

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Centre Number

Candidate Number

Pearson Edexcel International Award in Primary

Friday 2 June 2023

Morning (Time: 1 hour)

Paper
reference

JSC11/01

Science

Year 6

Achievement Test iPrimary

You must have:

Ruler
Calculator

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches/graphs it must be dark (HB or B).
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 60.
- The paper is divided into two sections, Section A and Section B.
- The total mark for Section A is 45.
- The total mark for Section B is 15.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- Candidates may use a calculator.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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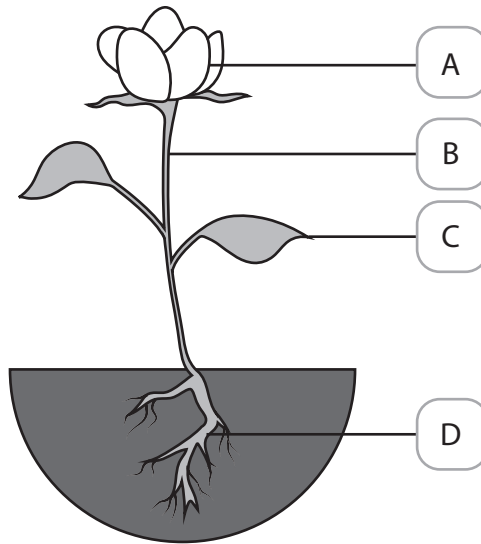

Pearson

SECTION A

Answer ALL questions.

For Questions 1–10 put a cross in one box to indicate your answer.
If you change your mind, put a line through the box and then put a cross in another box .
Each question is worth one mark.

1 The diagram shows a flowering plant.



Which part of the plant is the leaf?

- A
- B
- C
- D

(Total for Question 1 = 1 mark)

2 A room is dark at night.

Why is the room dark?

- A there is an absence of air
- B there is an absence of light
- C there is an absence of movement
- D there is an absence of sound

(Total for Question 2 = 1 mark)

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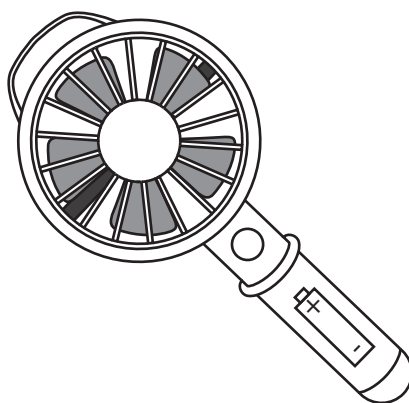
3 Some solid materials can behave like a liquid.

Which of these can behave like a liquid?

- A a block of concrete
- B a heap of sand
- C a piece of plasticine
- D a piece of wood

(Total for Question 3 = 1 mark)

4 The picture shows a battery-operated fan.



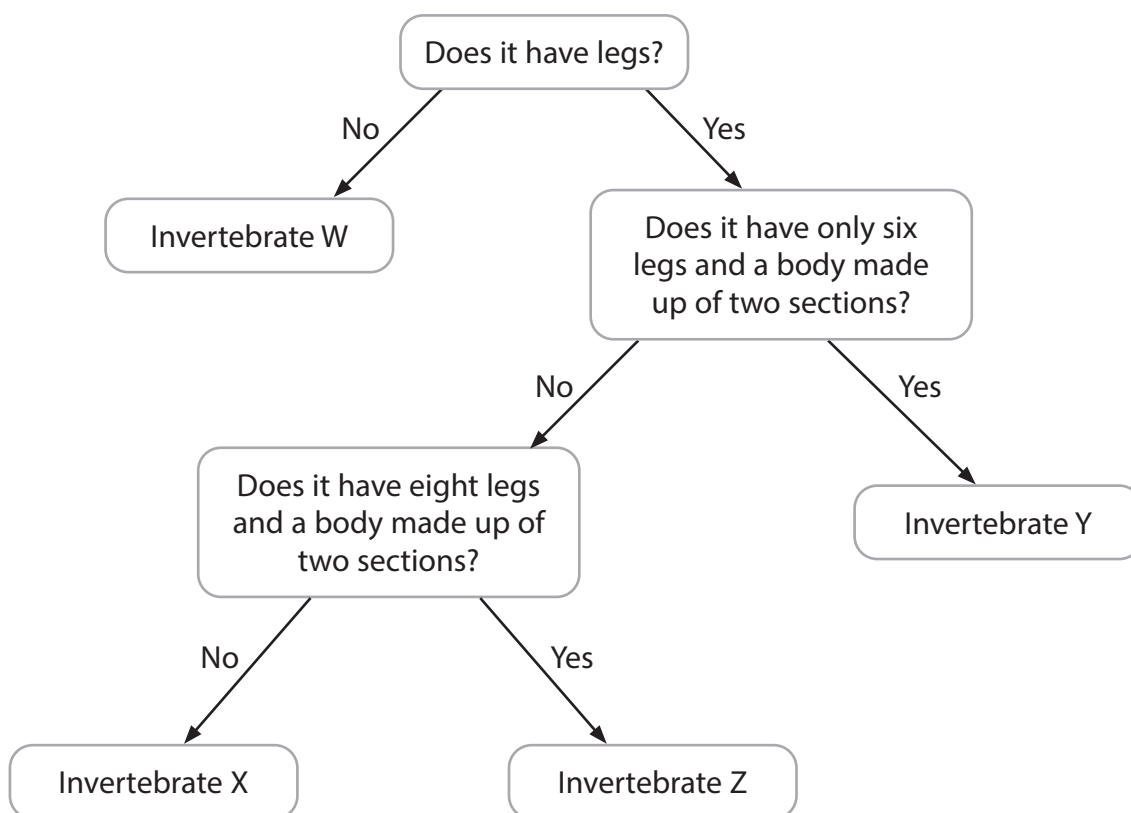
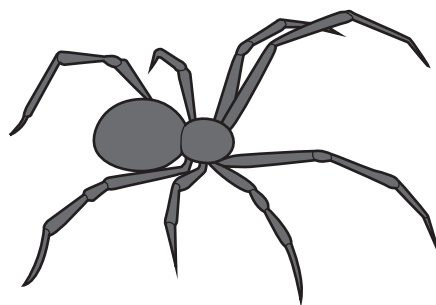
Which diagram represents the electrical circuit used in this fan?

- A A circuit diagram showing a battery at the top, a lamp (represented by a circle with an 'X') at the bottom, and a switch on the right side.
- B A circuit diagram showing a battery at the top, a bell (represented by a semi-circle) at the bottom, and a switch on the right side.
- C A circuit diagram showing a battery at the top, a motor (represented by a circle with an 'M') at the bottom, and a switch on the right side.
- D A circuit diagram showing a battery at the top, two switches on the bottom and right sides, and a wire connecting the bottom switch back to the battery.

(Total for Question 4 = 1 mark)



- 5 The diagram shows an animal that is from a group called invertebrates and a key that can be used to identify four invertebrates, W, X, Y and Z.



Which invertebrate is the animal in the diagram?

- A invertebrate W
- B invertebrate X
- C invertebrate Y
- D invertebrate Z

(Total for Question 5 = 1 mark)



6 Changes to substances can be reversible or irreversible.

Which row shows two changes that are both irreversible?

- A bread cooking wood burning
- B bread cooking ice melting
- C water boiling wood burning
- D ice melting water boiling

(Total for Question 6 = 1 mark)

7 Which row contains three objects that are **all** sources of light?

- A candle star torch
- B candle moon torch
- C mirror moon star
- D mirror star torch

(Total for Question 7 = 1 mark)

8 Which of these uses electricity to produce useful sound?

- A a fan
- B a kettle
- C a lamp
- D a radio

(Total for Question 8 = 1 mark)

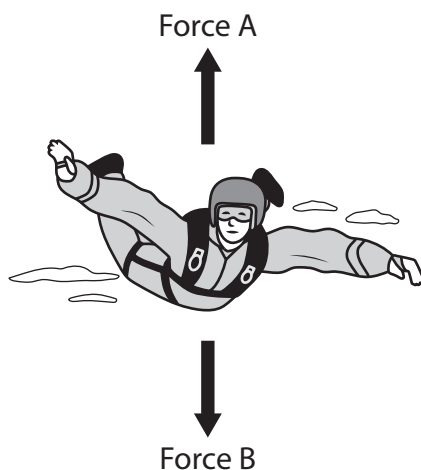
9 Which organ pumps blood around the body?

- A the brain
- B the heart
- C the lungs
- D the stomach

(Total for Question 9 = 1 mark)



10 The diagram shows two forces, A and B, acting on a skydiver falling to Earth.



(a) (i) Which statement about these two forces is correct? (1)

- A** the forces are the same size and act in opposite directions
- B** the forces are the same size and act in the same direction
- C** the forces are different sizes and act in opposite directions
- D** the forces are different sizes and act in the same direction

(ii) Name the two forces, A and B, acting on the skydiver. (2)

Force A

Force B

(Total for Question 10 = 3 marks)







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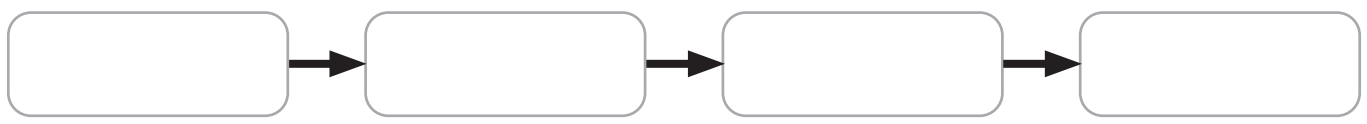
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11 The table shows how four organisms obtain energy.

Organism	How the organism obtains energy
 frog	eats snails
 lettuce	makes own food
 snail	eats plants
 snake	eats frogs

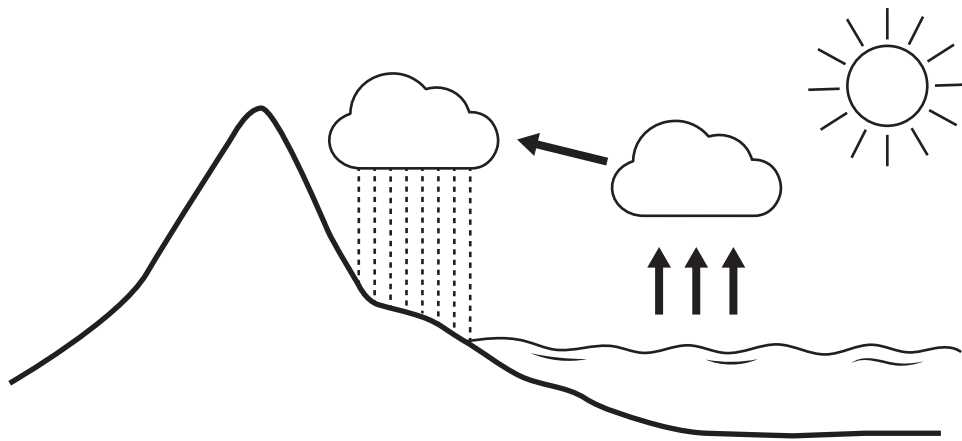
Use the information in the table to complete a food chain linking the four organisms.



(Total for Question 11 = 2 marks)



12 The diagram shows the water cycle.



Use words from the box to complete the sentences about the water cycle.

condensing freezing heating melting precipitating

The sun is the sea, producing water vapour.

The water vapour is rising into the atmosphere, cooling and

..... to form clouds.

(Total for Question 12 = 1 mark)

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For Questions 13–18 put a cross in one box to indicate your answer.

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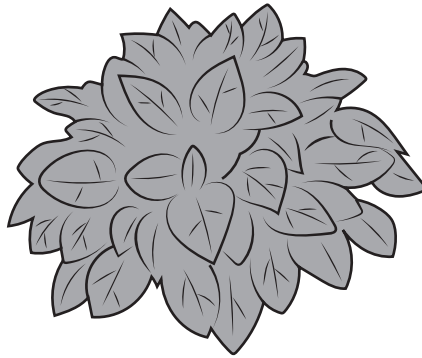
Each question is worth one mark.

13 What is the symbol for the unit of force?

- A cm
- B °C
- C kg
- D N

(Total for Question 13 = 1 mark)

14 The picture shows a growing plant.



Which are the best conditions for a plant to grow well?

- A light and no water
- B light and water
- C no light and no water
- D no light and water

(Total for Question 14 = 1 mark)

15 Water is a liquid that when heated changes into steam, which is a gas.

Which statement about water changing into steam is correct?

- A there is a change of state and a new substance is formed
- B there is a change of state and no new substance is formed
- C there is no change of state and a new substance is formed
- D there is no change of state and no new substance is formed

(Total for Question 15 = 1 mark)

16 The air in the Earth's atmosphere is made up of a mixture of gases.

Which row gives three of the gases found in air?

- | | | | | |
|--------------------------|---|--------|----------|----------------|
| <input type="checkbox"/> | A | soil | oxygen | water |
| <input type="checkbox"/> | B | oxygen | nitrogen | carbon dioxide |
| <input type="checkbox"/> | C | sand | soil | oxygen |
| <input type="checkbox"/> | D | water | nitrogen | sand |

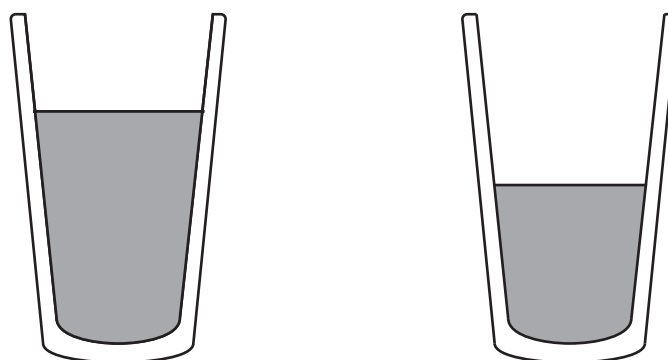
(Total for Question 16 = 1 mark)

17 Which of these involves ventilation?

- A breathing
- B circulation
- C fertilisation
- D respiration

(Total for Question 17 = 1 mark)

18 The diagram shows the amount of water in a glass before and after it is left in a warm room for a few days.



Before

After

What is the reason for the change in the amount of water in the glass?

- A water has condensed
- B water has evaporated
- C water has melted
- D water has frozen

(Total for Question 18 = 1 mark)



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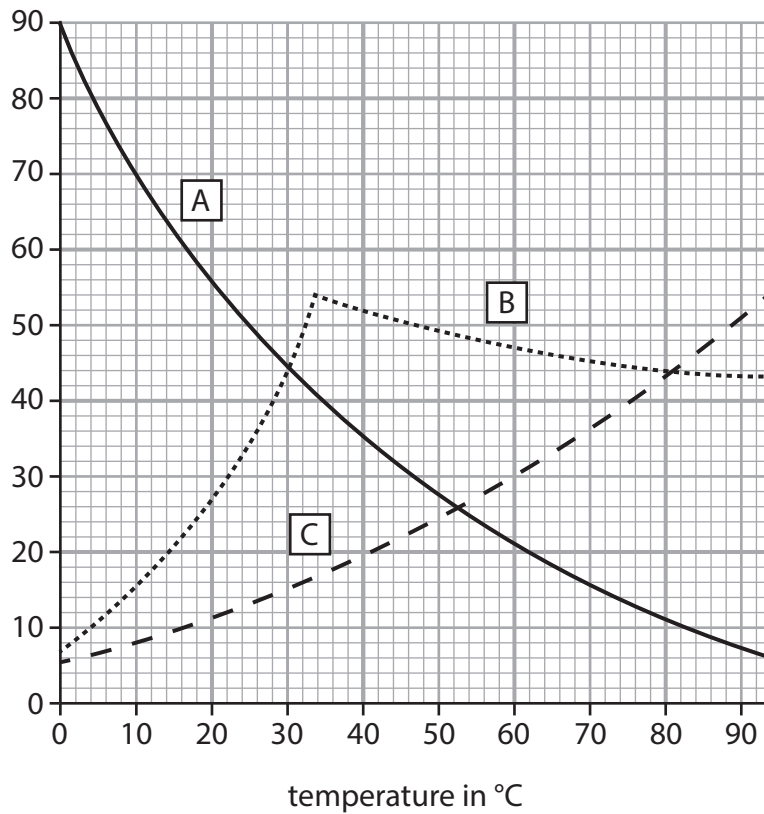
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P 7 2 5 8 9 A 0 1 1 3 2

19 The graph shows the mass of three different substances, A, B and C, that dissolves in 100 cm³ of water at different temperatures.

mass in g of substance that dissolves in 100 cm³ of water



Key

- = A
- = B
- - - = C

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Draw **one** straight line from each substance to the correct conclusion that can be made from the graph.

Substance

Conclusion from the graph

A ●

B ●

C ●

● as the temperature increases, the mass of the substance that dissolves increases and then decreases

● as the temperature increases, the mass of the substance that dissolves always increases

● as the temperature increases, the mass of the substance that dissolves stays the same

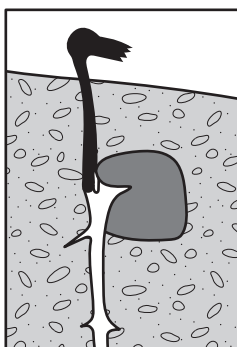
● as the temperature increases, the mass of the substance that dissolves always decreases

(Total for Question 19 = 2 marks)



20 The diagram shows a seed germinating in soil.

Water is required for the successful germination of a seed.



(a) State **one** other condition required for the successful germination of a seed.

(1)

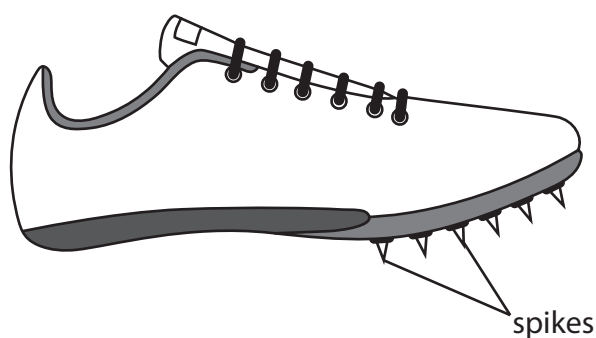
(b) Once the seed has germinated it develops a stem and a root. The stem grows towards the light and the root spreads into the soil.

Give a reason why the root spreads into the soil.

(1)

(Total for Question 20 = 2 marks)

21 The diagram shows a running shoe used by athletes who are sprinters.



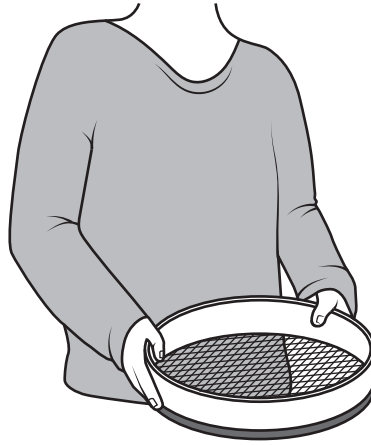
Explain how the spikes help the athlete when sprinting.

(Total for Question 21 = 2 marks)



For Questions 23–26 put a cross in one box ☒ to indicate your answer.
If you change your mind, put a line through the box ☒ and then put a cross in another box ☒.
Each question is worth one mark.

- 23 The diagram shows the equipment a student uses to separate a mixture of stones and sand.



Which separation technique is the student using?

- A dissolving
- B evaporating
- C filtering
- D sieving

(Total for Question 23 = 1 mark)

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24 The diagram shows a student exercising.

The student has a normal pulse rate before starting to exercise.



After 15 minutes the student stops exercising.

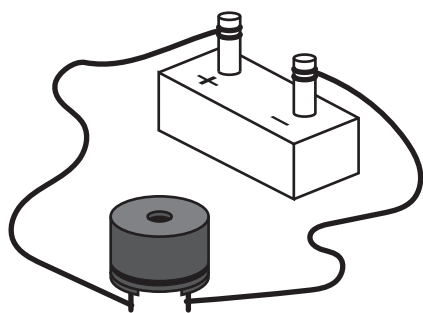
Which statement describes what happens to the student's pulse rate after stopping exercising?

- A pulse rate decreases to the normal pulse rate
- B pulse rate decreases and then increases
- C pulse rate increases to the normal pulse rate
- D pulse rate does not change

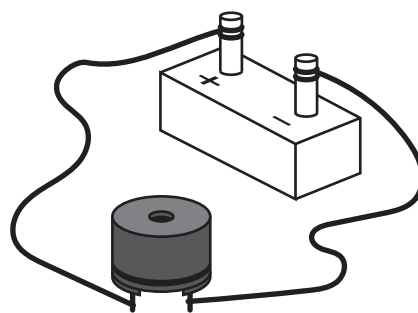
(Total for Question 24 = 1 mark)



25 The diagram shows two electrical circuits, A and B. Each circuit has a cell connected to an identical buzzer.



circuit A



circuit B

The buzzer in circuit A is louder than the buzzer in circuit B.

Which is the correct reason why the buzzer in circuit A is louder?

- A the voltage in circuit A and in circuit B is zero
- B the voltage in circuit A is greater than the voltage in circuit B
- C the voltage in circuit A is less than the voltage in circuit B
- D the voltage in circuit A is the same as the voltage in circuit B

(Total for Question 25 = 1 mark)

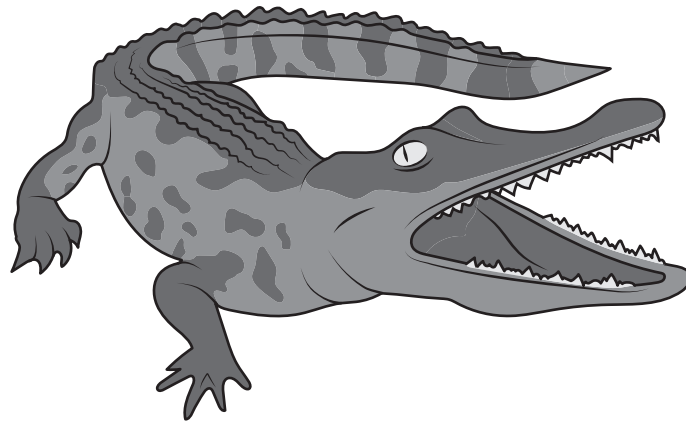
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26 The picture shows a reptile.



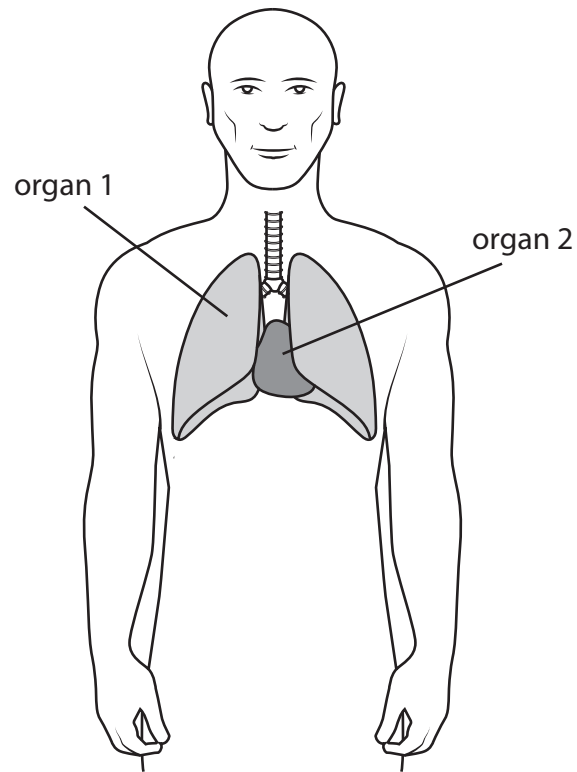
Which row gives three correct characteristics of reptiles?

- | | | | |
|--------------------------|--------------------------|------------------|-------------------------|
| <input type="checkbox"/> | A have feathers | are cold blooded | have wings |
| <input type="checkbox"/> | B have a backbone | have dry scales | are cold blooded |
| <input type="checkbox"/> | C live in water | are cold blooded | have soft and damp skin |
| <input type="checkbox"/> | D feed on milk | have fur | are cold blooded |

(Total for Question 26 = 1 mark)



27 The diagram shows the location of two organs in the human body.



Give the name of the region in the human body where organs 1 and 2 are found.

(Total for Question 27 = 1 mark)

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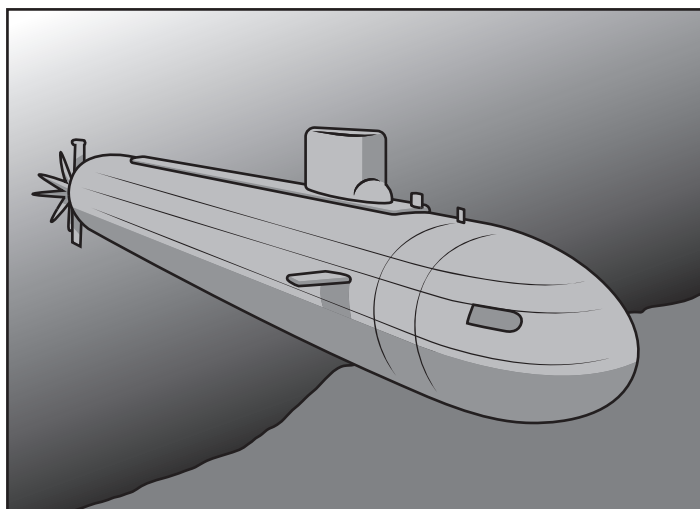


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28 The picture shows a submarine travelling through water.



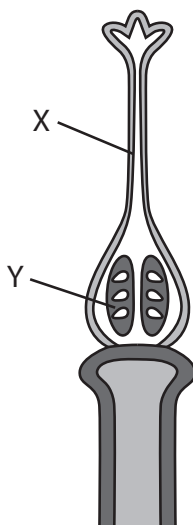
Tick (✓) **two** correct statements about the features of the submarine that help it to travel through the water.

Statement	Tick (✓)
it has a streamlined shape to decrease water resistance	
it has a rough surface to increase water resistance	
it has a streamlined shape to increase water resistance	
it has a smooth surface to decrease water resistance	

(Total for Question 28 = 1 mark)



29 The diagram shows the cross section of a carpel in a flowering plant.



(a) Give the name of the part labelled X.

(1)

(b) State what is produced in the part of the carpel labelled Y.

(1)

(Total for Question 29 = 2 marks)

30 A student stirs some salt in water and observes that the salt disappears.

Use words from the box to complete the sentences about the salt disappearing.

cooking dissolving irreversible reversible rusting

The process involves a change that is

The salt disappears because the salt is in the water.

(Total for Question 30 = 2 marks)



31 The planets Mars, Earth and Venus orbit the Sun.

The further these planets are from the Sun the cooler their surface temperature.

(a) Draw **one** straight line from each planet to the approximate surface temperature of the planet.

(2)

Planet	Surface temperature in °C
Earth	-60
Mars	+500
Venus	+20

(b) The planet Uranus is a distance of approximately 2 900 million kilometres from the Sun.

Predict an approximate value for the distance of the planet Neptune from the Sun.

(1)

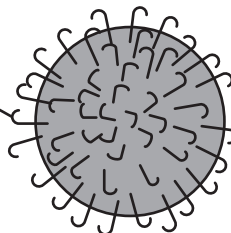
(Total for Question 31 = 3 marks)



32 The picture shows a seed that is adapted to be dispersed by animals.

The seed has spines with small hooks.

spine with
small hook



Explain how this seed is dispersed by animals.

.....

.....

.....

.....

(Total for Question 32 = 2 marks)

TOTAL FOR SECTION A = 45 MARKS

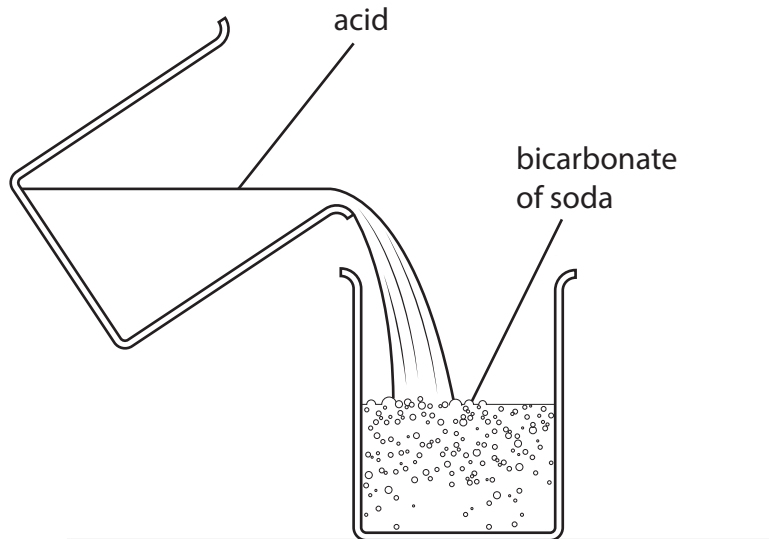


SECTION B

Answer ALL the questions. Write your answers in the spaces provided.

- 33 When an acid and bicarbonate of soda are mixed together new materials are formed including a gas.

The picture shows acid being mixed with bicarbonate of soda and the bubbles of gas that produce a foaming mixture rising up inside the beaker.



A student investigates the height of the foaming mixture that is produced inside the beaker using four different acids, W, X, Y and Z.

The student's investigation involves the following steps.

They are **not** in the correct order.

- Step A** measure the height of the foaming mixture
Step B repeat for acid X, acid Y and acid Z
Step C measure 5 g of bicarbonate of soda and place it in a beaker
Step D pour acid W onto the bicarbonate of soda
Step E measure 50 cm³ of acid W into another beaker

- (a) Write the letters A, C and D in the boxes to complete the correct order of the steps in the investigation.

(2)



(b) Give a reason why the same volume of each acid should be used.

(1)

.....

.....

(c) The table shows the student's results.

	Height of the foaming mixture in cm		
	Test 1	Test 2	Test 3
Acid W	1.4	1.3	1.5
Acid X	2.1	2.0	2.1
Acid Y	5.7	5.6	5.6
Acid Z	3.5	3.6	3.5

Explain why the student does three tests for each acid.

(2)

.....

.....

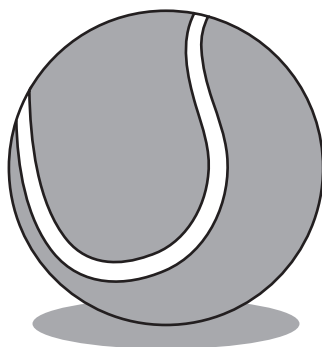
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(Total for Question 33 = 5 marks)



34 A student investigates how high a ball bounces after it has been placed in a freezer, a cold room and outside in the sun.



The student uses the following method.

- Step 1** place the ball in a freezer for 1 hour
- Step 2** remove the ball from the freezer
- Step 3** hold the bottom of the ball 100 cm above the ground
- Step 4** drop the ball
- Step 5** measure how high the ball bounces
- Step 6** repeat the experiment with the ball after it has been in the cold room and then after it has been outside in the sun

(a) (i) Name the piece of equipment used to make the measurements in step 3 and step 5.

(1)

(ii) State **one** thing the student does with the ball to be sure they make systematic and careful observations.

(1)

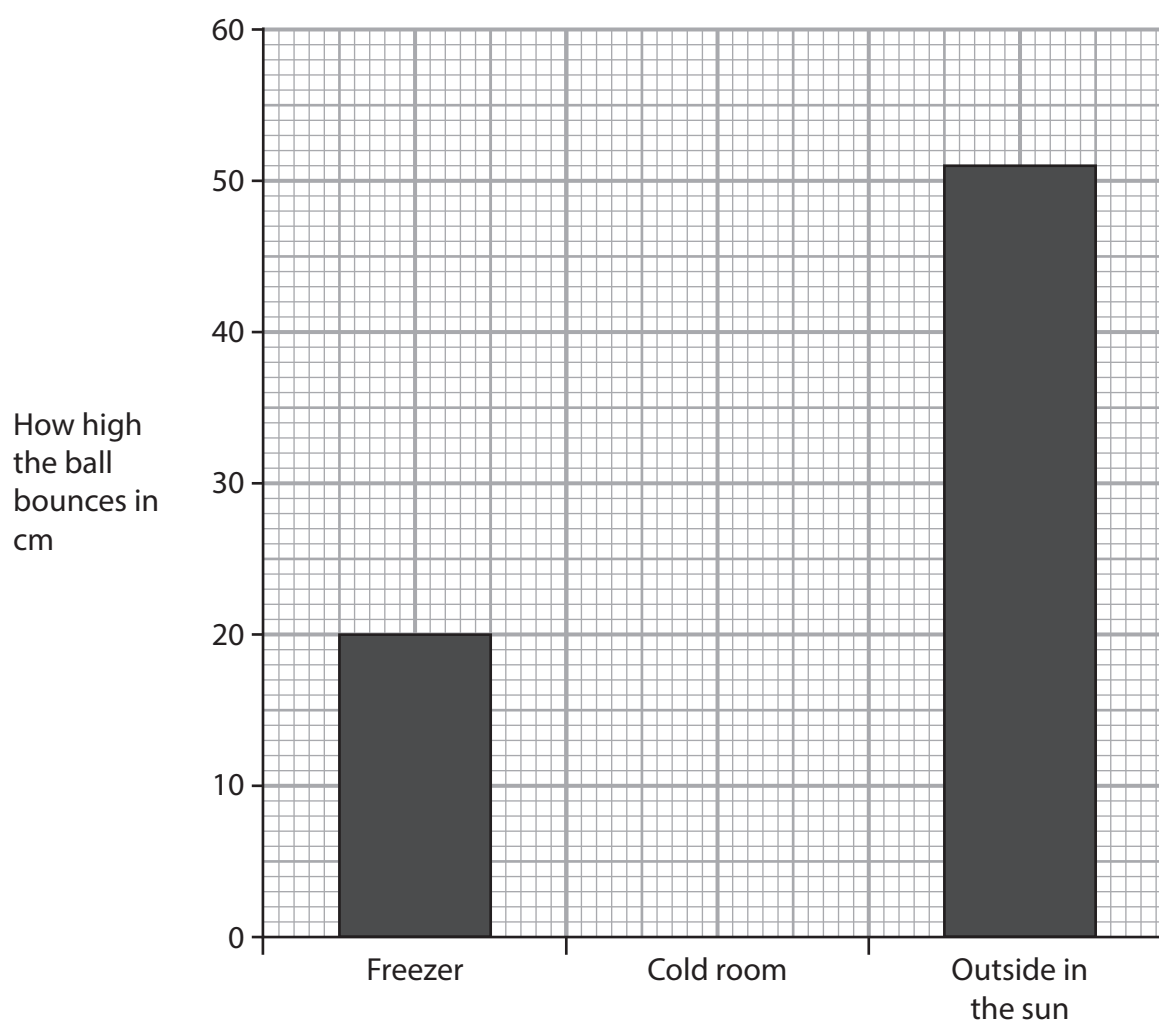
(b) The table shows the student's results.

	How high the ball bounces in cm
Freezer	20
Cold room	26
Outside in the sun	51

The student draws a bar chart of the results.

- (i) Complete the bar chart by drawing the result for how high the ball bounces after it has been placed in a cold room.

(1)



(ii) What conclusion can the student make from their results?

(2)

.....

.....

.....

.....

(Total for Question 34 = 5 marks)

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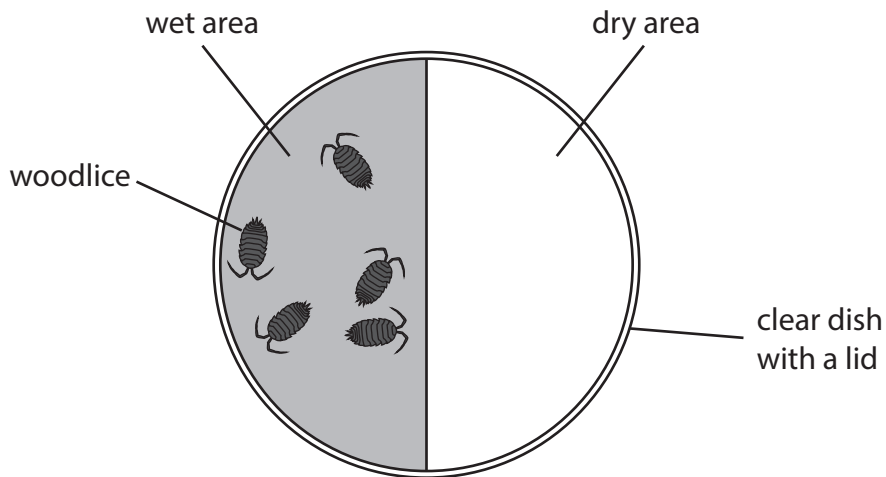
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35 The diagram shows the equipment a student uses to investigate if woodlice prefer a wet environment or a dry environment.



This is the method the student uses.

- Step 1** place three dishes in the same room
- Step 2** place wet tissue paper in one half of each dish leaving the other half of the dish dry
- Step 3** place five woodlice into the centre of each dish
- Step 4** start a stopwatch
- Step 5** after five minutes record the number of woodlice in the wet half of the dish and in the dry half of the dish
- Step 6** return all the woodlice to their normal living environment after the investigation is complete

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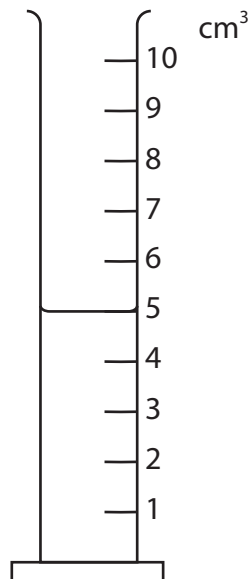
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(a) The student uses a measuring cylinder to measure the volume of water used to make the tissue wet.

What is the volume of water shown in the diagram?

(1)



volume =cm³

(b) The table shows the student's results.

	Number of woodlice	
	in wet half of dish	in dry half of dish
Dish 1	5	0
Dish 2	3	2
Dish 3	4	1

The student concludes that woodlice prefer a wet environment.

Explain how the results support the student's conclusion.

(2)

.....

.....

.....

.....



(c) Give a safety precaution the student should take after handling the woodlice. (1)

(d) Which other scientific questions would it be sensible to test in this investigation?

Tick (✓) the boxes to indicate your answers.

(1)

Scientific question	Yes	No
Do woodlice prefer a dark or a light environment?		
Do woodlice prefer a cold or a warm environment?		
Do woodlice prefer a rough or a smooth surface?		

(Total for Question 35 = 5 marks)

TOTAL FOR SECTION B = 15 MARKS
TOTAL FOR PAPER = 60 MARKS

