Pearson Edexcel International Award in Primary

Time 1 hour | **Paper reference** | **JSC11/01**

Science
Year 6
Achievement Test iPrimary

You must have:
a 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 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 ▶

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 Which piece of equipment is used to measure temperature?

☒ **A** a thermometer

☒ **B** a stopwatch

☒ **C** a ruler

☒ **D** a balance

(Total for Question 1 = 1 mark)

2 Which of these reflects light?

☒ **A** a light bulb

☒ **B** a lit match

☒ **C** the Moon

☒ **D** the Sun

(Total for Question 2 = 1 mark)

3 Which of these is an irreversible change?

☒ **A** an ice cube melting
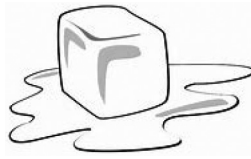
☒ **B** an iron nail rusting

☒ **C** sieving a mixture of sand and stones
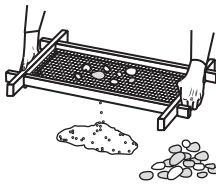
☒ **D** dissolving salt in water
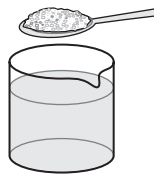
(Total for Question 3 = 1 mark)

4 The diagram shows a plant and a key to identify this plant.

Does it have flowers?

Yes → Does it have a single flower on each stem?

No → Do the leaves have holes in them?

Does it have a single flower on each stem?
Yes → peony
No → hyacinth

Do the leaves have holes in them?
Yes → Swiss cheese plant
No → rubber plant
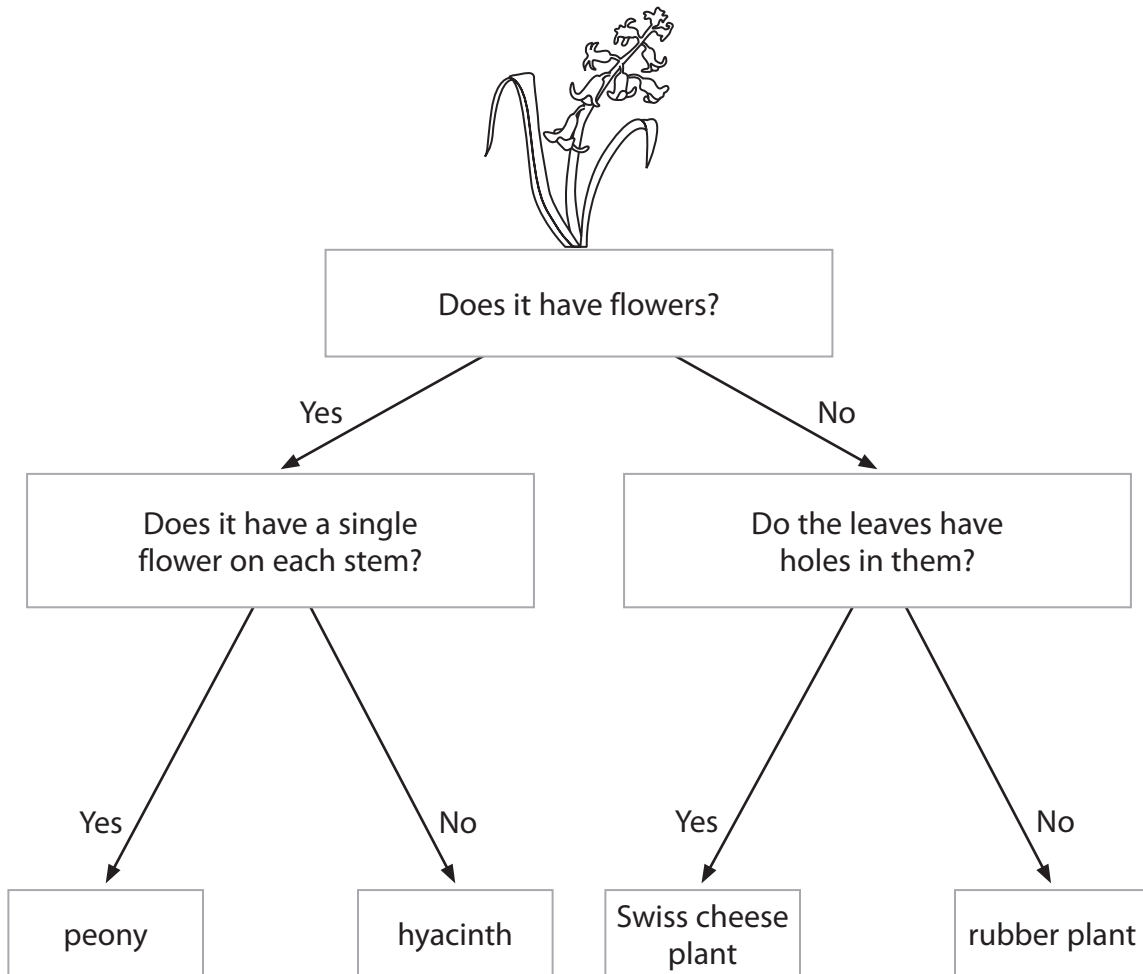
What is the name of this plant?

Use the key to identify the answer.

☒ **A** peony

☒ **B** hyacinth

☒ **C** Swiss cheese plant

☒ **D** rubber plant

(Total for Question 4 = 1 mark)

5 Rabbits are herbivores. Foxes are predators of rabbits.
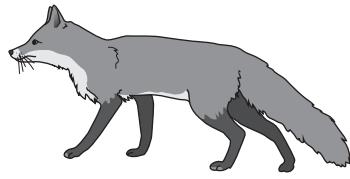
fox   grass   rabbit

Which is the correct food chain for a fox, grass and a rabbit?

☒ **A** fox ⟶ grass ⟶ rabbit

☒ **B** grass ⟶ fox ⟶ rabbit

☒ **C** grass ⟶ rabbit ⟶ fox

☒ **D** fox ⟶ rabbit ⟶ grass

(Total for Question 5 = 1 mark)

6 The diagram shows the soles of four types of shoe, **A**, **B**, **C** and **D**.

Each shoe sole is the same size.

A   **B**   **C**   **D**

Which shoe would have the least grip in slippery conditions?

☒ **A**

☒ **B**

☒ **C**

☒ **D**

(Total for Question 6 = 1 mark)

7 What is the function of the sepal of a flower?

☒ **A** to attract insects

☒ **B** to make ova

☒ **C** to make pollen

☒ **D** to protect the flower bud

(Total for Question 7 = 1 mark)

8 Two parcels, X and Y, of the same size and mass are dropped from an aeroplane at the same time.

Each parcel has a parachute attached.

The parachute on parcel X opens correctly.
The parachute on parcel Y does not open correctly.

parachute

parcel

X   Y
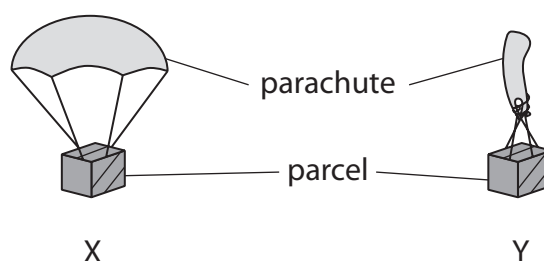
Which statement is correct?

☒ **A** Y lands first because it has the least air resistance

☒ **B** X lands first because the parachute reduces air resistance

☒ **C** Y lands first because the parachute decreases the force of gravity on the parcel

☒ **D** X lands first because the parachute increases the force of gravity on the parcel

(Total for Question 8 = 1 mark)

9 Which of these are all micro-organisms?

☒ **A** bacteria, birds, plants

☒ **B** animals, bacteria, viruses

☒ **C** invertebrates, viruses, yeast

☒ **D** bacteria, yeast, viruses

(Total for Question 9 = 1 mark)

10 In which circuit would the bulb be the dimmest?

Identical motors, bulbs and cells are used in these circuits.

☒ **A**

☒ **B**

☒ **C**

☒ **D**
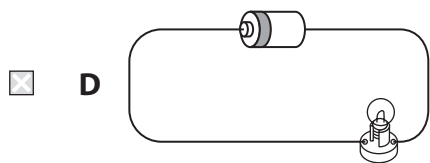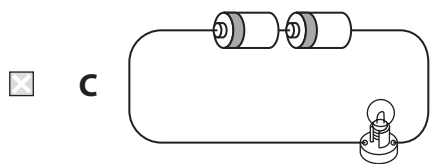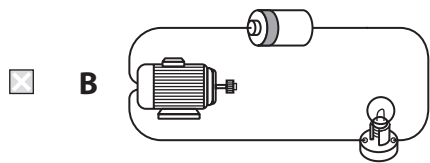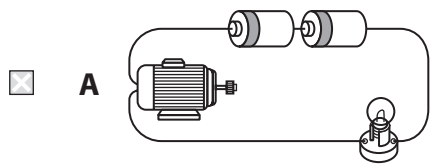
(Total for Question 10 = 1 mark)

P 6 9 2 0 0 A 0 7 2 8

11 The diagram shows a growing plant.
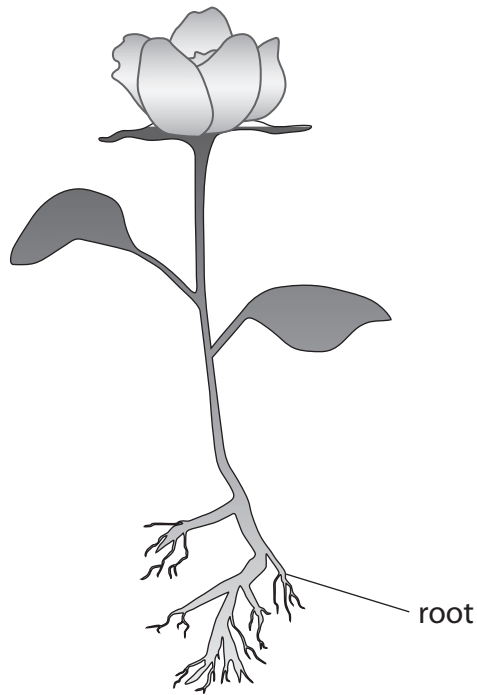
root

(a) Give two functions of the root of a plant.

(2)

1 ....

2 ....

(b) The diagram shows the flower of a plant.

Complete the labels using words from the box.

(3)

anther	filament	ovary
stigma	style	petal

....

....

....
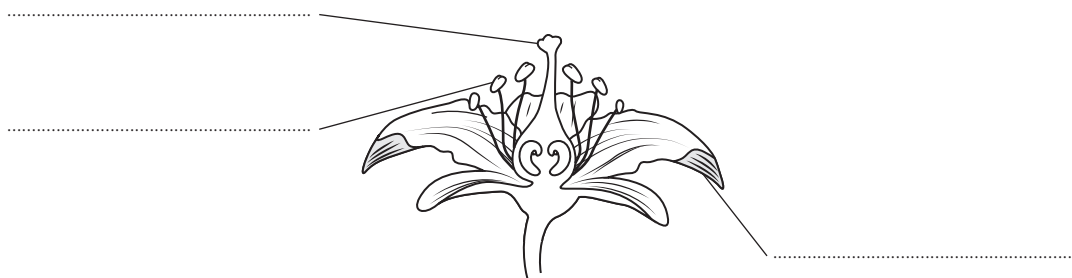
(Total for Question 11 = 5 marks)

**For questions 12–18 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 ☒.**

Each question is worth one mark.

12 What causes dead organisms to decay?

☒ **A** animals

☒ **B** bacteria

☒ **C** plants

☒ **D** rocks

(Total for Question 12 = 1 mark)

13 The photograph shows an ice sculpture.

(Source: © Global Warming Images/Alamy Stock Photo)

What happens to the ice sculpture when it is left in a warm room?

☒ **A** it condenses

☒ **B** it dissolves

☒ **C** it freezes

☒ **D** it melts

(Total for Question 13 = 1 mark)

14 Which shows a correct ray diagram for light travelling from the television to the viewer's eye?

☒ **A**

mirror

eye

television

wall

☒ **B**

mirror

eye

television

wall

☒ **C**

mirror

eye

television

wall

☒ **D**

mirror

eye

television

wall
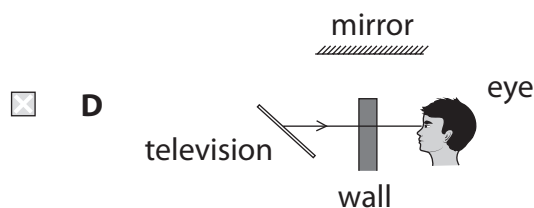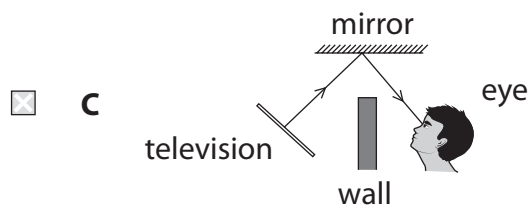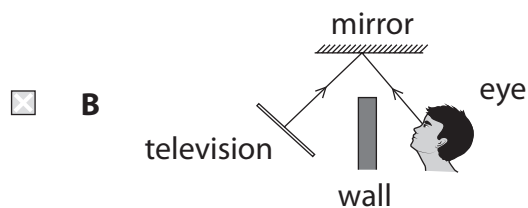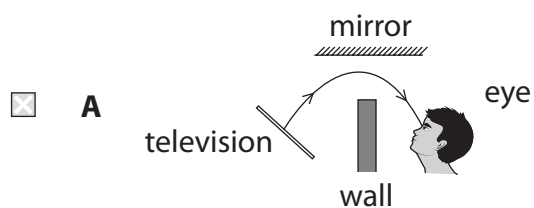
(Total for Question 14 = 1 mark)

15 A plant grows 1.5 m high and produces scented, purple flowers between June and October. Each flower turns into a sticky seedhead containing many seeds.

What type of pollination and seed dispersal will this plant use?

	pollination	seed dispersal
☒ **A**	insect	water
☒ **B**	insect	animals
☒ **C**	wind	water
☒ **D**	wind	animals

(Total for Question 15 = 1 mark)

16 A class plants one half of a packet of wildflower seeds in Area A, which is in the middle of a field. They plant the other half in Area B, which is under a tree in the same field.

A few months later they compare the two areas A and B. The drawing below shows what they find.
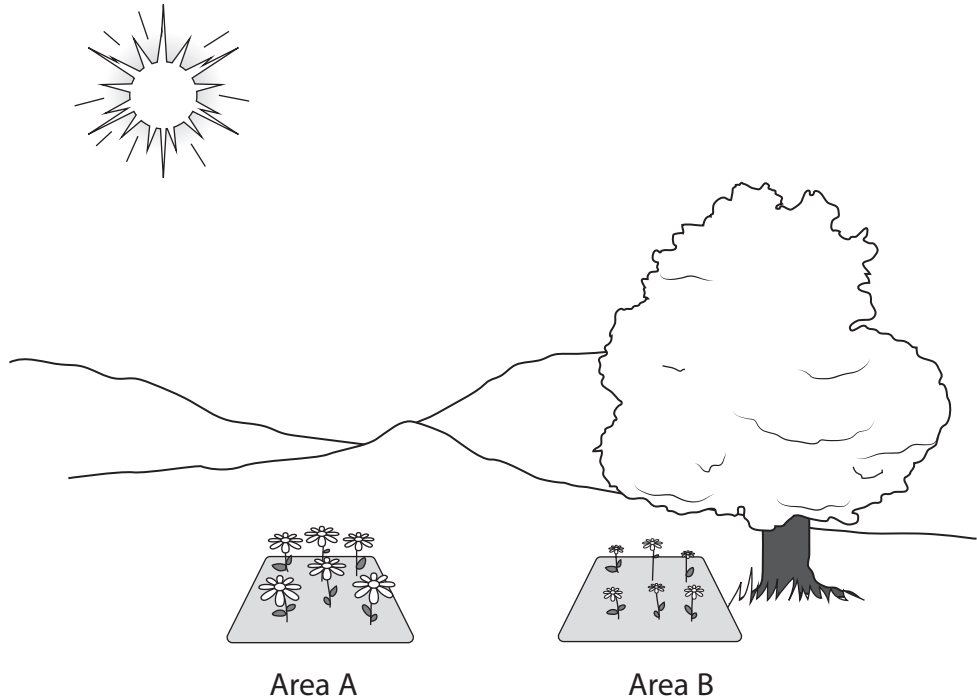
Area A   Area B

What is the reason for the difference in plant growth in the two areas?

☒   **A**   plants in Area A received less water

☒   **B**   plants in Area B received more nutrients

☒   **C**   plants in Area A received more sunlight

☒   **D**   plants in Area B received more water

(Total for Question 16 = 1 mark)

17 Which method keeps food fresh for the longest time?

☒   **A**   keeping it in a dark cupboard

☒   **B**   keeping it in a refrigerator

☒   **C**   leaving it on the windowsill

☒   **D**   leaving it in fresh air

(Total for Question 17 = 1 mark)

18 What does it mean if an object is streamlined?

⊠ **A** its shape gives it more grip

⊠ **B** its shape is more affected by the force of gravity

⊠ **C** its shape reduces its speed

⊠ **D** its shape reduces the effect of air and water resistance

(Total for Question 18 = 1 mark)

19 Sugar and salt are added to some water.

A student tries to separate the mixture of water, sugar and salt by filtration.

State why this is not a suitable method to separate the mixture.

....

....

(Total for Question 19 = 1 mark)

20 The drawing shows an electrical circuit.

buzzer
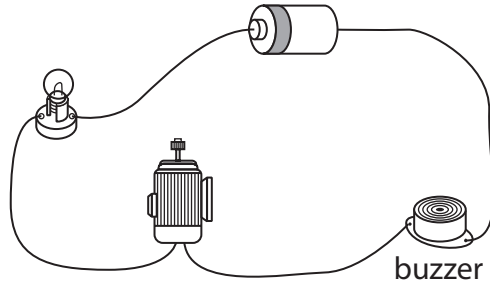
(a) Complete the circuit diagram for this circuit. Use the correct scientific symbols for each component.

(2)

(b) Explain why electrical cables are made from a copper wire inside a plastic covering.

plastic covering   copper wire

(Source: © Ilya Bolotov/Shutterstock)

(2)

....

....

....

....

(Total for Question 20 = 4 marks)

Turn over ▶

21 The diagram shows the water cycle.

The Water Cycle

Sun

land

sea
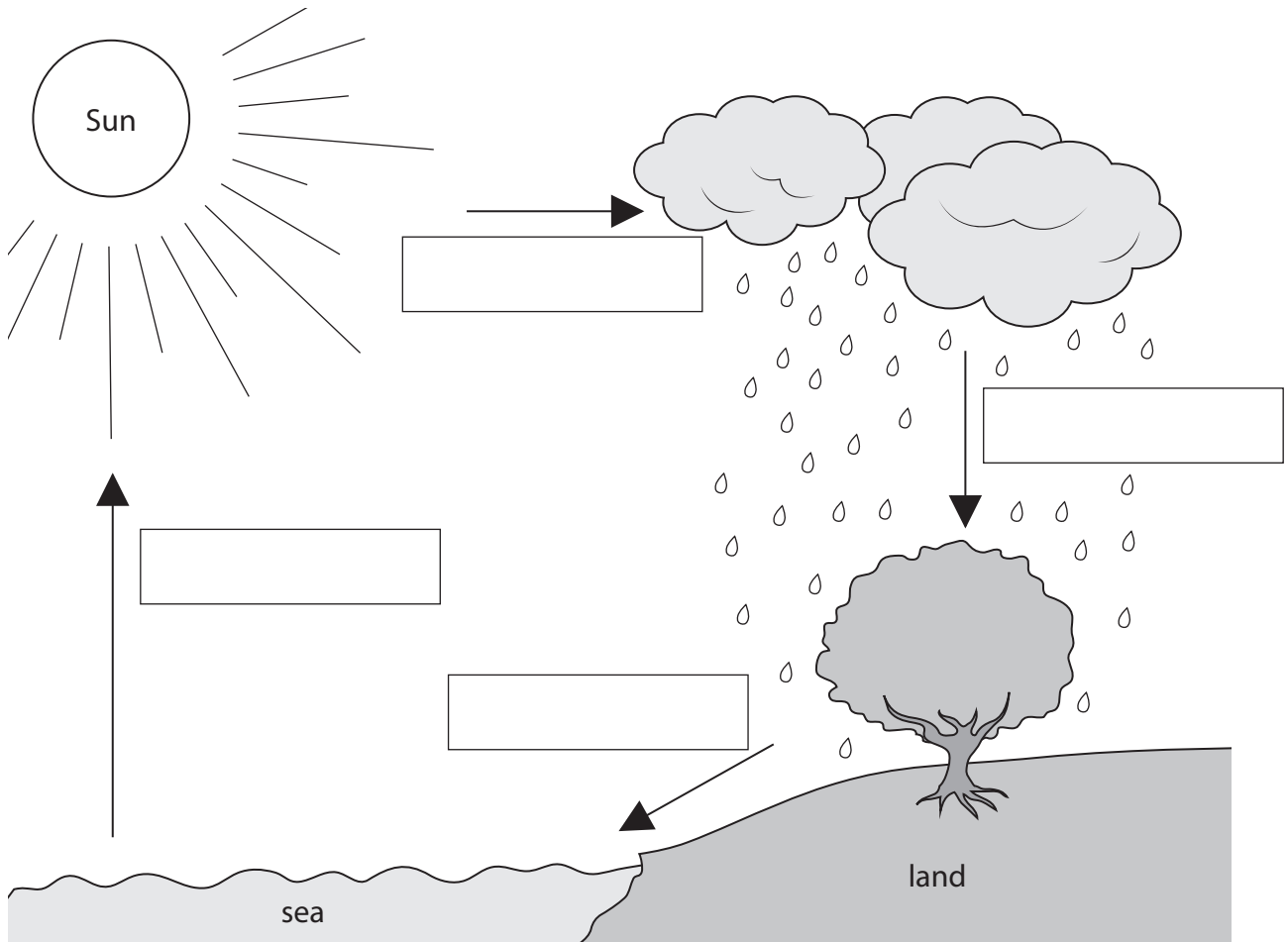
(a) Write the word **evaporation** and the word **condensation** in the boxes where each of these processes occur. Two boxes will be left empty.

(2)

(b) What causes the condensation of water vapour in the water cycle?

(1)

....

....

(Total for Question 21 = 3 marks)

For questions 22–25 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.

22 The boxes contain some information about three substances, X, Y and Z.

Substance X	Substance Y	Substance Z
flows to take the shape of the container	moves easily and escapes from an open container	holds its shape and does not flow

Which row of the table correctly gives the state of substances X, Y and Z?

		Substance X	**Substance Y**	**Substance Z**
⊠	**A**	solid	liquid	gas
⊠	**B**	liquid	gas	solid
⊠	**C**	gas	solid	liquid
⊠	**D**	liquid	solid	gas

(Total for Question 22 = 1 mark)

23 Which statement about a stage in the life cycle of a flowering plant is true?

⊠ **A** fertilisation occurs when pollen is transferred to the anther

⊠ **B** flowering occurs when the seeds are carried away from the parent plant

⊠ **C** germination occurs when the seed first starts to sprout

⊠ **D** pollination occurs when the ovule and pollen fuse together

(Total for Question 23 = 1 mark)
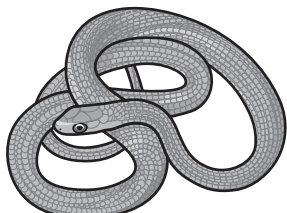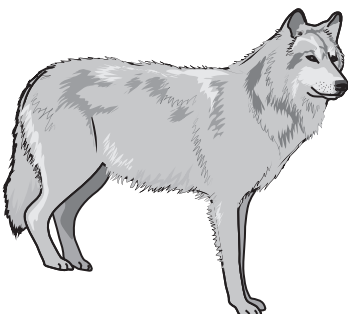
24 A student is making a model house. They want the windows to be made from a transparent material.

Which material should they choose?

☒ **A** colourless plastic

☒ **B** copper metal

☒ **C** white cloth

☒ **D** wood

(Total for Question 24 = 1 mark)

25 Which row of the table shows the correct classification for the frog, snake and wolf?

	frog with smooth skin	**snake with scaly skin**	**wolf with furry skin**
☒ **A**	reptile	amphibian	mammal
☒ **B**	amphibian	mammal	reptile
☒ **C**	mammal	reptile	amphibian
☒ **D**	amphibian	reptile	mammal

(Total for Question 25 = 1 mark)

26 (a) Draw circles around the three parts of the human body that are part of the circulatory system.

(1)

arm   blood   brain   heart

kidneys   lungs   thorax   blood vessels

(b) Explain why pulse rate increases during exercise.

(2)

....

....

....

....

(Total for Question 26 = 3 marks)

27 The drawing shows an aeroplane flying. There are four forces acting on it.
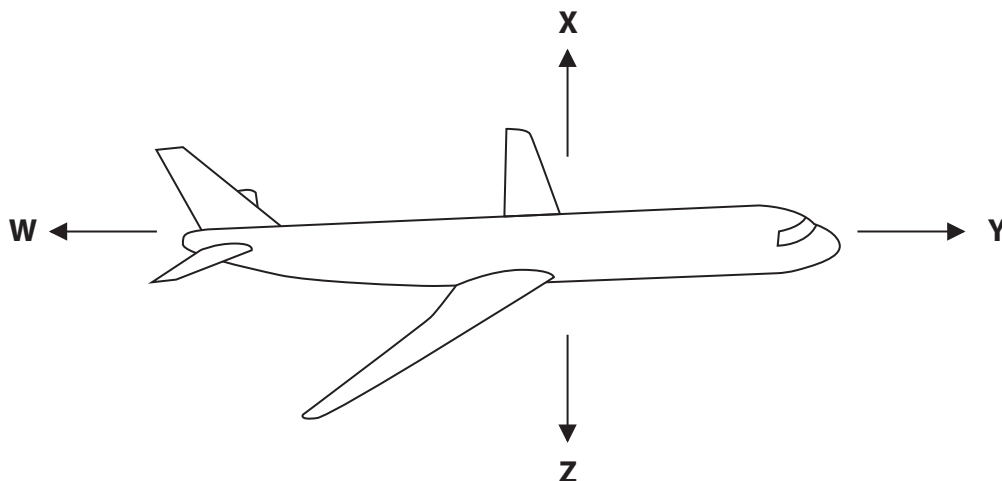
(a) Which arrow, **W**, **X**, **Y** or **Z**, represents the force of gravity acting on the aeroplane?

(1)

....

(b) Name **one** of the other forces acting on this aeroplane as it moves through the air.

(1)

....

(c) What scientific unit are forces measured in?

(1)

....

(Total for Question 27 = 3 marks)

28 Yeast is added to bread dough to make it rise.

A class investigated how well yeast works at different temperatures. 50 cm³ portions of dough containing yeast were put into four measuring cylinders. Each measuring cylinder and its contents were kept at a different temperature.

cm³
200

150

100

50

dough containing yeast
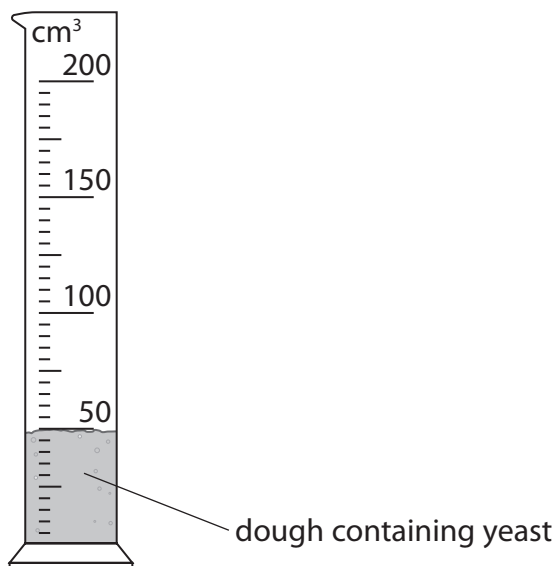
The volume of the dough after one hour was recorded for each temperature. The table shows the results.

Temperature (°C)	Volume (cm³) of dough after 1 hour
4	52
14	60
24	80
34	100

Give a conclusion for these results.

....

....

....

....

(Total for Question 28 = 2 marks)

Turn over ▶

P 6 9 2 0 0 A 0 1 9 2 8

29 Complete the sentence using words from the box.

(2)

| solute | solution | solvent |

A student makes a mixture by dissolving salt in water.

The salt is the .... and the mixture is a

....

(Total for Question 29 = 2 marks)

30 The table shows the time it takes for four planets, A, B, C and D, to orbit the Sun.

Planet	Time to orbit the Sun
A	88 days
B	12 years
C	1 year
D	225 days

List the four planets A, B, C and D in the order of their distance from the Sun.

(1)

nearest to the Sun ....

....

....

furthest from the Sun ....

(Total for Question 30 = 1 mark)

TOTAL FOR SECTION A = 45 MARKS

SECTION B

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

31 A class of students investigates how the size of a plant pot affects the growth rate of a sunflower.

This is the method they use.

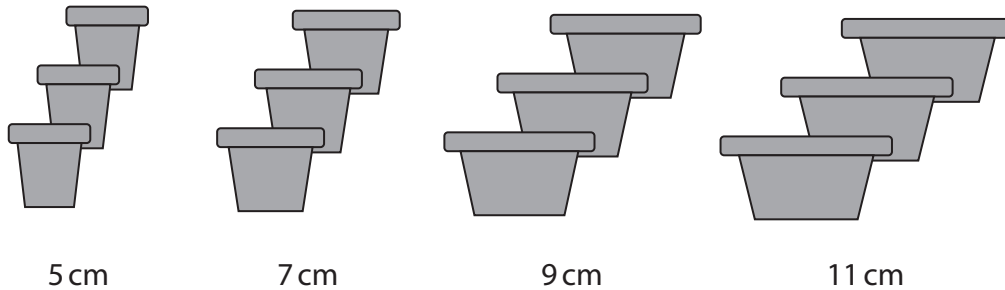**Step 1**: choose plant pots 5 cm, 7 cm, 9 cm and 11 cm wide

Step 2: fill each pot with the same type of soil

Step 3: plant one sunflower seed in each pot

Step 4: set up two more pots of each size with soil and a seed

Step 5: water all the pots with the same amount of water every two days

Step 6: measure the height of each plant after five weeks

5 cm   7 cm   9 cm   11 cm

(a) The students use the same type of soil and the same amount of water to make it a fair test.

Give **one** other factor they must control to make it a fair test.

(1)

....

....

(b) Why in **Step 4** do the students set up two more pots of each size with soil and a seed?

(1)

....

....

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(c) The table shows the average results for four of the students for the plants grown in their 9 cm pots.

Average height of plant in centimetres (cm)			
Student 1	**Student 2**	**Student 3**	**Student 4**
25.4	250	25.6	25.2

(i) Draw a circle around the result that does not fit in with the others.

(1)

(ii) Suggest the error the student made when measuring the result that does not fit in.

(1)

....

....

(d) The diagram shows one of the plants in a 7 cm pot.
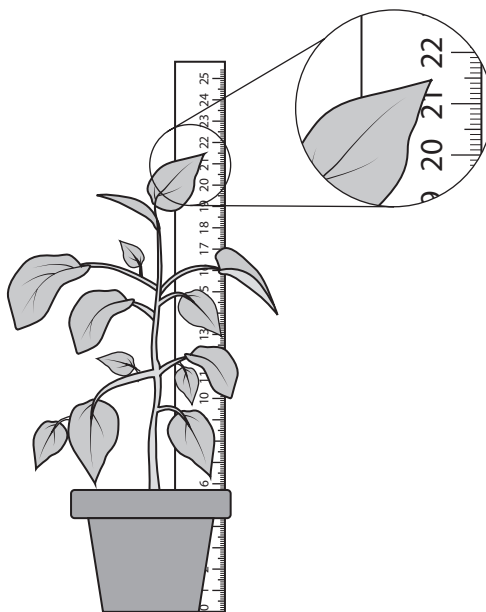
What is the height of this plant in centimetres?

(1)

.... cm

(e) The table shows the combined results of the whole class.

Size of plant pot in centimetres (cm)	Average height of plants in centimetres (cm) after five weeks
5	14.8
7	21.9
9	25.3
11	31.9

Draw a circle around the correct conclusion for this investigation.

(1)

the size of the pot does not matter

the bigger the pot the taller the plant grows

the smaller the pot the taller the plant grows

the results do not fit a pattern

(Total for Question 31 = 6 marks)

32 A student dissolves 10 g of solid X in water. The student then investigates if they can get back all 10 g of solid X by evaporating the mixture.
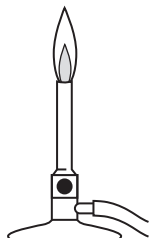
(a) The diagrams show the pieces of equipment, **A**, **B**, **C** and **D**, the student chooses to use.

Give the name of each piece of equipment. One has been done for you.

(2)

| **A** | **B** | **C** | **D** |

A = measuring cylinder

B = ...

C = ...

D = ...

(b) Give **one** safety precaution the student should take when evaporating the water.

(1)

....

....

(Total for Question 32 = 3 marks)

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33 The diagram shows a balloon powered vehicle. The air escaping from the balloon pushes the vehicle along.
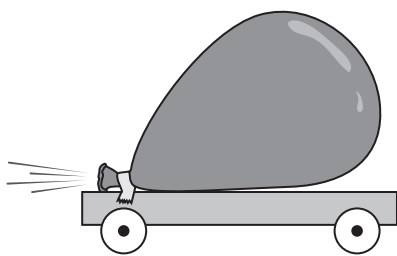
balloon powered vehicle

A student investigates how to make the balloon powered vehicle travel the greatest distance.

The student pumps up the balloon with different volumes of air and measures the distance the vehicle travels when the air is released.

(a) The student records their results on pieces of paper.

50 cm³ travelled 12 cm

250 cm³ went 28 cm

100 cm³ = 16 cm

150 cm³ = 20 cm

200 cm³ went 24 cm

The student decides to make a table of the results to make them easier to read.

(i) Add the missing heading to the table.

(1)

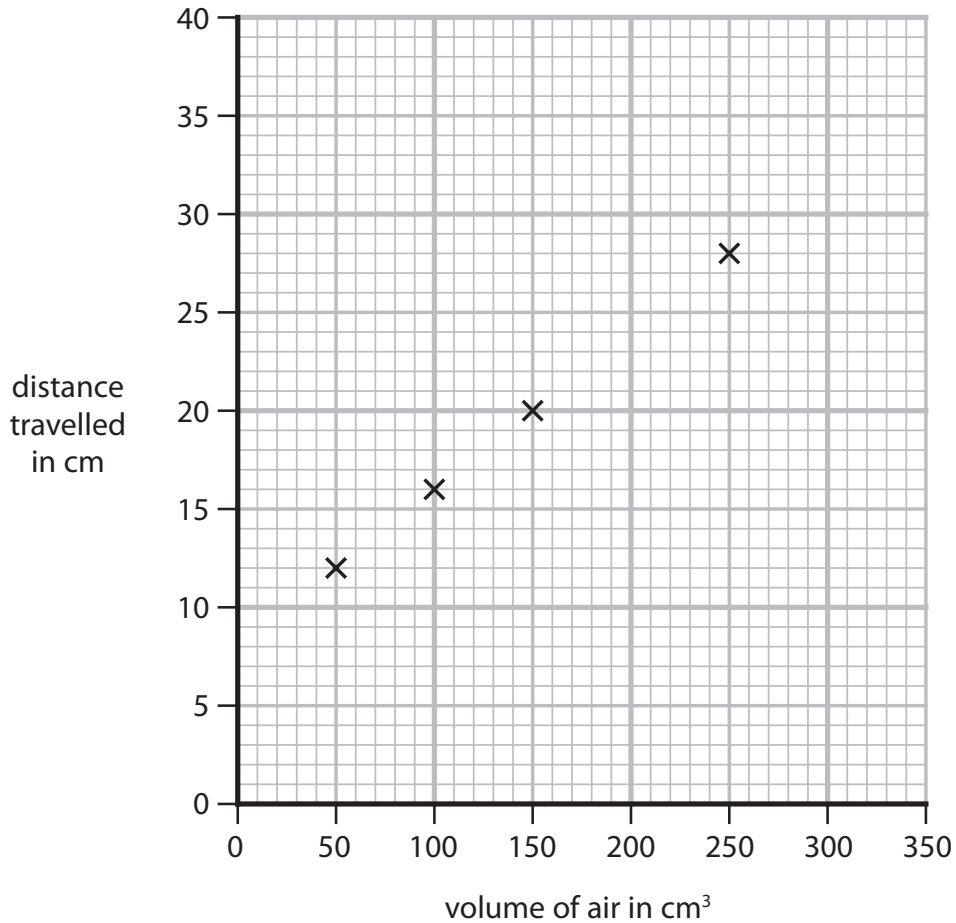| Volume of air in cm³	.... in ....
150	20

(ii) Complete the table by adding the rest of the results to the table.
You should put the results in order. One row of the table has been completed for you.

(2)

(b) The student uses the results to draw a graph.

(i) Plot the point for 200 cm³ of air.

(1)

distance travelled in cm

volume of air in cm³

(ii) Use a ruler to draw one line through all the points.

(1)

(iii) Use the graph to predict how far the vehicle would travel with 300 cm³ air in the balloon.

(1)

....

....

(Total for Question 33 = 6 marks)

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

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