Cambridge Assessment International Education

Science

Stage 7

Paper 1

2025

Cambridge Lower Secondary Progression Test

Name

Class

Date

45 minutes

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Write your answer to each question in the space provided.
- You should show all your working on the question paper.

INFORMATION

- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [ ].

1 This question is about cells.

(a) Draw a straight line to match each **cell structure** to its correct **function**.

cell structure	function
chloroplast	the control centre for a cell
cytoplasm	where energy is released
nucleus	contains the green pigment needed for photosynthesis
mitochondrion	helps keep the cell from collapsing and shrinking
sap vacuole	where chemical reactions happen

[3]

(b) Write down **two** structures that are in a plant cell and **not** in an animal cell.

1 .....

2 .....

[2]

2 This question is about how the model of the movement of the Earth, Moon and Sun explains tides and tidal forces.

(a) Write down the name of the force that holds the Earth in orbit around the Sun.

..... [1]

(b) The highest high tides happen when the Earth, Moon and Sun are aligned in a straight line.

Explain why.

.....

..... [1]

(c) Draw an alignment of the Earth, Moon and Sun that gives the lowest high tides.

[1]

(d) Models of how the Earth, Moon and Sun move help predict tide heights.

Explain why.

.....

..... [1]

(e) Models of how the Earth, the Moon and the Sun move do **not always** accurately predict tide heights.

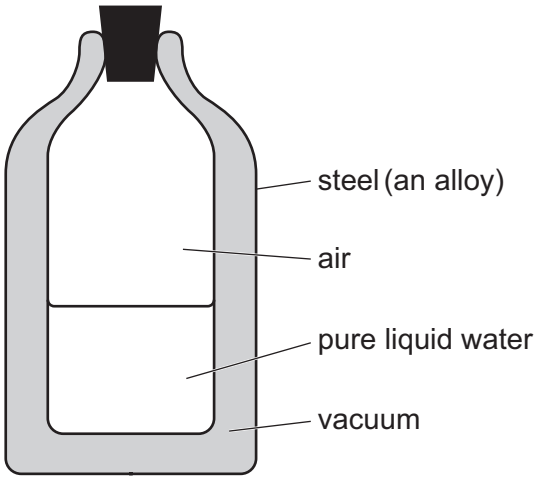
Suggest why.

.....

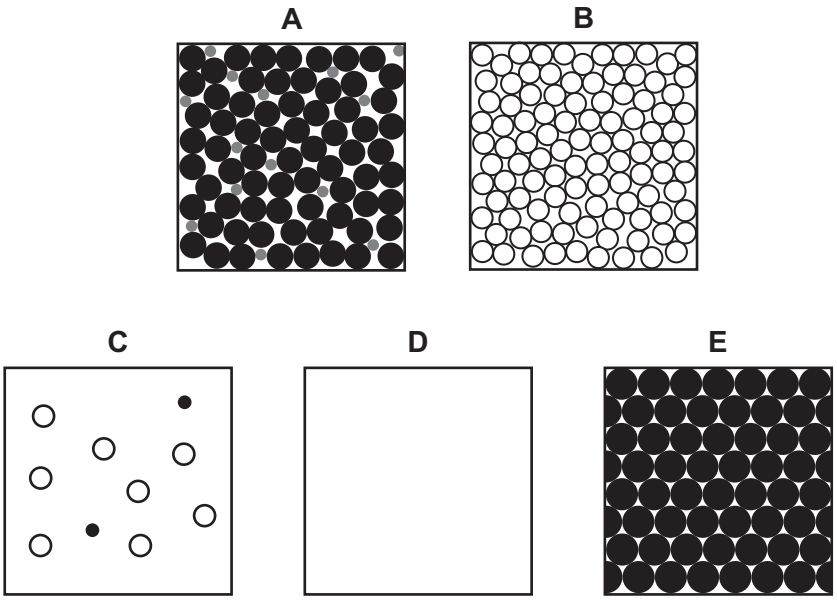
..... [1]

3 A vacuum flask is used to keep hot drinks warm.

Look at the diagram of a cross-section of a vacuum flask.



Look at the particle models for different substances.



(a) Tick (✓) the box to match each substance with the correct particle model.

One has been done for you.

substance	particle model				
	A	B	C	D	E
steel (an alloy)					
air					
pure liquid water					
vacuum				✓	

[3]

(b) Explain why particle model **D** shows a vacuum.

.....

..... [1]

(c) Steel is an alloy that contains iron.

(i) What is an alloy?

.....

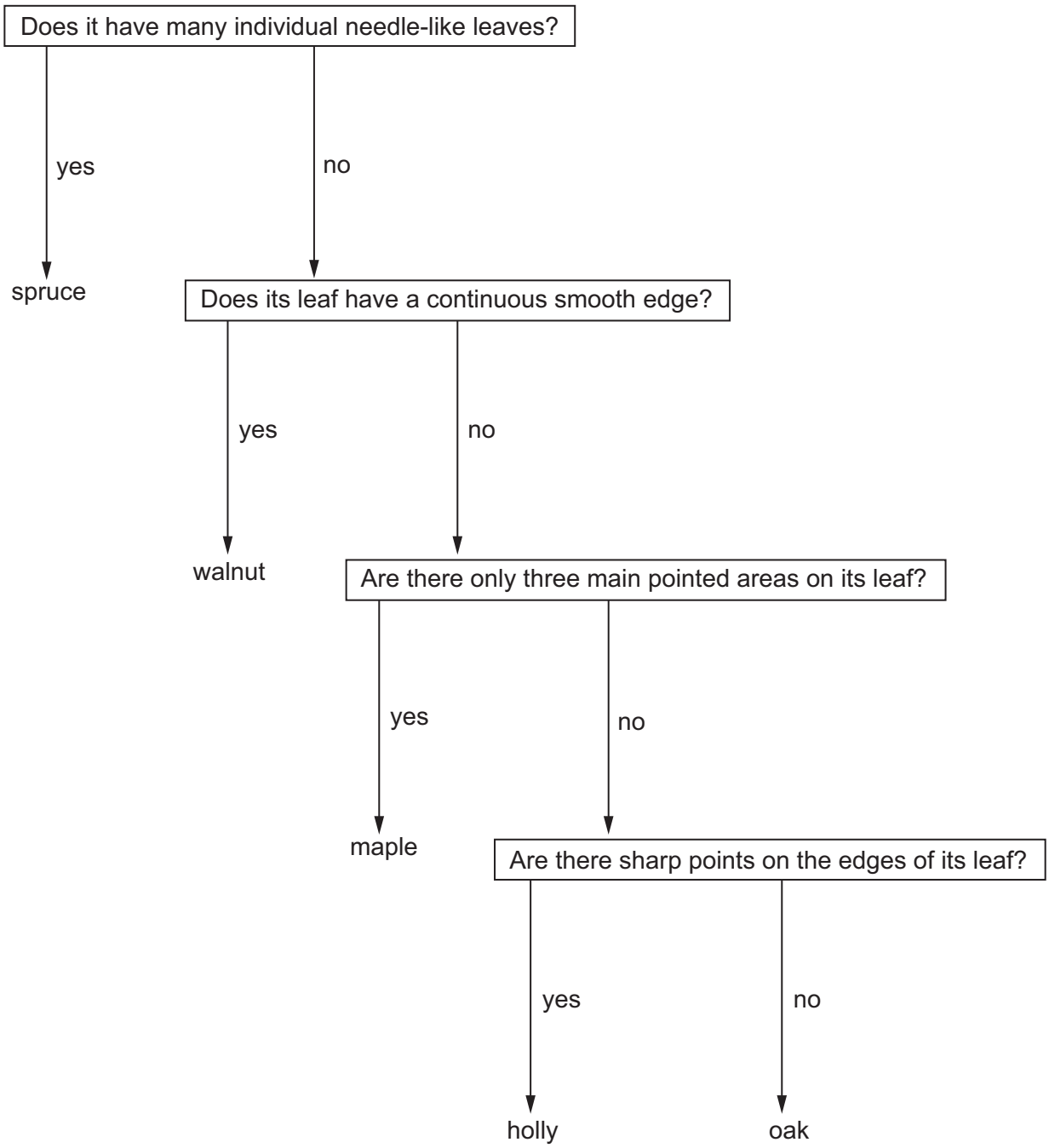
..... [1]

(ii) Suggest why an alloy of steel is used instead of pure iron.

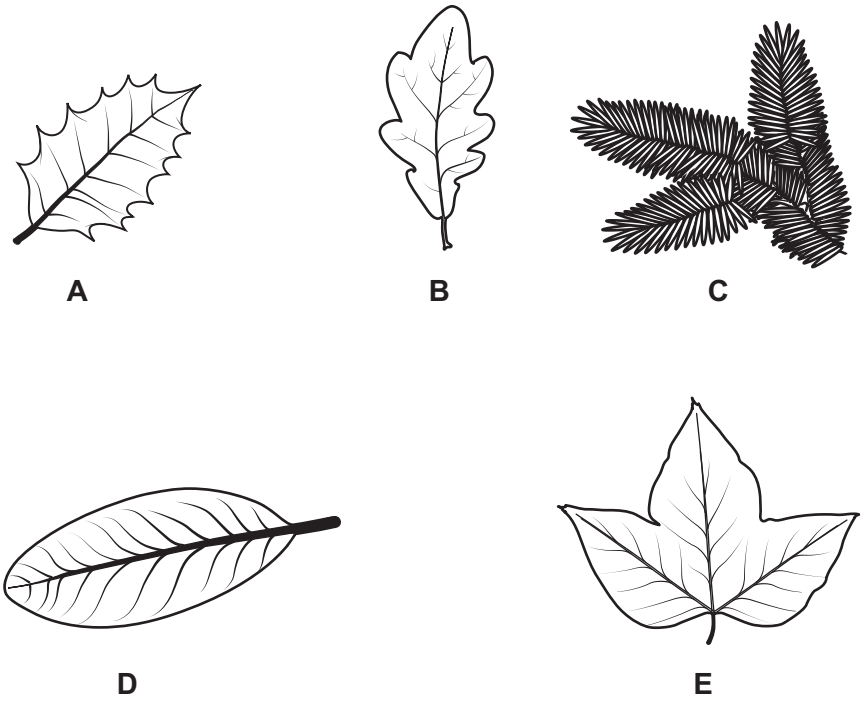
.....

..... [1]

4 Chen uses this key to identify plants that grow in his garden.



The diagram shows the leaves of five different plants that grow in his garden.



Write down the name of each of the five different plants.

A .....

B .....

C .....

D .....

E .....

[3]

5 This question is about energy.

(a) Complete the sentences to describe changes in energy.

Choose words from the list.

chemical **electrical** **heat**

light **sound**

Lily walks across a room.

Her body uses ..... energy from her food.

As Lily walks across the room, some of the energy is transferred to the room as

..... and ..... .

Lily switches on a lamp in her room.

..... energy is transferred as light.

[3]

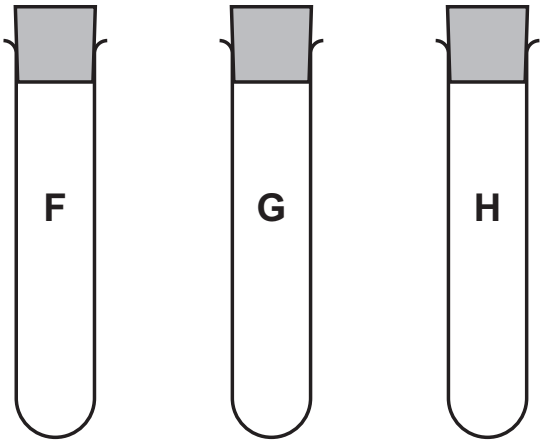
(b) Lily switches on a lamp in her room.

Some of the energy from the lamp is wasted and becomes less useful.

Which **word** describes what happens to energy that is wasted?

..... [1]

6 Oliver has three test-tubes of gas labelled **F**, **G** and **H**.



Write a plan for an investigation to identify which test-tube contains oxygen gas and which test-tube contains carbon dioxide gas.

Include the tests used and the observations for a positive result.

.....

.....

.....

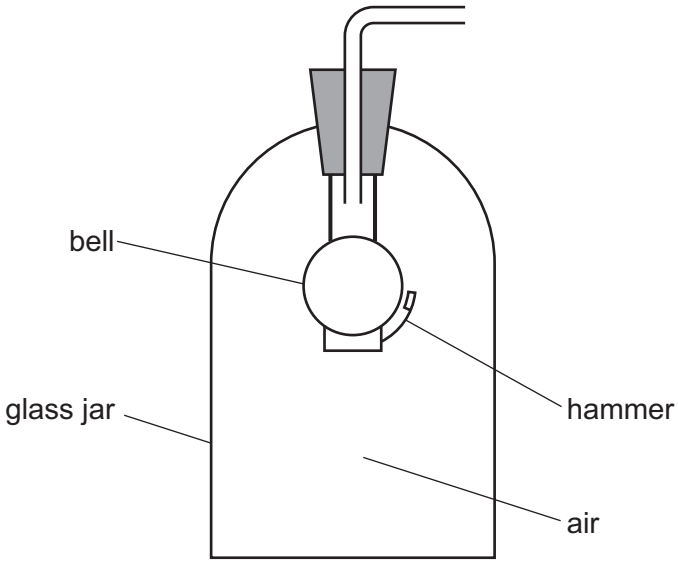
.....

.....

..... [4]

7 Carlos investigates sound using a bell in a glass jar.

Look at his assembled equipment.



(a) Explain why Carlos hears a sound when the hammer hits the bell.

.....

.....

.....

.....

..... [3]

(b) Carlos removes all of the air from the glass jar using a pump.

The hammer hits the bell.

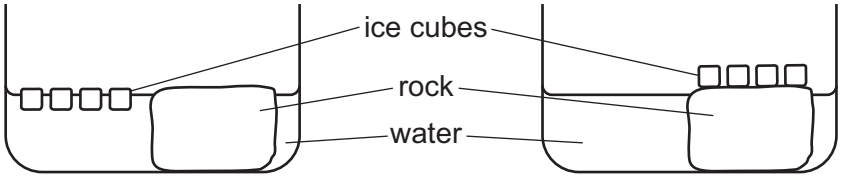
Explain why Carlos does **not** hear a sound when there is **no** air in the glass jar.

..... [1]

8 Youssef investigates the effect of melting ice on the height of water in a container.

Youssef:

- places an identical rock into each of two containers
- adds 4 ice cubes to the bottom of one container
- adds 4 ice cubes onto the top of the rock in the other container
- adds enough water to each container so that the water is just at the height of the rock
- measures the height of the water in each container
- allows the ice to completely melt and then measures the height of the water again.



(a) Write down **one** piece of equipment Youssef needs to make his measurements.

.....

[1]

(b) Here are the results.

container	height of water in cm		change in height of water in cm
	at start	after ice cubes melt	
ice cubes in water	4.3	4.3	0.0
ice cubes on rock	4.3	4.8	.....

Calculate the change in height of the water in the container with ice cubes on the rock.

Write your answer in the table. [1]

(c) Explain how the results show that ice melting on land leads to a rise in sea level.

.....

.....

[1]

9 Blessy investigates the height of some Class 7 learners.

(a) Suggest why Blessy tells the Class 7 learners they **must** take their shoes off for this investigation.

.....

..... [1]

(b) Blessy wants to stand on a chair to measure the height of one of the learners.

Suggest why the teacher tells Blessy **not** to stand on the chair.

.....

..... [1]

(c) Blessy records her results in a table.

Look at her results.

learner	height
A	172 cm
B	1590 mm
C	1.52 m
D	1.6 m
E	160 cm

(i) Suggest **one** way to improve how Blessy records the heights in the table.

.....

..... [1]

(ii) Blessy makes this conclusion from the data in the table of results.

'Every girl in Class 7 is taller than every boy in Class 7.'

Tick (✓) the box to show if her results support this conclusion.

yes ☐ no ☐

Write down **two** reasons for your answer.

1 .....

.....

2 .....

.....

[2]

10 Anastasia investigates four solutions, **J**, **K**, **L** and **M**, to see if they are acidic, alkaline or neutral.

She uses blue litmus and red litmus to test each solution.

Look at her results.

solution	colour change of red litmus	colour change of blue litmus	Is the solution acidic, alkaline or neutral?
J	turns blue	stays blue	
K	stays red	stays blue	
L	turns blue	stays blue	
M	stays red	turns red	

(a) Complete the last column of the table. [3]

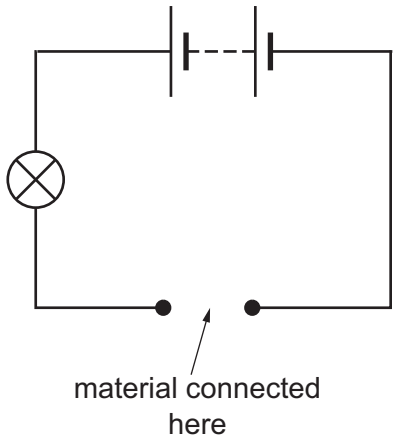
(b) Describe how Anastasia shows that two solutions have the same pH value.

.....

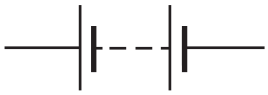
..... [1]

11 Priya investigates the electrical conductivity of some materials.

Look at the circuit she uses.



(a) Look at the electrical symbol for a component in this circuit.



Write down the name of this component.

..... [1]

(b) Why does Priya use a lamp in her circuit?

.....

..... [1]

(c) Priya tests four different materials.

aluminium **plastic** **copper** **wood**

Predict which of the materials are conductors.

Explain your answer.

conductors .....

explanation .....

.....

[2]

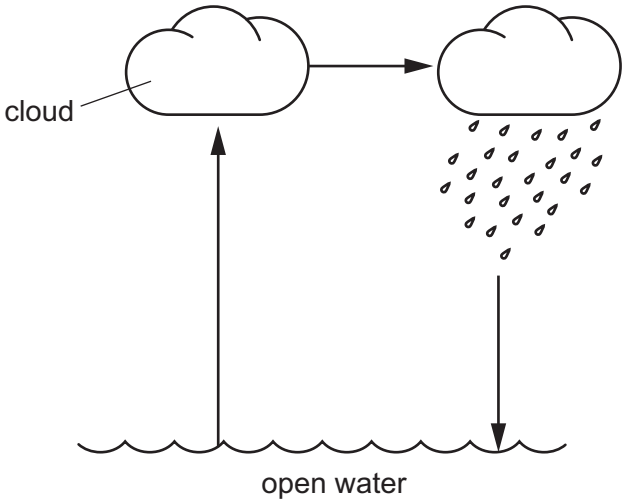
(d) Priya repeats her investigation.

Explain why this is a good idea.

.....

..... [1]

12 Look at the diagram of a simple water cycle.



Write down the names of **two** processes shown in the diagram.

1 .....

2 .....

[2]