or So the chick can be more developed	PS1	Accept correct additional info eg covered in down, can soon run about (line 5)
	(c) Eggs take up <u>less space</u> , <u>nest is small</u> , parents can easily <u>keep eggs warm</u> Three correct, 2 marks two correct, 1 mark one correct, 0 marks	PS2	Take up less room (not 'more room for eggs') Small nest
	(d) Either (To help) growing bones (in the chick) Or (Mother (eats shell to) replace (her)) calcium	PS1	Idea of for growing bones or to replace calcium
7	(a) Any two from Red (blood) cells Plasma Platelets 1 mark each	KU2	Not 'red blood' 'plates'
	(b) Produce antibodies Or Engulf and/or digest (eat) them	KU1	

			Space for Notes
8	<p>Water — clearing land to build houses</p> <p>Warmth — building a reservoir near a river</p> <p>Food — building wind generators on moor land</p> <p>Shelter — ploughing land to grow crops</p> <p style="text-align: right;">All 3 correct, 2 marks 1, 2 correct, 1 mark</p>	KU2	
9	(a) Tungsten	KU1	
	(b) Chromium and nickel	KU1	
	(c) Harder	KU1	
10	<p>10%</p> <p style="text-align: right;">correct answer, 2 marks</p> <p>2.5/25 × 100 to give wrong answer, 1 mark</p>	PS2	

				Space for Notes	
11	<p>(a) Four chains with arrows up 3 marks</p> <p>Four chains with links or arrows down 2 marks</p> <p>Three chains with arrows up 2 marks</p> <p>Three chains with links or arrows down 1 mark</p> <p>Two chains with arrows up 1 mark</p>		PS3	<p>Incorrect links: tadpole → leech, leech → eel</p> <p>Waterflea → leech, midge larvae → stickleback</p> <p>Deduct max of 1 mark for 'extra' links</p>	
	(b) Increases		KU1		
	(c) Decreases		KU1	Accept '10% lost at each stage'	
	(d) Light		KU1		
12	(a) Japan		PS1	Accept name of bridge <u>and</u> Japan (not name alone)	
	(b) 1000		PS1	Not 2529	
	(c) 1149		PS1		
	<p>(d) As (total) length increases, span increases</p> <p>Or</p> <p>Length is greater than span and vice versa</p>		PS1	Not: suspension bridges have the longest span and length or other answers about types of bridges	

				Space for Notes	
13	(a)	1 (polyvinyl chloride (PVC))		KU1	
	(b)	4 (polyurethane)		KU1	
14	(a)	Full Labels on x-axis including legend Labels and scale on y-axis Bars (+/- ½ small square)	1 mark 1 mark 1 mark	PS3	Accept horizontal bar graph Percentage or % heat lost/loss for y-label Scale must start at zero, labelled or not Tolerance only for 0-50 scale Not 'w+f' for walls + floors
	(b)	2500		PS1	
15	(a)	Strength (power)		KU1	
	(b)	Suppleness (flexibility)		KU1	Not bendiness, agility

				Space for Notes	
16	(a)	Anticline Oil	1 mark each	KU2	
	(b)	Any two from Carbon monoxide/CO/Co Carbon dioxide/CO ₂ /CO ² Sulphur dioxide/SO ₂ /Sulphur oxide Water (vapour)/steam Carbon/soot	1 mark each	KU2	Not smoke nitrogen(di)oxide NO ₂ ash charcoal
17		Diamond	Country	Weight (in) carats	PS3
		Kohinoor (diamond)	India	105.60	Accept only given headings/unit one error/omission in units S. Africa, 105·6 and 530·2 Do not accept " " marks for S. Africa data without headings millennium (only) star (only) c (for carat)
		Millenium Star (diamond)	Congo	203.04	
		Centenary (diamond)	South Africa	273.85	
		Cullinan (diamond)	South Africa	530.20	
		Headings (Diamond must be first heading)		1 mark	
		12 correct entries including unit (in heading or entry)		2 marks	
		8,9,10,11 correct entries		1 mark	

			Space for Notes
18	Hypothermia	KU1	Accept variations in spelling eg hyperthermia
19	132 any two correct operations out of three with working, 1 mark (as list) eg $90 + 42 =$ wrong total, 1 mark	PS2	$45 \times 2 = 90$ $14 \times 3 = 43$ $90 \times 42 =$ incorrect answer $90 +$ incorrect = correct total $42 +$ incorrect = correct total 118 (2,2) 163 (3,2) 177 (3,3) looking for working
20	(a) gasoline paraffin bitumen diesel naphtha aviation fuel plastics fuels for cars road surfaces fuel for lorries all 4 correct, 3 marks 2, 3 correct, 2 marks 1 correct, 1 mark	KU3	
(b)	Bitumen	KU1	

				Space for Notes
21	(a)	31 correct answer wrong total correctly divided by 5 correct total incorrectly divided by 5	2 marks 1 mark 1 mark	PS2 Do not accept <u>wrong</u> total <u>incorrectly</u> divided by 5
	(b)	C (Starch)		KU1
22	(a)	A and E		PS1
	(b)	Idea of: mass/weight/size/grams of dart		PS1 <u>Or</u> how hard the wood(en tile) is <u>Not</u> the strength of the wooden tiles (alone)
23	(a)	Idea of: The older the person the lower the limit/heart rate/safe exercise zone, 1 mark The unfit person has a lower limit/heart rate/safe exercise zone, 1 mark and vice versa		PS2 Do not accept restatement(s) of specific data
	(b)	140		PS1
	(c)	30 (years)		PS1

				Space for Notes	
24	(a)	Idea of: As volume of water increases, the energy increases	1 mark	PS2	Accept – litres for volume, hotter for temperature, MJ for energy – 200ℓ uses more/double the energy (than 100ℓ) Do not accept – “units” for energy – conclusions which are not about energy
		As temperature of water increases, the energy increases and vice versa	1 mark		
	(b)	Any answer between 33.4 and 37.6		PS1	
25	(a)	Decrease		KU1	
	(b)	Stay the same		KU1	
	(c)	Increase		KU1	
26		Labels on <i>x</i> - axis Distance from city (centre) km	1 mark	PS3	Max for bar graph = 1 mark (for <i>x</i> - axis) Non-linear scale(s) = 1 mark (for <i>x</i> - axis) Accept scale(s) without zero marked
		Linear Scales on both axes	1 mark		
		All Points plotted and joined	1 mark		
			Totals	KU 40 PS 40	

[END OF MARKING INSTRUCTIONS]