



2011 Science

Standard Grade General

Finalised Marking Instructions

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2011 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	(a) Laptop (battery)	PS1	
	(b) Not rechargeable, button shape, silver oxide All correct, 2 marks 2 correct, 1 mark	PS2	Cancelling errors
2	D (ceramic, glass, metal)	KU1	Cancelling errors
3	(a) 2 (artery)	KU1	
	(b) 1 (valve)	KU1	
	(c) 4 (capillary)	KU1	
	(d) 3 (white blood cell)	KU1	

			Space for Notes
4	(a) 2500 (W)	KU1	Cancelling errors eg 2500W, 230V
	(b) C (The period of time that the heater is switched on)	KU1	Cancelling errors
5	(Dead) sea creatures 1 mark Idea of: Crushed/pressure/heat/bacteria 1 mark <u>Millions</u> of years 1 mark	KU3	Accept animals (<u>and</u> plants) <u>Not</u> plants Must include “sea” somewhere in answer <u>OR</u> clearly indicate a marine animal eg fish, plankton
6	(a) (an infected person) coughing <u>and</u> sneezing	PS1	both required
	(b) (Between) one and three <u>days</u> , 1 – 3 <u>days</u>	PS1	
	(c) Fever, headaches, aching muscles (ignore reference to coughing, sneezing, starts to feel unwell)	PS1	All three required
	(d) <u>Elderly</u> , (people with) <u>chronic heart</u> (or) <u>lung disease</u>	PS1	All information required
	(e) <u>Virus</u> (continually) <u>changes</u>	PS1	

				Space for Notes	
7	(a)	(i)	Decreases	KU1	
		(ii)	More	KU1	
	(b)	(i)	Lichen (canary)	KU1	Not: fungus, moss birds
		(ii)	Asthma, bronchitis, TB, local description eg farmers lung emphysema	KU1	Not: other named cancers (eg throat cancer), flu, chest infection, heart disease
8	28		2 marks	PS2	
	Wrong total correctly divided by 5		1 mark		
	Correct total (140)		1 mark		
9	Heading and units		1 mark	PS3	Units in headings <u>OR</u> in at least 3 of 4 data "Type of coal" must be first Accept: "Coal types", "Name of coal", "Coal" Accept: "Type" <u>IF</u> all data includes "coal" eg anthracite <u>coal</u> Both other headings must be in full – "Moisture content %", "Heat output kW/kg" Missing heading – discount all data in that column
	12 correct pieces of data		2 marks		
	8-11 correct pieces of data		1 mark		
	-1 mark if coal not first heading				
	-1 mark if no units				

				Space for Notes	
10	(a)	Four chains with arrows	3 marks	PS3	<p>Note: Seaweed → winkle → crab → octopus will appear as an “extra” chain</p> <p>Note: If chain 3 is omitted, answer will appear as 2 webs – still gets 2 marks (max)</p>
		Four chains with links	2 marks		
		Three chains with arrows	2 marks		
		Three chains with links	1 mark		
		Two chains with arrows	1 mark		
	Ignore additional arrow from seaweed to winkle Additional incorrect arrow -1 mark per arrow up to maximum of 3				
	(b)	Increase	(idea of)	KU1	
	(c)	Decrease	(idea of)	KU1	
	(d)	Predators (sea otters), (competition for) space, disease, build up of waste, climate change, loss of habitat		KU1	<p>Not food, prey, winkles, oxygen content of water</p> <p>Accept: weather, warmth, temperature, flow rate, pH of water, depth of water, shelter, moisture</p> <p>Not: hunting, birth/death/age, pollution, population, competition (on its own), water (on its own), environment, oxygen (on its own)</p>
	(e)	Light		KU2	
		Starch	1 mark each		

			Space for Notes
11	(a) Galvanising		KU1
	(b) Crimping		KU1
	(c) Corrosion		KU1
12	<u>Full</u> labels on x-axis including legend (or key) 1 mark scale on y-axis, linear from zero 1 mark <u>All</u> bars (+-1/2 small square) 1 mark		PS3 A correct bar must have correct height <u>and</u> label Tolerance applies <u>only</u> if scale uses full graph paper
13	Strength Idea of sustained exercise Gymnastics (or similar) Yoga, stretching, sit + reach test 1 mark each		KU3 Stamina: idea of exercise for a long <u>time</u> , keep going, not tiring, not stopping <u>Not:</u> running a long <u>way/distance</u> <u>Not:</u> bending, exercise

				Space for Notes
14	(a)	(i) Robber fly	PS1	
		(ii) Black fly	PS1	
	(b)	(i) Robber fly	PS1	<u>Not:</u> bee
		(ii) <u>Idea of learning</u> the stripes/bee will sting eg "thinks it's a bee", "doesn't like stripes", "scared of stripes"	PS1	Cannot gain this mark if b (i) is incorrect
15	(a)	Hydrogen chloride	KU1	
	(b)	Hydrogen cyanide	KU1	
16	(a)	(i) B	KU1	
		(ii) (natural) gas	KU1	
	(b)	Fault (trap)	KU1	

			Space for Notes	
17	170	2 marks	PS2	Working: 6 × 25 <u>and</u> 4 × 5 1 mark 150 <u>and</u> 20 1 mark
	Correct working but wrong total	1 mark		
18	(a)	Food	KU1	
	(b)	Water	KU1	
19	(a)	(i) Bitumen	KU1	
		(ii) Naphtha	KU1	
	(b)	B Paraffin is less flammable than petrol	KU1	Cancelling errors
20	(a)	A and C	PS1	
	(b)	If <u>type</u> of leaf/ <u>shape</u> of leaf/ <u>type of plant</u> (affects how quickly water evaporates from a leaf)	PS1	Accept: different leaves/plants Not: What leaf works best Which leaf evaporates most (ie vague answers) (leaf or plant) Ignore: references to dark and/or windy conditions

			Space for Notes
24	<p><u>Poor</u> thermal conductivity</p> <p>Good wear resistance</p>	KU2	
25	(C) B A D	PS1	
26	(a) Alloy	KU1	
	<p>(b) (i) Any two from</p> <ul style="list-style-type: none"> • As temperature increases, the energy (needed to heat the solder) increases (or vice versa) • As % of tin increases, the energy (needed to heat the solder) increases (or vice versa) • As % of lead decreases, the energy (needed to heat the solder) increases (<u>or vice versa</u>) • (For a certain increase in temperature), 60% tin/40% lead need more energy (or vice versa) or the more tin, the more energy • As % tin decreases, the temperature increases (for the same energy supplied) • As % lead increases, the temperature increases (for the same energy supplied) <p>1 mark each</p>	PS2	<p>Accept: kJ for energy</p> <p>Not: The more tin, the less lead Tin needs more energy than lead “Heat” for energy or temperature</p>
	(ii) Any value between 2.0 and 2.7	PS1	

			Space for Notes	
27	Label on y-axis + unit Scales on both axes Points plotted and joined	1 mark 1 mark 1 mark	PS3	y-axis: <u>Full</u> label and unit as in table scaled: linear, from zero points + line: all correct ± ½ sq only if full scale must be joined to (0,0) bar chart: 1 mark max for y-axis label and unit Accept <u>one</u> zero value entered on scale(s) at origin

[END OF MARKING INSTRUCTIONS]