



Cambridge Lower Secondary Checkpoint

SCIENCE

1113/02

Paper 2

October 2020

MARK SCHEME

Maximum Mark: 50

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Markers were instructed to award marks. It does not indicate the details of the discussions that took place at a Markers' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the End of Series Report. Cambridge will not enter into discussions about these mark schemes.

This document has **14** pages. Any blank pages are indicated.

Question	Answer	Marks	Further Information
1 (a)(i)	A has 6 legs / 1 pair of antennae / 3 body parts (head, thorax, abdomen) / has wings	1	must have letter and reason Accept three pairs of legs
(ii)	B has 8 legs	1	must have letter and reason Accept two body parts / two segments Accept four pairs of legs
(b)	D no jointed legs / body is not segmented	1	must have letter and reason Accept no exoskeleton

Question	Answer	Marks	Further Information
2 (a)	<p>The particles of the gas expand to fill the space. <input type="checkbox"/></p> <p>The particles of the gas get bigger. <input type="checkbox"/></p> <p>The particles of the gas hit the surface of the balloon more often. <input checked="" type="checkbox"/></p> <p>The particles of the gas slow down. <input type="checkbox"/></p>	1	if more than one tick = 0 marks
(b)(i)	81 to 82 (°C)	1	
(ii)	freezing	1	Accept solidification / solidifying / freeze
(iii)	60 (°C)	1	
Question	Answer	Marks	Further Information
3	<p>When particles are involved the processes are conduction and convection.</p> <p>When electromagnetic waves are involved the process is radiation.</p>	2	<p>each correct sentence = 1 mark</p> <p>either order</p>

Question	Answer	Marks	Further Information
4	coal crude oil / petroleum propane / LPG	1	if more than 3 answers = 0 marks Note oil is not sufficient as it could be sunflower oil

Question	Answer	Marks	Further Information
5	During adolescence the human body begins to change. Both sexes begin to grow body hair . This is due to the increased amount of hormones made by the sex organs. On average, females become sexually mature earlier than males.	3	each correct answer = 1 mark

Question	Answer					Marks	Further Information
6 (a)	reaction	temperature at start in °C	temperature at end in °C	temperature change in °C	type of reaction	2	each correct column = 1 mark
	A	20	15	(-5)	(endothermic)		
	B	20	30	(+)10	exothermic		
	C	15	30	(+)15	exothermic		
	D	25	15	−10	endothermic		
(b)	C idea that (C has) the largest temperature change					2	each correct answer= 1 mark

Question	Answer	Marks	Further Information
7	400 × 1.5 (= 1 × weight of Mia) 600 (N)	2	correct answer only = 2 marks

Question	Answer	Marks	Further Information
8 (a)	any two from (idea of) anchorage to absorb water to absorb minerals / salts / nutrients	2	each correct answer = 1 mark Accept to hold plant in ground / prevent uprooting
(b)(i)	any two from to absorb (maximum amount of) light for photosynthesis to make food / make glucose / make carbohydrates	2	each correct answer = 1 mark Accept to absorb (more) carbon dioxide as an extra marking point
(ii)	any two from pollination fertilisation producing seeds for dispersal of offspring / to produce fruits	2	each correct answer = 1 mark Note reproduction is insufficient Accept to get pollen / so insects can reach the reproductive organs Accept seed dispersal / description of seed dispersal = 2 marks

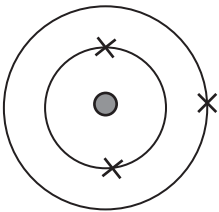
Question	Answer	Marks	Further Information
9 (a)	thermometer	1	
(b)	any one from wear goggles/glasses/tie (long) hair back/(heat proof) gloves/apron or lab coat/standing up/use clamps or equivalent to hold apparatus	1	Accept use tongs to put thermometer into liquid

Question	Answer	Marks	Further Information
10 (a)	pumice (stone) and wood	1	both required for the mark either order
(b)	this time plastic will float sea water has a higher density (than water)	2	each correct answer = 1 mark Accept seawater has greater upthrust than water

Question	Answer	Marks	Further Information
11 (a)	A / produces lots of seeds and C / does not need much water	1	both required for the mark either order
(b)	any two from <u>breed</u> (the selected plants or A and C) together (collect seeds and) grow offspring choose plants with the desired combination of characteristics (idea that) do the process for several generations	2	each correct answer = 1 mark Accept cross pollinate
(c)	selective breeding / <u>artificial</u> selection	1	Do not accept (natural) selection

Question	Answer	Marks	Further Information
12 (a)	rusting	1	Accept oxidation / corrosion / oxidising
(b)	oxygen	1	Accept water (vapour)
(c)	destroys the pipe / the pipe might start to leak	1	Accept weakens pipe / damages pipe / makes pipe brittle / pipe need replacing / wears down the metal Accepts corrodes away the iron Accept contents inside may be contaminated Accept reference to other objects containing iron

Question	Answer	Marks	Further Information
13 (a)	46 (%)	1	Accept any number between 43 (%) and 49 (%)
(b)	biomass geothermal hydroelectric solar <div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;">wind</div>	1	more than one answer circled = 0 marks
(c)	any one from (idea that) running out of non-renewable energy resources / so that non-renewable fuels do not run out renewable energy resources cause little (atmospheric) pollution. renewable energy resources save non-renewable energy resources / renewable fuels save non-renewable fuels	1	Note fuel can be used instead of energy resource throughout the question Accept ora if non-renewable resources specified Accept (more) sustainable Accept less or no pollution with renewable resources

Question	Answer	Marks	Further Information
14 (a)	F	1	Accept Br / I / At
(b)	Mg or Al or Si or P or S or Cl or Ar	1	
(c)	O	1	
(d)		1	<p>Accept dots or circles instead of crosses</p> <p>Ignore distribution of electrons within each shell so long as numbers are correct</p>

Question	Answer	Marks	Further Information
15 (a)	<p>The first scientist to suggest that the planets orbited the Sun.</p> <p>Built a telescope and looked at Jupiter and its moons. This showed that everything does not rotate around the Earth.</p> <p>Galileo Rutherford Copernicus Pasteur Darwin</p>	2	<p>two correct = 2 marks</p> <p>one correct = 1 mark</p> <p>two incorrect lines = 0 marks</p> <p>one incorrect line = max 1 mark</p> <p>Note lines to two scientists means that that the idea is incorrect</p>
(b)	Sun	1	
(c)	Mars and Moon	1	<p>both required for the mark</p> <p>either order</p>

Question	Answer	Marks	Further Information
16 (a)	<p>Aiko must be careful because it is hot.</p> <p>When she removes the copper rod she uses tongs / gloves.</p>	1	<p>both required for the mark</p> <p>Accept copper is a thermal conductor / she may get burnt / the wax might melt onto her hand</p> <p>Accept wooden peg / tweezers / forceps</p>
(b)	spot anomalies / check results / more reliable	1	<p>Accept more valid results / able to calculate an average / to be sure of the results / to see if the results are correct / compare results / more consistent</p> <p>Do not accept fair test</p>