



Pearson
Edexcel

Mark Scheme (Results)

October 2023

Pearson International Primary Curriculum
In Science (JSC11) Paper 01 Year 6
iPrimary: Science Achievement Test

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

October 2023

Question Paper Log Number P75628A

Publications Code JSC11_01_MS_2310

All the material in this publication is copyright

© Pearson Education Ltd 2023

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

SECTION A

Question Number	Answer	Mark
1	<p>The only correct answer is C by water.</p> <p>A is incorrect because whole coconut seeds are not eaten by animals nor stick to animals</p> <p>B is incorrect because there are no pods to explode</p> <p>D is incorrect because coconut seeds are too heavy for wind dispersal</p>	(1)
2	<p>The only correct answer is A metal</p> <p>B is incorrect because paper is an electrical insulator</p> <p>C is incorrect because plastic is an electrical insulator</p> <p>D is incorrect because wood is an electrical insulator</p>	(1)
3	<p>The only correct answer is B because breathing is the ventilation of the lungs</p> <p>A is incorrect because breathing is the ventilation of the lungs</p> <p>C is incorrect because respiration is how oxygen is used by the organs</p> <p>D is incorrect because respiration is how oxygen is used by the organs</p>	(1)
4	<p>The only correct answer is D P is the bulb, Q is the buzzer, R is the cell</p> <p>A is incorrect because P is the bulb, Q is the buzzer, R is the cell</p> <p>B is incorrect because P is the bulb, Q is the buzzer, R is the cell</p> <p>C is incorrect because P is the bulb, Q is the buzzer, R is the cell</p>	(1)
5	<p>The only correct answer is D as yeast is are fungi</p> <p>A is incorrect because bacteria are not fungi</p> <p>B is incorrect because spiders are not fungi</p> <p>C is incorrect because viruses are not fungi</p>	(1)
6	<p>The only correct answer is C sand can flow and take the shape of the bottom of a container</p> <p>A is incorrect because sand does not melt at 0°C</p> <p>B is incorrect because sand does not evaporate</p> <p>D is incorrect because sand does not melt at 0°C</p>	(1)

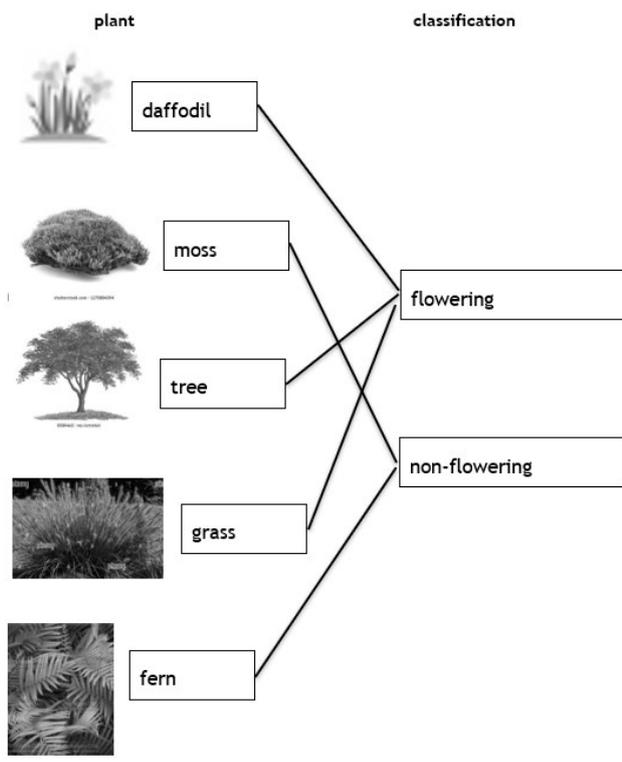
Question Number	Answer	Mark
7	The only correct answer is A , a circle (because the moon is spherical) B is incorrect because the shadow will be a circle C is incorrect because the shadow will be a circle D is incorrect because the shadow will be a circle	(1)
8	The only correct answer is D magnetism A is incorrect because both iron filings and flour are solids B is incorrect because both iron filings and flour are solids C is incorrect because both iron filings and flour are solids	(1)
9	The only correct answer is B it changes direction A is incorrect because light does not change colour when it reflects C is incorrect because light does not change size when it reflects from a flat mirror D is incorrect because light does change direction	(1)
10	The only correct answer is D because a solution is made when a solute dissolves in a solvent A is incorrect because a solvent is not a solution dissolved in a solute B is incorrect because a solution is not made when a solvent dissolves in a solute C is incorrect because a solvent is not made when a solute dissolves in a solution	(1)

Question Number	Answer	Additional guidance	Mark
11(a)(i)	seaweed		(1)
11(a)(ii)	turtle or otter		(1)
11(b)	breakdown dead matter (1) release the nutrients (1)	Allow make compost	(2)

Question Number	Answer	Additional guidance	Mark
12	add another cell (to the circuit) or remove the bulb (from the circuit)	Allow make the wires shorter	(1)

Question Number	Answer	Mark
13	<p>The only correct answer is C open the window before touching food</p> <p>A is incorrect because all surfaces should be cleaned before putting food onto them</p> <p>B is incorrect because long hair should be tied back before dealing with food</p> <p>D is incorrect because you should wash your hands before touching food</p>	(1)
14	<p>The only correct answer is B to circulate blood</p> <p>A is incorrect because the function of the heart is not to breathe air</p> <p>C is incorrect because the function of the heart is not to improve fitness</p> <p>D is incorrect because the function of the heart is not to store food</p>	(1)
15	<p>The only correct answer is A J is melting, K is evaporation, L is condensation, M is freezing</p> <p>B is incorrect because J is melting, K is evaporation, L is condensation, M is freezing</p> <p>C is incorrect because J is melting, K is evaporation, L is condensation, M is freezing</p> <p>D is incorrect because J is melting, K is evaporation, L is condensation, M is freezing</p>	(1)
16	<p>The only correct answer is C damp and warm</p> <p>A is incorrect because seeds do not germinate well in the cold</p> <p>B is incorrect because seeds need moisture to germinate</p> <p>D is incorrect because seeds need moisture and warmth to germinate well</p>	(1)

Question Number	Answer	Mark
17	<p>The only correct answer is B, letter N because the arrow is the longest</p> <p>A is incorrect because M is not the longest arrow</p> <p>C is incorrect because P is not the longest arrow</p> <p>D is incorrect because R is not the longest arrow</p>	(1)
18	<p>The only correct answer is D, the fallen tree trunk is a microhabitat</p> <p>A is incorrect because the desert is a large habitat</p> <p>B is incorrect because the ocean is a large habitat</p> <p>C is incorrect because grassland is a large habitat</p>	(1)
19	<p>The only correct answer is C evaporation occurs at W</p> <p>A is incorrect because evaporation occurs at W and not condensation</p> <p>B is incorrect because evaporation occurs at W and not decomposition</p> <p>D is incorrect because evaporation occurs at W and not precipitation</p>	(1)

Question Number	Answer	Additional Guidance	Mark
<p>20(a)</p>	<p style="text-align: center;">plant classification</p> 	<p>2 marks for all 5 correct, 1 mark for any 3 or 4 correct</p>	<p>(2)</p>
<p>20(b)</p>	<p>Any two of</p> <p>so new plants grow further away from the parent (1)</p> <p>to gain enough water / light / nutrients (to grow) (1)</p> <p>to reduce competition (for light / water / nutrients) (1)</p>	<p>1 mark for each correct response to a max. of 2</p> <p>Allow to grow somewhere else</p> <p>Allow space (to grow) / new places to grow</p>	<p>(2)</p>

Question Number	Answer	Additional Guidance	Mark															
21	<table border="1"> <thead> <tr> <th>Change</th> <th>Reversible</th> <th>Irreversible</th> </tr> </thead> <tbody> <tr> <td>burning a wax candle</td> <td></td> <td>✓</td> </tr> <tr> <td>melting ice</td> <td>✓</td> <td></td> </tr> <tr> <td>iron nails rusting</td> <td></td> <td>✓</td> </tr> <tr> <td>baking bread</td> <td></td> <td>✓</td> </tr> </tbody> </table>	Change	Reversible	Irreversible	burning a wax candle		✓	melting ice	✓		iron nails rusting		✓	baking bread		✓	2 marks for all 4 correct, 1 mark for 2 or 3 correct	(2)
Change	Reversible	Irreversible																
burning a wax candle		✓																
melting ice	✓																	
iron nails rusting		✓																
baking bread		✓																

Question Number	Answer	Additional guidance	Mark
22		<p>2 lines – one from the light to the book and the other from the book to the eye (1)</p> <p>arrows in correct direction placed on each line (1)</p> <p>Arrows must be present on both lines, but can be located anywhere along the line</p> <p>Ignore angles</p>	(2)

Question Number	Answer	Mark
23	<p>The only correct answer is B as force is measured in Newtons</p> <p>A is incorrect because length is not measured in Newtons</p> <p>C is incorrect because temperature is not measured in Newtons</p> <p>D is incorrect because volume is not measured in Newtons</p>	(1)
24	<p>The only correct answer is B because P is the ovary, Q is the anther and R is the sepal</p> <p>A is incorrect because P is the ovary, Q is the anther and R is the sepal</p> <p>C is incorrect because P is the ovary, Q is the anther and R is the sepal</p> <p>D is incorrect because P is the ovary, Q is the anther and R is the sepal</p>	(1)
25	<p>The only correct answer is C, pollination</p> <p>A is incorrect because flowering does not occur immediately before fertilisation</p> <p>B is incorrect because germination does not occur immediately before fertilisation</p> <p>D is incorrect because seed dispersal does not occur immediately before fertilisation</p>	(1)

Question Number	Answer	Additional guidance	Mark
26(a)	<p>The only correct answer is A because there is less of the tyre in contact with the ground so reducing friction</p> <p>B is incorrect because there is a lot of the tyre in contact with the ground causing greater friction</p> <p>C is incorrect because there is a lot of the tyre in contact with the ground causing greater friction</p> <p>D is incorrect because there is a lot of the tyre in contact with the ground causing greater friction</p>		(1)

26(b)	wear a streamlined helmet (1) to reduce air resistance (1) OR make his body more horizontal / streamlined / wear more streamlined clothing (1) to reduce air resistance (1) OR use a lighter bike (1) to reduce energy to move the bike (less bike to propel forward) (1) OR oil his chain (1) to reduce friction between chain and cog (1)	Allow cyclist must be streamlined for 1 mark only Ignore any reference to wheels or tyres, this was part of (a)	(2)
--------------	---	--	------------

Question Number	Answer	Additional guidance	Mark
27	the water was pulled up the stems to the leaves / the water moved up the stem to the leaves / the water moves to the leaves	Needs to be some idea of movement of the water Allow blue water is absorbed / taken in by the plant	(1)

Question Number	Answer	Additional Guidance	Mark
28	The <u>nearer to</u> / further from the Sun the planet is the <u>shorter</u> / longer the length of the year on the planet. OR The nearer to / <u>further from</u> the Sun the planet is the shorter / <u>longer</u> the length of the year on the planet.		(1)

Question Number	Answer	Additional guidance	Mark
29	<p>Any 2 from</p> <p>(tomatoes in Area 1 did not grow as well because)</p> <p>did not receive as much (sun)light (1)</p> <p>did not receive as much rainfall / water (1)</p> <p>did not get as many nutrients (1)</p> <p>because they were shaded by the tree / trees are so close / shared nutrients or water with the tree (1)</p>	<p>Accept reverse arguments</p> <p>Should be comparative or indicate 'a lot' available in Area 2.</p>	(2)

Question Number	Answer	Additional guidance	Mark
30	<p>Either</p> <p>M1 neither (bulb and motor) will work</p> <p>M2 if the switch is open / off</p> <p>OR</p> <p>M1 both (bulb and motor) will work</p> <p>M2 if the switch is closed / on</p>	<p>M2 dependent on M1</p> <p>M2 dependent on M1</p> <p>Allow the circuit is in series (M1)</p> <p>so they turn on and off together (M2)</p> <p>If neither M1 or M2 scored, allow 1 mark for the idea that the switch controls the circuit.</p>	(2)

Question Number	Answer	Additional guidance	Mark
31	<p>Either</p> <p>bubbles/foam (1)</p> <p>OR</p> <p>a new product has been formed (1)</p>	<p>Allow any reference to carbon dioxide</p> <p>Allow fizzes / fizzing /fizz for bubbles</p> <p>Ignore mixture or dissolving</p>	(1)

Question Number	Answer	Additional guidance	Mark
32	<p>Any 2 of</p> <p>crush the crystal / use smaller pieces (1)</p> <p>heat the water (1)</p> <p>stir the mixture faster / more frequently (1)</p>	<p>Allow increase water volume</p>	(2)

SECTION B

Question Number	Answer	Additional guidance	Mark												
33(a)	stopwatch / stop clock (1)	Allow clock /timer/watch Do not accept additional items e.g. ruler	(1)												
33(b)	Any two from the following: use the same size ball (1) use the same volume of liquid (or water) / use 500 cm ³ (1) drop the ball from the same height / place (1) start the timer as the ball is dropped / stop timing as the ball hits the bottom of the measuring cylinder (1)	Allow Use same ball / same mass of ball /same shape	(2)												
33(c)	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">Tick (✓)</th> </tr> </thead> <tbody> <tr> <td>release the ball from a greater height</td> <td></td> </tr> <tr> <td>repeat the investigation</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>use more liquids</td> <td></td> </tr> <tr> <td>use different sized measuring cylinders</td> <td></td> </tr> </tbody> </table>		Tick (✓)	release the ball from a greater height		repeat the investigation	✓	use more liquids		use different sized measuring cylinders			(1)		
	Tick (✓)														
release the ball from a greater height															
repeat the investigation	✓														
use more liquids															
use different sized measuring cylinders															
33(d)	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Question</th> <th style="text-align: center;">Yes</th> <th style="text-align: center;">No</th> </tr> </thead> <tbody> <tr> <td>Does the time of day affect how fast the ball sinks?</td> <td></td> <td style="text-align: center;">✓</td> </tr> <tr> <td>Does the shape of an object affect how fast it sinks?</td> <td style="text-align: center;">✓</td> <td></td> </tr> <tr> <td>Does the temperature of the liquid affect how fast the ball sinks?</td> <td style="text-align: center;">✓</td> <td></td> </tr> </tbody> </table>	Question	Yes	No	Does the time of day affect how fast the ball sinks?		✓	Does the shape of an object affect how fast it sinks?	✓		Does the temperature of the liquid affect how fast the ball sinks?	✓		All three ticks required for the mark	(1)
Question	Yes	No													
Does the time of day affect how fast the ball sinks?		✓													
Does the shape of an object affect how fast it sinks?	✓														
Does the temperature of the liquid affect how fast the ball sinks?	✓														

Question Number	Answer	Additional guidance	Mark												
34(a)	<table border="1"> <thead> <tr> <th>Variable</th> <th>Variable changed</th> <th>Variable controlled</th> </tr> </thead> <tbody> <tr> <td>the temperature the dishes are kept at</td> <td>✓</td> <td></td> </tr> <tr> <td>the time the seedlings grow for</td> <td></td> <td>✓</td> </tr> <tr> <td>the number of seeds in a dish</td> <td></td> <td>✓</td> </tr> </tbody> </table>	Variable	Variable changed	Variable controlled	the temperature the dishes are kept at	✓		the time the seedlings grow for		✓	the number of seeds in a dish		✓	All three correct for 1 mark	(1)
Variable	Variable changed	Variable controlled													
the temperature the dishes are kept at	✓														
the time the seedlings grow for		✓													
the number of seeds in a dish		✓													
34(b)	to take/ record the temperature (of each dish)		(1)												
34(c)	ruler B (1) because it measures to a greater accuracy / to the nearest millimetre (1)	Allow it has decimals, it has decimal points, it has more measurements, it has more units. No marks if state A or C	(2)												

Question Number	Answer	Additional guidance	Mark
35(a)	it is insoluble (at all temperatures) (1)	Allow solubility does not change / solubility is low compared to A and B	(1)
35(b)(i)	plotted correctly 140 g at 70 °C (1)		(1)
35(b)(ii)	curved line of best fit drawn (1)	Do not accept if clearly drawn with a ruler Ignore extrapolation below 10.	(1)

35(b)(iii)	read from candidate graph, should be approximately 40 (g)	If no line drawn in (ii), this mark cannot be awarded	(1)
35(c)	<p>Any two from the following</p> <p>(Solid A) – how much dissolves/solubility increases/changes as temperature increases/changes OWTTE (1)</p> <p>(Solid B) - as temperature increases /changes there is a (small) change in how much dissolves OWTTE (1)</p> <p>no two solids have the same amount dissolved (at any temperature) (1)</p> <p>numerical example e.g. at 10 °C about 40g of solid B dissolved, but about 20g (half as much) of solid A dissolved (1)</p>		(2)

