Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel International Award in Primary Science

Centre Number	Candidate Number

Time 1 hour

Paper reference **JSC11/01**

Science

Achievement Test iPrimary

You must have:
Ruler

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **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 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.
- Good luck with your examination.

Turn over ▶

P67823A

1/1/1/1/1/1

P 6 7 8 2 3 A 0 1 3 2

Pearson

SECTION A

Answer ALL questions.

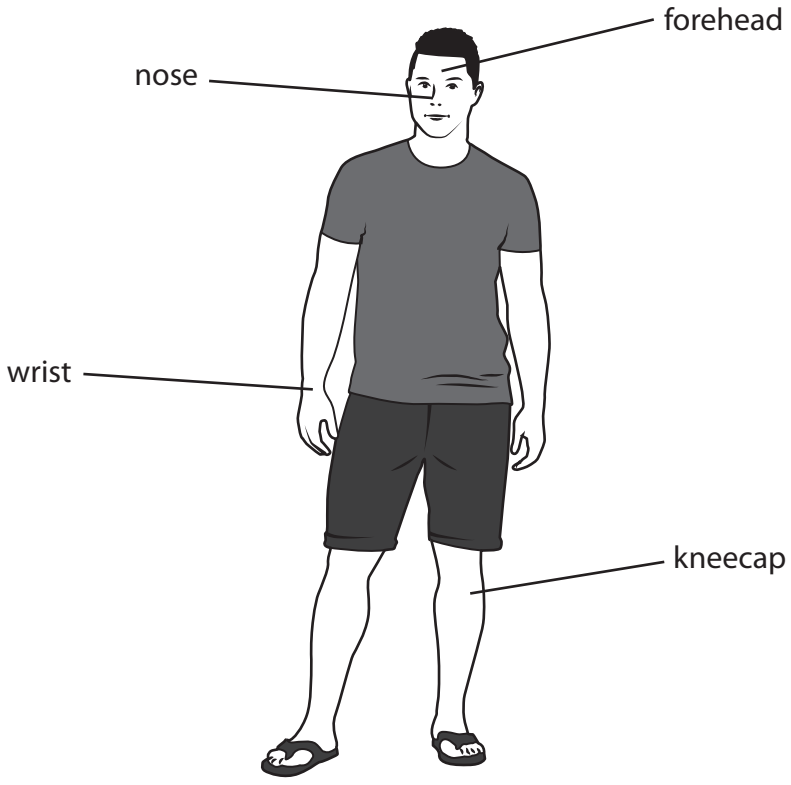
For Questions 1–10 put a cross in one box ☒ to indicate your answer. If you change your mind, put a line through the box ☒ and then put a cross in another box ☒.

1 Which of these mixtures will dissolve completely in water?

- ☒ **A** salt and sugar
- ☒ **B** salt and sand
- ☒ **C** sugar and flour
- ☒ **D** sugar and sand

(Total for Question 1 = 1 mark)

2 The picture shows the human body.

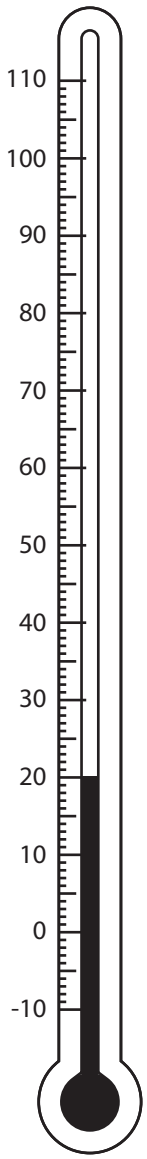


At which part of the body is pulse rate often measured?

- ☒ **A** forehead
- ☒ **B** kneecap
- ☒ **C** nose
- ☒ **D** wrist

(Total for Question 2 = 1 mark)

3 The diagram shows a thermometer. A thermometer is used to measure temperature.

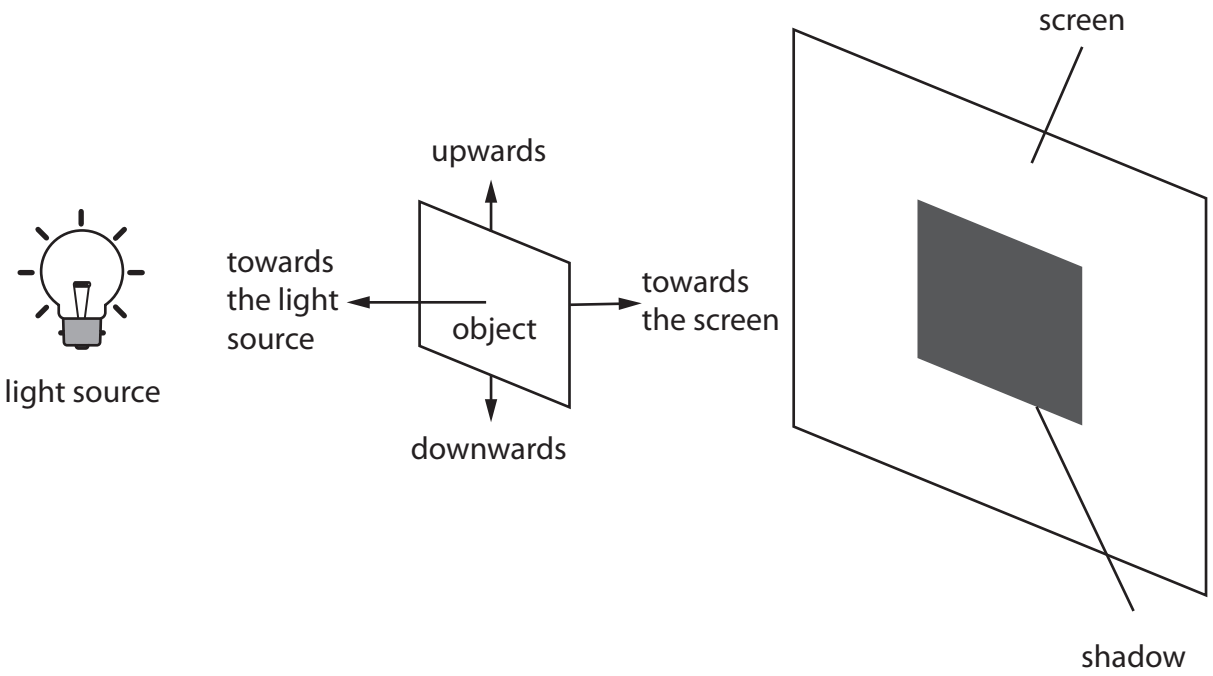


What is the scientific unit for temperature?

- ☒ **A** °C
- ☒ **B** m
- ☒ **C** N
- ☒ **D** s

(Total for Question 3 = 1 mark)

4 The diagram shows an object placed between a light source and a screen. The object casts a shadow on the screen.



Which direction should the object be moved to increase the size of the shadow on the screen?

☒ **A** downwards

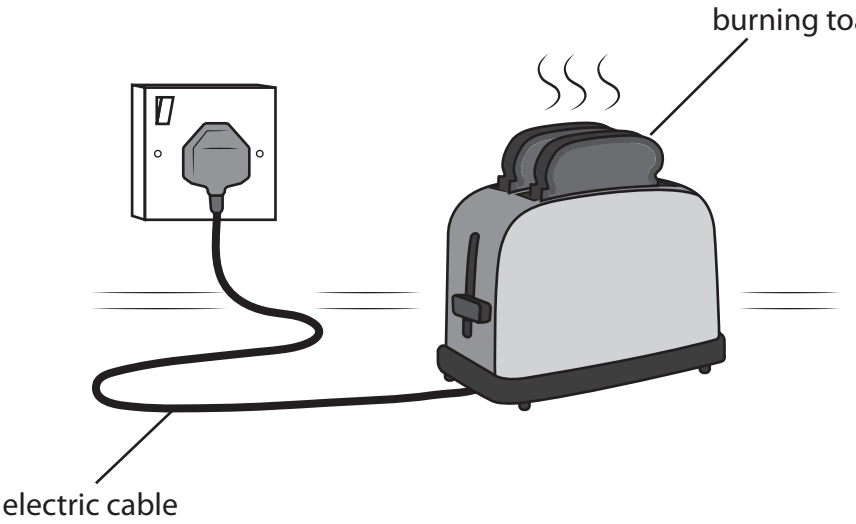
☒ **B** towards the light source

☒ **C** towards the screen

☒ **D** upwards

(Total for Question 4 = 1 mark)

5 The picture shows some burning toast in an electric toaster. The electric toaster is switched on.



Which statement gives sensible safety advice when dealing with the burning toast?

- ☒ **A** cut the electric cable with a pair of scissors
- ☒ **B** pour water on the toaster
- ☒ **C** switch the toaster off
- ☒ **D** use a knife to remove the toast from the toaster

(Total for Question 5 = 1 mark)

6 Which row gives two correct reasons why decomposers are needed in food chains?

		Reason 1	Reason 2
☒	**A**	they release light	to make space for growth
☒	**B**	they release nutrients	they release light
☒	**C**	to make space for growth	they support decay
☒	**D**	they support decay	they release nutrients

(Total for Question 6 = 1 mark)

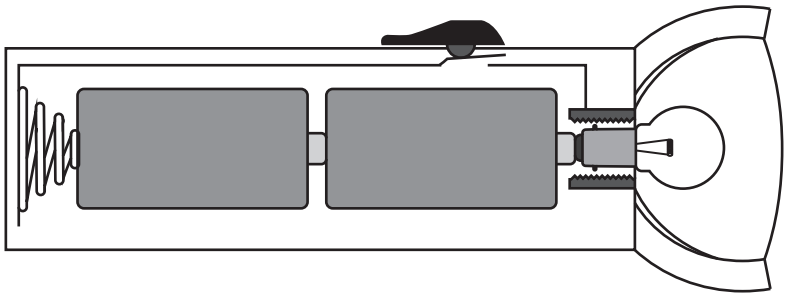
7 A student adds a spoonful of bicarbonate of soda to some acid and observes what happens.

Which statement is correct?

- ☒ **A** bubbles of gas are given off showing that a new material is formed
- ☒ **B** bubbles of gas are given off showing that no new material is formed
- ☒ **C** no bubbles of gas are given off showing that a new material is formed
- ☒ **D** no bubbles of gas are given off showing that no new material is formed

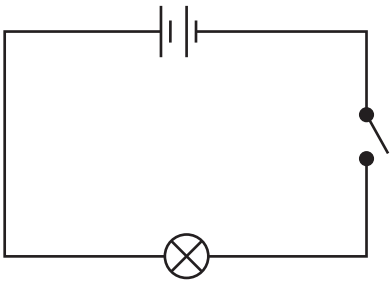
(Total for Question 7 = 1 mark)

8 The diagram shows a torch that is switched off.

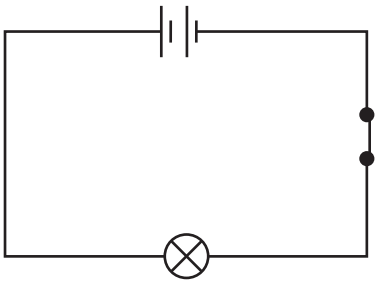


Which is the correct electric circuit diagram when the torch is switched off?

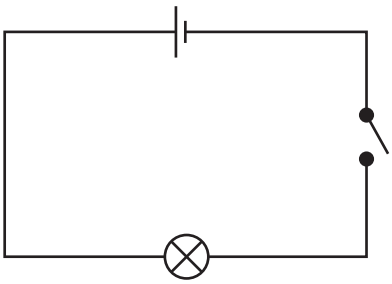
☒ **A**



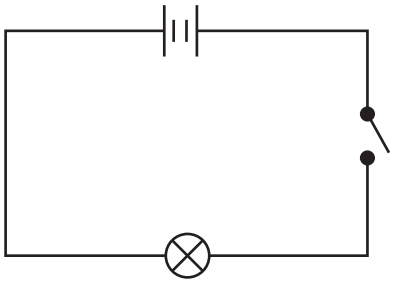
☒ **C**



☒ **B**



☒ **D**



(Total for Question 8 = 1 mark)

9 Plants scatter their seeds to prevent their seedlings competing for the same resources.

Which statement gives the correct reason why plants scatter their seeds?

- ☒ **A** to find new places to grow with nutrients but no water
- ☒ **B** to find new places to grow with nutrients and water
- ☒ **C** to find new places to grow with light but no nutrients
- ☒ **D** to find new places to grow with water but no light

(Total for Question 9 = 1 mark)

10 Which statement about weight is true?

- ☒ **A** it is an area
- ☒ **B** it is a force
- ☒ **C** it is a length
- ☒ **D** it is a volume

(Total for Question 10 = 1 mark)

11 Some types of change are reversible and other types of change are irreversible.

Tick (✓) the correct box for each change in the table below.

	Type of change	
	reversible	**irreversible**
candle burning		
ice melting		
iron rusting		
water boiling		

(Total for Question 11 = 3 marks)

12 The table shows how four organisms get food for energy.

Organism	How the organism gets food for energy
plants	make own food
small birds	eat beetles
slugs	eat plants
beetles	eat slugs

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

The first box has been completed for you.

(Total for Question 12 = 2 marks)

For Questions 13–18 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 ☒.

13 A student investigates the effect of eating an apple on their pulse rate.

The table shows the student's results.

	Pulse rate in beats per minute (bpm)
pulse rate before eating an apple	80
pulse rate after eating an apple	100

Which statement about the results is true?

☒ **A** the pulse rate decreases by 20 bpm

☒ **B** the pulse rate increases by 20 bpm

☒ **C** the pulse rate stays at 80 bpm

☒ **D** the pulse rate stays at 100 bpm

(Total for Question 13 = 1 mark)

14 What change takes place during freezing?

☒ **A** a gas becomes liquid

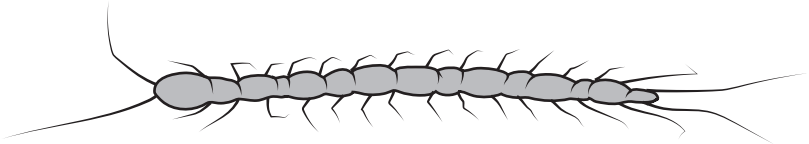
☒ **B** a liquid becomes gas

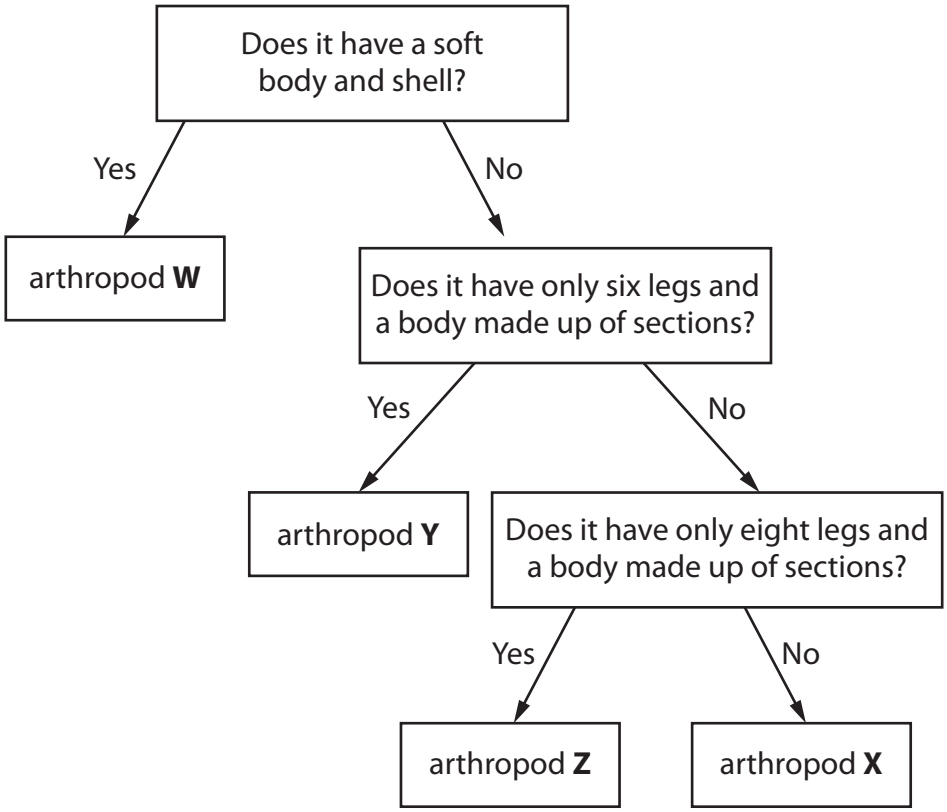
☒ **C** a liquid becomes solid

☒ **D** a solid becomes liquid

(Total for Question 14 = 1 mark)

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





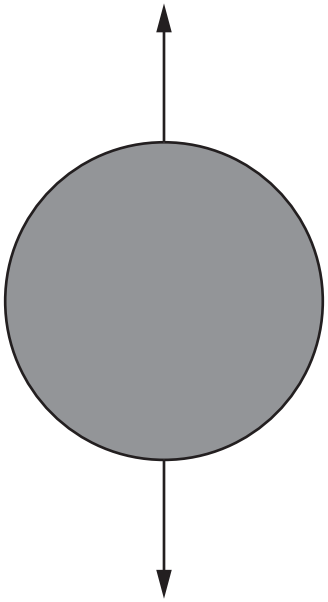
Which arthropod is the animal in the diagram?

Use the key to identify the answer.

- ☒ **A** arthropod **W**
- ☒ **B** arthropod **X**
- ☒ **C** arthropod **Y**
- ☒ **D** arthropod **Z**

(Total for Question 15 = 1 mark)

16 The diagram shows two forces acting on a ball.



Which of the following statements about these two forces is correct?

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

(Total for Question 16 = 1 mark)

17 Micro-organisms can be useful or they can be harmful.

Which of the following is an example of micro–organisms being useful?

- ☒ **A** causing disease
- ☒ **B** causing food poisoning
- ☒ **C** making food mouldy
- ☒ **D** making yoghurt

(Total for Question 17 = 1 mark)

18 The picture shows a child kicking a football. The football falls to the ground after it has been kicked.

Which is the correct reason why the football falls to the ground?

- ☒ **A** the force of gravity acts between the Earth and the football
- ☒ **B** the force of gravity acts between the Earth and the child
- ☒ **C** the force of gravity acts between the child's foot and the football
- ☒ **D** the force of gravity acts between the child's head and the football

(Total for Question 18 = 1 mark)

19 Flowering plants are made up of a number of parts. Each part has a different function.

Draw **one** straight line from each part of the flowering plant to the correct function.

Part of flowering plant	Function
roots	to attract insects
	to produce food
	to produce seeds
leaves	
	to anchor the plant to the ground

(Total for Question 19 = 2 marks)

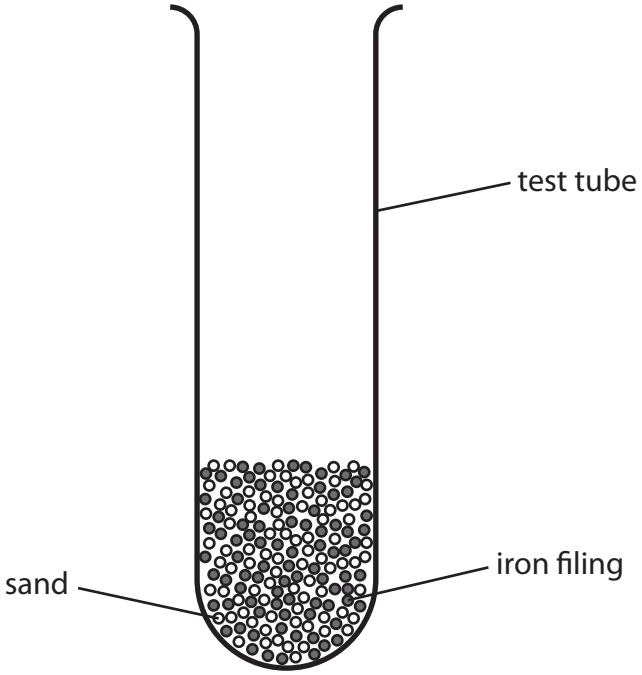
20 The table gives information about four planets in the Solar System and their approximate distance from the Sun.

Name of planet	Approximate distance from the Sun in millions of kilometres
Mercury	60
Venus	110
Earth	
Mars	230

Complete the table by adding an approximate value for the distance of the Earth from the Sun.

(Total for Question 20 = 1 mark)

21 The diagram shows a test tube containing a mixture of sand and iron filings.



State what should be used to separate the iron filings from the sand.

.....

(Total for Question 21 = 1 mark)

22 Air is a mixture of gases including nitrogen, oxygen and carbon dioxide.

The table shows the percentage of these gases in the air when breathed into the lungs and the percentage of these gases in the air when breathed out of the lungs.

	Percentage of		
	nitrogen	**oxygen**	**carbon dioxide**
air breathed into the lungs	78	20	less than 1
air breathed out of the lungs	78	16	4

Explain what happens to the percentage of oxygen in the lungs during breathing.

.....

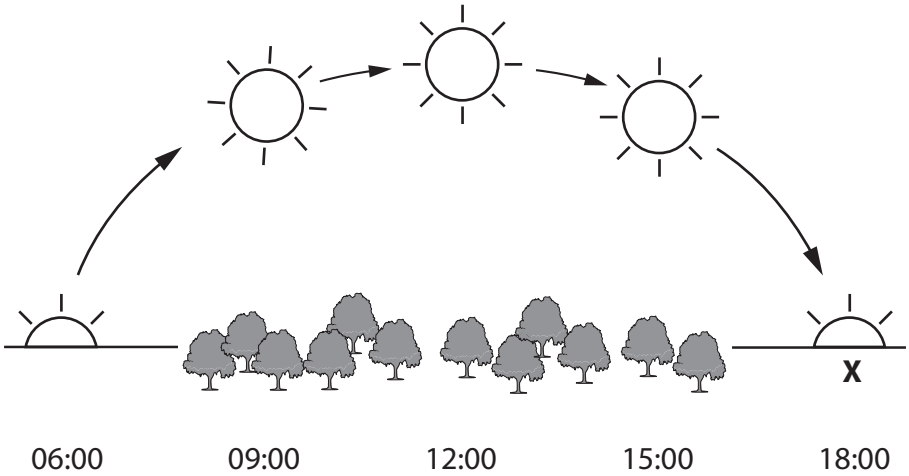
.....

.....

.....

(Total for Question 22 = 2 marks)

23 (a) The diagram shows how the Sun appears to move across the sky when observed from Earth at different times of the day.



(i) State why the Sun appears to move across the sky.

(1)

.....

(ii) State what is taking place at point **X** on the diagram.

(1)

.....

(b) State the relationship between the length of a shadow and the position of the Sun in the sky.

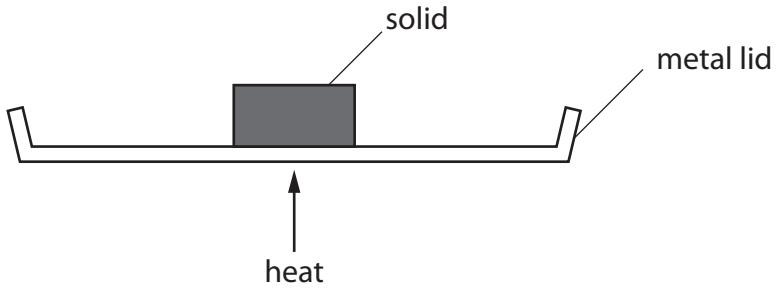
(1)

.....

(Total for Question 23 = 3 marks)

For Questions 24–27 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 ☒.

24 The diagram shows the equipment a student uses to investigate the melting of four different solids A, B, C and D.



The student uses the same amount of each solid and the same heater.

They time how long each solid takes to melt.

The table shows the results.

Solid	Time to melt in seconds
A	750
B	825
C	1025
D	690

Which statement is a correct conclusion from these results?

☒ **A** solid A has the highest melting point

☒ **B** solid B has the highest melting point

☒ **C** solid C has the highest melting point

☒ **D** solid D has the highest melting point

(Total for Question 24 = 1 mark)

25 Pollination involves the transfer of pollen between parts of a flower.

Which parts of a flower is pollen transferred between?

☒ **A** from anther to stigma

☒ **B** from petal to stigma

☒ **C** from stigma to anther

☒ **D** from stigma to petal

(Total for Question 25 = 1 mark)

26 Electrical components can be represented by symbols.

Which is the correct symbol for a buzzer?

☒ **A** 

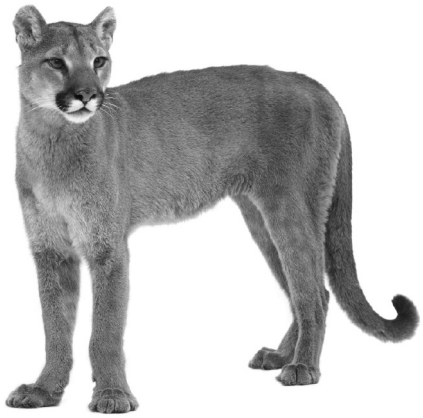
☒ **B** 

☒ **C** 

☒ **D** 

(Total for Question 26 = 1 mark)

27 The picture shows a wild cat. Wild cats are mammals.



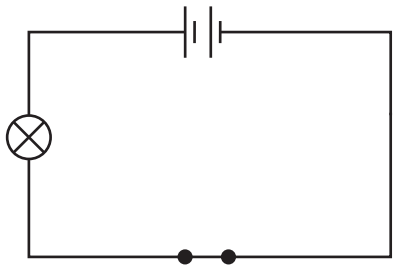
(Source: © AL1102691/PAL)

Which of these statements about wild cats will be true?

- ☒ **A** they are invertebrates and lay eggs
- ☒ **B** they are invertebrates and their young develop inside the mother
- ☒ **C** they are vertebrates and lay eggs
- ☒ **D** they are vertebrates and their young develop inside the mother

(Total for Question 27 = 1 mark)

28 The diagram shows a bulb in an electrical circuit.



Give **two** changes to the circuit that will reduce the brightness of the bulb when the switch is closed.

1 .....

2 .....

(Total for Question 28 = 2 marks)

29 State the function of the heart in the human circulatory system.

.....

(Total for Question 29 = 1 mark)

30 Solid and gas are two states that have different properties.

Draw **one** straight line from each state to a property of that state.

State	Property
solid	escape from unsealed container
	hold their shape
gas	take the shape of the bottom of a container

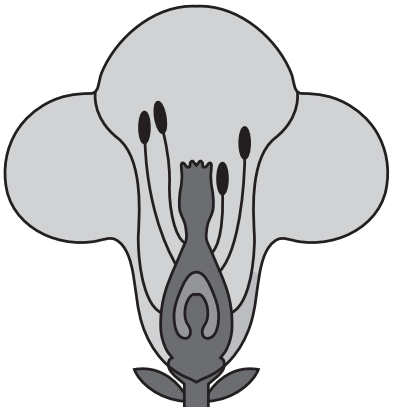
(Total for Question 30 = 1 mark)

DO NOT WRITE IN THIS AREA

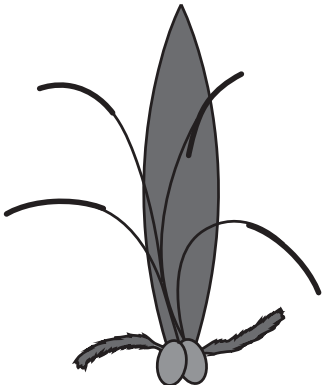
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

31 The diagrams show cross-sections of an insect-pollinated and a wind-pollinated flower.



Insect-pollinated flower



Wind-pollinated flower

Tick (✓) the correct boxes in the table below to give the features of an insect-pollinated flower and a wind-pollinated flower.

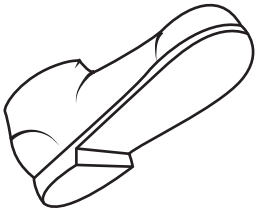
The first feature has been done for you.

	Feature of the flower			
	pollen grains are light and smooth	petals are large and brightly coloured	anthers and filaments hang outside the flower	stigma is inside the flower
insect-pollinated flower				
wind-pollinated flower	✓			

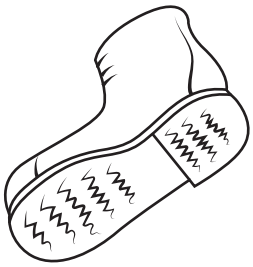
(Total for Question 31 = 2 marks)

32 (a) The diagrams show the bottoms of three different types of shoe.

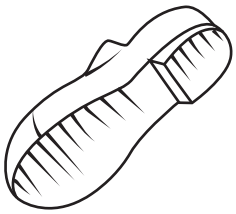
The bottom of each shoe has the same size and area.



Type A



Type B



Type C

A student investigates which shoe bottom produces the greatest friction.

The table shows the student's results.

Shoe bottom	Friction in newtons (N)
Type A	10.5
Type B	15.0
Type C	13.0

(i) Which type of shoe, A, B, or C, would be the most suitable for climbing up smooth and slippery surfaces?

(1)

.....

(ii) The student does another test with a shoe Type D and the result is 17.5 newtons.

Give a possible reason for the increase in the friction.

(1)

.....

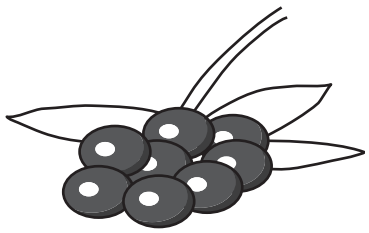
.....

(Total for Question 32 = 2 marks)

33 The seeds of a plant are adapted to be dispersed in different ways.

(a) The diagram shows a fruit that is sweet and full of nutrition.

The fruit is eaten by animals including birds.

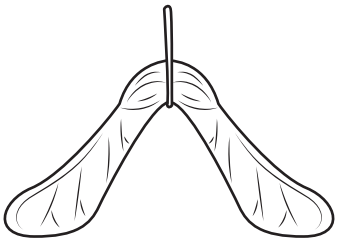


Give **one** way the seeds in this fruit will be dispersed by birds.

(1)

.....

(b) The diagram shows a sycamore seed.



Explain how this seed will be dispersed.

(2)

.....

.....

.....

.....

(Total for Question 33 = 3 marks)

TOTAL FOR SECTION A = 45 MARKS

DO NOT WRITE IN THIS AREA

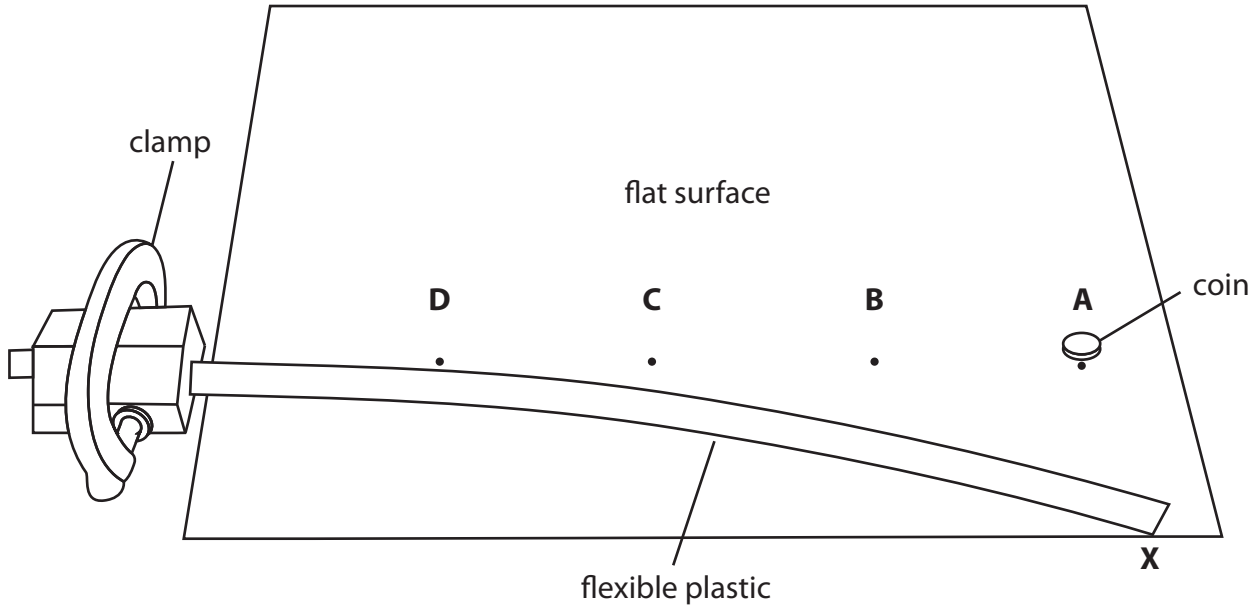
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

SECTION B

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

34 The diagram shows the equipment a student uses to investigate how far a coin moves when it is hit by a flexible piece of plastic.



The student uses the following method.

Step 1: pull the end of the flexible piece of plastic to position X

Step 2: place the coin at point A

Step 3: make sure the bottom edge of the coin touches point A as shown in the diagram

Step 4: let go of the flexible piece of plastic

Step 5: measure how far the coin moves across the flat surface after being hit by the piece of plastic

Step 6: repeat the experiment by placing the bottom edge of the coin at point B, then point C and finally point D

(a) (i) Name the piece of equipment the student needs in step 5.

(1)

.....

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

(1)

.....

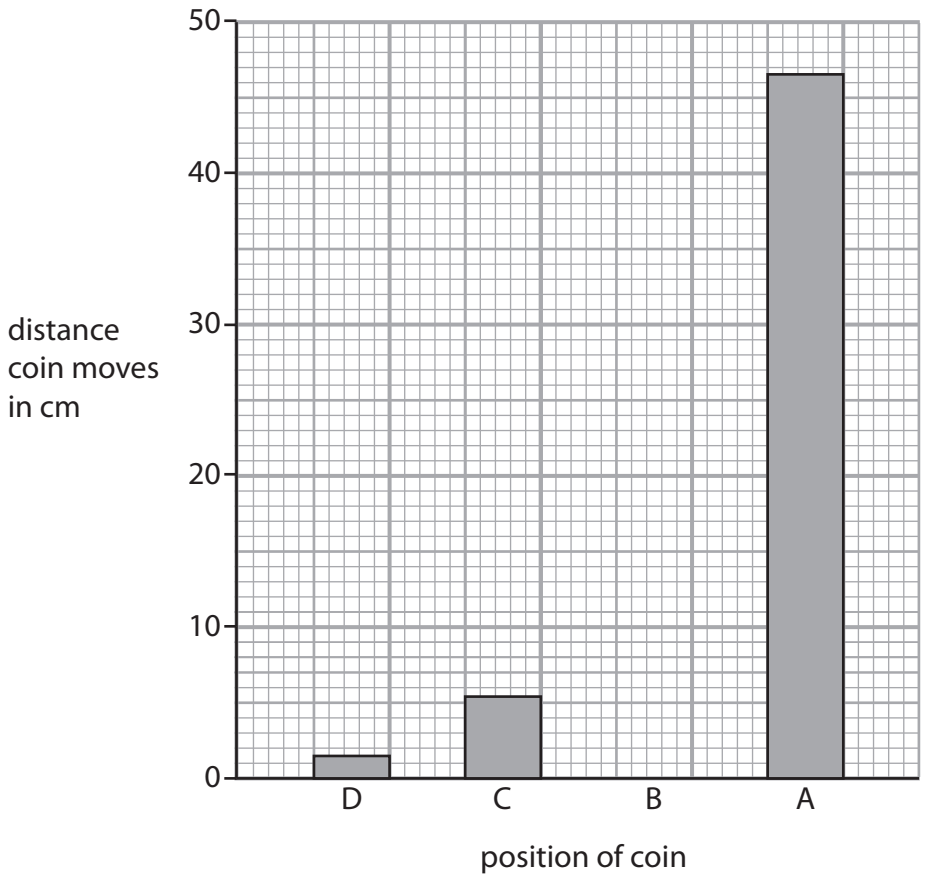
(b) (i) The table shows the student's results.

Position of the coin	Distance the coin moves in cm after being hit by the piece of plastic
A	46.5
B	20.0
C	5.5
D	1.5

The student draws a bar chart of the results.

Complete the bar chart by drawing the result for the coin at position B.

(1)



(ii) What conclusion can the student make about the relationship between the distance the coin is from the clamp and the distance the coin moves after being hit by the piece of plastic?

(2)

.....

.....

.....

.....

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

Tick (✓) the boxes to indicate your answers.

The first one has been done for you.

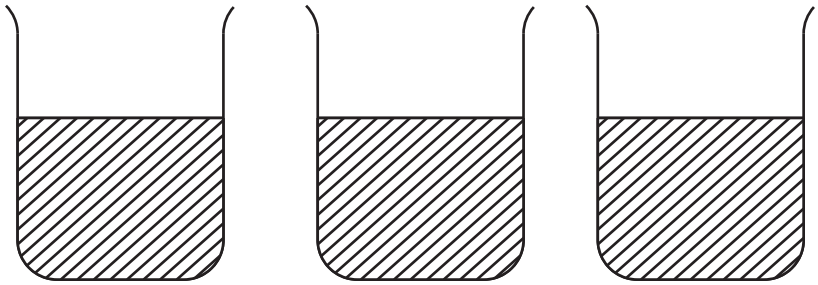
(1)

Scientific question	Yes	No
Does the thickness of the piece of plastic affect how far the coin moves?	✓	
Does the size of the coin affect how far it moves?		
Does the time of day affect how far the coin moves?		
Does the type of plastic used affect how far the coin moves?		

(Total for Question 34 = 6 marks)

DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

35 The diagram shows the equipment a student uses to investigate the volume of water that evaporates from a beaker when put in three different places.



Beaker 1 **Beaker 2** **Beaker 3**

Each beaker contains the same volume of water at the start of the investigation.

Beaker 1 is put in a cold room.

Beaker 2 is put in a very warm oven.

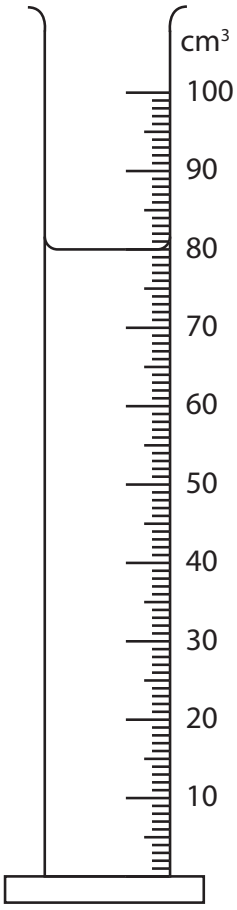
Beaker 3 is put in a room at normal room temperature.

Each beaker was left for the same amount of time.

(a) The student uses a measuring cylinder to measure the volumes of water.

What is the volume of water shown in the diagram?

(1)



volume of water = ... cm^3

(b) The student predicts that the volume of water that evaporates from each beaker will be the same because each beaker is the same size and shape.

The table shows the student's results.

Beaker	Volume of water that evaporates in cm^3
1	5.5
2	31.5
3	15.5

Explain how the results do **not** support the student's prediction.

(2)

.....

.....

.....

.....

(c) State a safety precaution the student should take when taking the beaker out of the very warm oven.

(1)

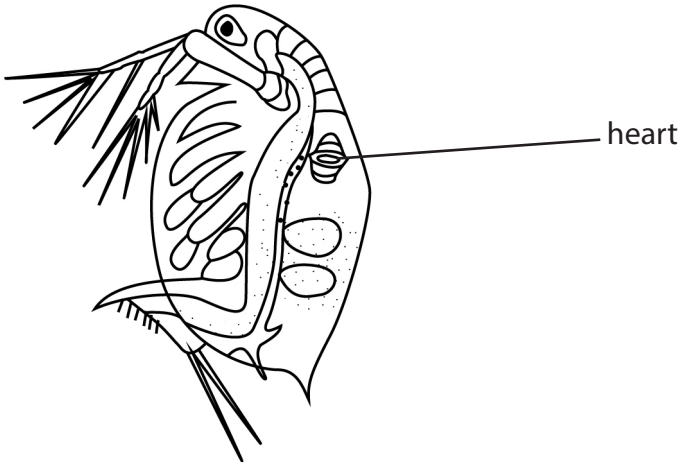
.....

.....

(Total for Question 35 = 4 marks)

36 Water fleas are small microscopic animals.

The diagram shows a water flea and the position of its heart.



A student investigates the effect of different types of water on the number of heart beats per minute of the water flea.

The student uses river water, lake water, rainwater and stream water.

The temperature of each type of water is kept the same.

The student measures the heart rate of the water flea by counting the number of heart beats per minute.

The student's investigation involves the following four steps.

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

Step A: place the water flea in the same volume of each type of water being tested

Step B: measure the number of heart beats of the water flea per minute in each type of water

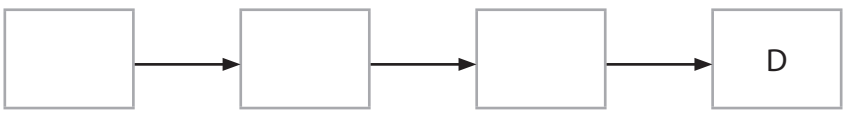
Step C: measure the number of heart beats per minute of the water flea in its normal environment

Step D: return the water flea to its normal environment

(a) Write the letters **A**, **B** and **C** in the boxes to show the correct order of the steps in the investigation.

Step D has already been done for you.

(2)



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(b) Give a reason why the same temperature is used for each type of water tested.

(1)

.....

(c) The table shows the results the student obtains.

	Number of heart beats of the water flea per minute	
	Test 1	**Test 2**
normal environment	115	115
river water	137	138
lake water	147	145
rainwater	124	125
stream water	131	129

Explain why the student obtains two sets of results.

(2)

.....

.....

.....

.....

(Total for Question 36 = 5 marks)

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

BLANK PAGE