Cambridge Secondary 1 Progression Test

Question paper

Cambridge Secondary 1

45 minutes

Science Paper 2

Stage 7

Name .....

Additional materials: Ruler

READ THESE INSTRUCTIONS FIRST

Answer **all** questions in the spaces provided on the question paper.

You should show all your working on the question paper.

The number of marks is given in brackets [ ] at the end of each question or part question.

The total number of marks for this paper is 50.

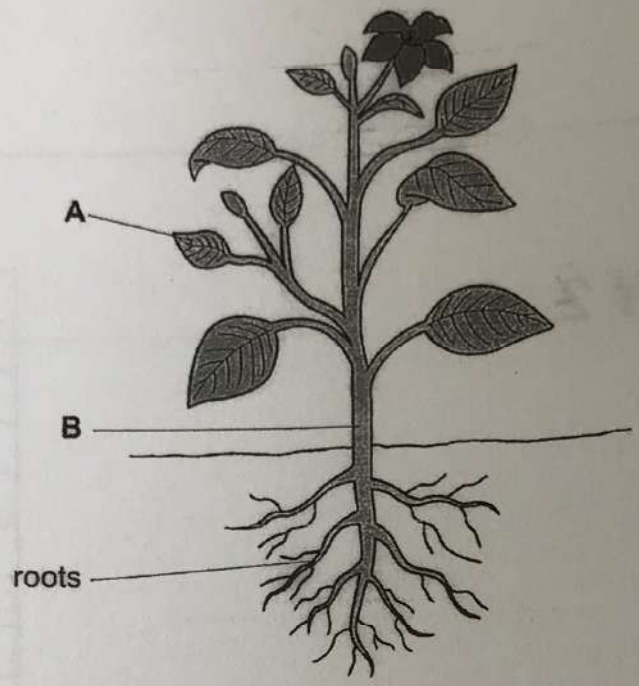
For Teacher's Use	
Page	Mark
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
Total	

DC (NH/SW) 85620/12RP

CAMBRIDGE International Examinations

For Teacher's Use

1 The diagram shows a flowering plant.



(a) Name parts **A** and **B**.

A .....

B .....[2]

(b) Write down **one** function of the roots.

.....

.....[1]

(c) Why does a plant like this produce flowers?

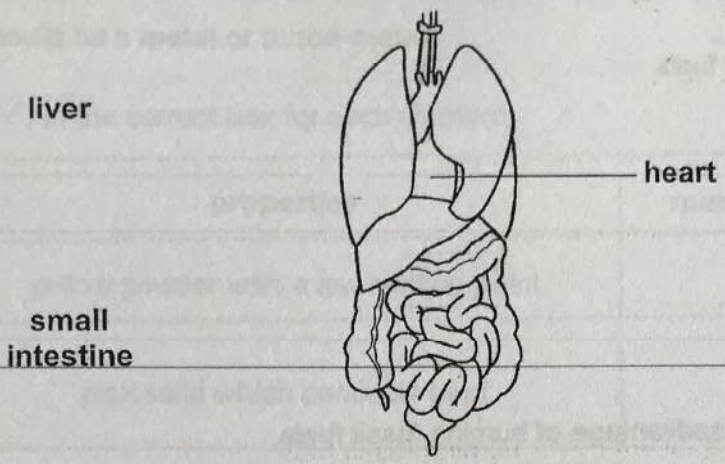
Circle the correct answer.

to absorb water **to attract insects** **to produce energy**

[1]

2 The diagram shows some of the major organs in the human body.

For Teacher's Use



The heart is labelled for you.

Draw label lines to show the position of:

(a) the liver [1]

(b) the small intestine. [1]

[Turn over

For Teacher's Use

3 This is a question about fuels.

(a) Name three fossil fuels.

1 .....

2 .....

3 .....[1]

(b) Write down **one** disadvantage of burning fossil fuels.

.....

.....[1]

(c) Wood is a type of biomass which can be used as fuel.

What is meant by the term **biomass**?

.....

.....[1]

(d) Wood is also a renewable fuel.

What is meant by the term **renewable**?

.....

.....[1]

(e) State **one** disadvantage to the environment of cutting down trees to get wood for fuel?

.....

.....[1]

4 The table shows the **properties** of six elements **A–F**.

Each **element** could be a **metal** or a **non-metal**.

Place **one** tick (✓) in the correct box for each element.

For Teacher's Use

element	properties	metal	non-metal
A	yellow powder with a low melting point		
B	pink solid which conducts heat		
C	hard, grey magnetic solid		
D	silver coloured liquid at room temperature which conducts electricity		
E	orange liquid which does not conduct electricity		
F	colourless gas		

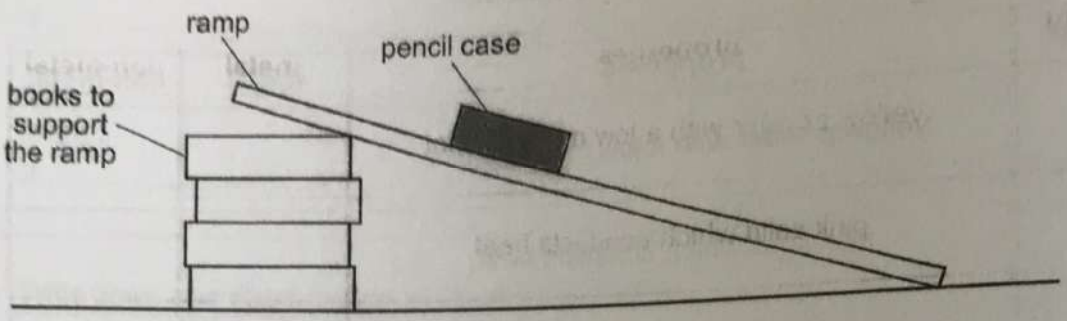
[4]

[Turn over

For Teacher's Use

5 Simran has been measuring the time taken for different objects to slide down a ramp.

The picture shows the ramp with one of the objects, a pencil case, on it.



(a) On the picture, draw an arrow to show the direction of the force of friction on the pencil case. [1]

(b) When timing the different objects, the test should be made fair.

One factor to keep constant is the distance that the object slides.

State two **other** factors which need to be kept the same for each test.

1 .....

2 .....[2]

Simran repeats the test with the pencil case and records the results in this table.

object	first time in s	second time in s	third time in s
pencil case	1.2	2.5	1.3

She thinks there may be something wrong with her second time.

For Teacher's Use

(c) Why might she think this?

.....

.....[1]

(d) How could she check if the second time was wrong?

.....

.....[1]

For Teacher's Use

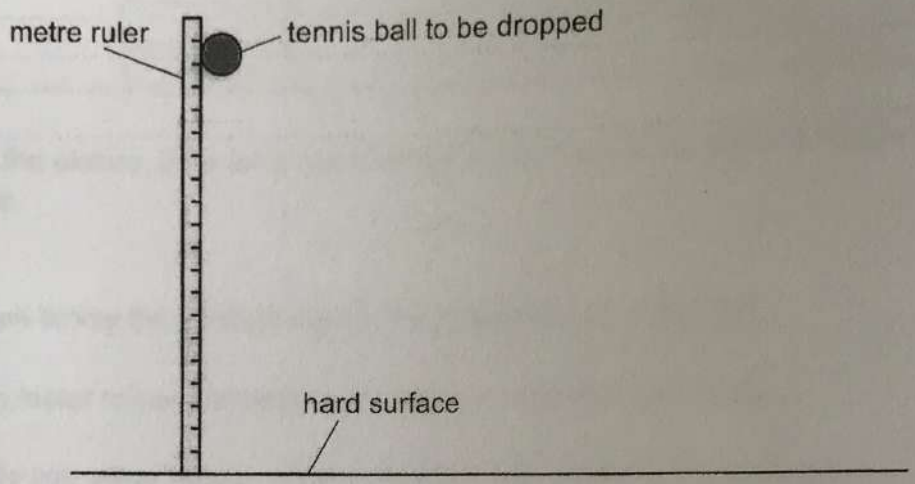
8 Liz and Rena investigate how high a ball bounces.

They use a metre ruler and a tennis ball.

Liz drops the ball from different heights.

Rena watches and records the height of the first bounce.

They measure the height from the bottom of the ball.



(a) Write down **one** reason why Rena will find it difficult to record the height of the bounce accurately.

.....

.....[1]

Liz and Rena repeat each test three times and work out the average for each.

They measure in centimetres (cm).

They record their results in the table below.

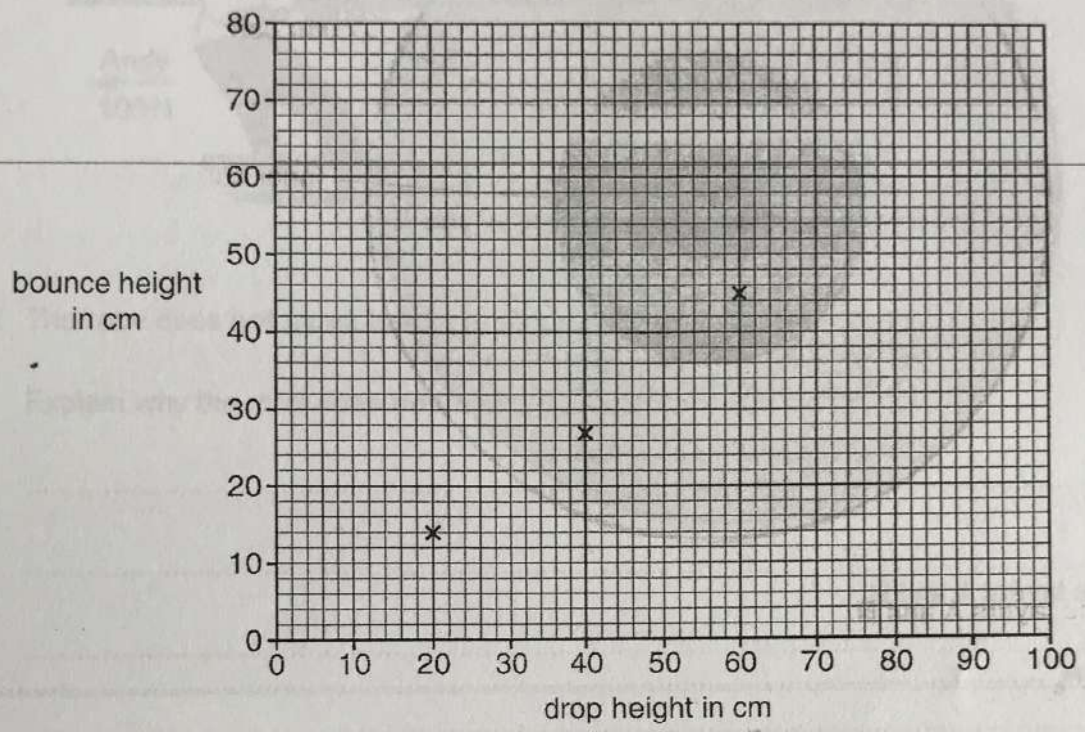
drop height in cm	average bounce height in cm
20	14
40	27
60	45
80	56
100	69

For Teacher's Use

They have plotted three of their results on a graph.

(b) Complete the graph by:

- plotting the last two points
- drawing a **best fit straight line.**



[2]

(c) One advantage of plotting a graph is that the trend can be seen more clearly than in the table.

Write down **one** other advantage of displaying results in a graph.

.....

.....[1]

(d) Another group in the class does the test.

They plotted their results on a similar graph.

Their points were all far from their line.

What does this suggest about their results?

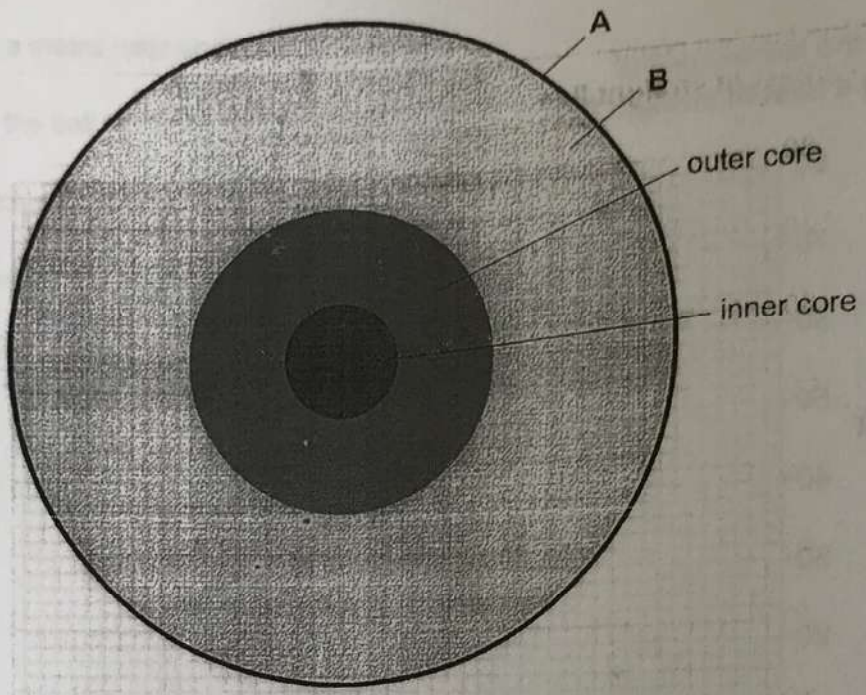
.....

.....[1]

[Turn over

For Teacher's Use

9 The diagram shows a model for the internal structure of the Earth.



(a) Name layers **A** and **B**.

layer **A** .....

layer **B** .....[2]

(b) Complete the sentences.

Use the words from the list below.

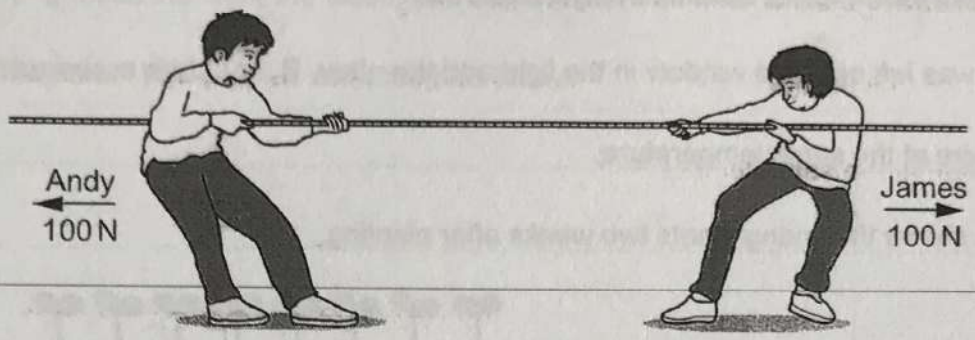
copper **liquid** **gas** **iron** **solid** **nickel**

The inner core is a ..... and it is made of ..... .

[2]

10 Andy and James are pulling on a rope.

The size and direction of their pulling forces are shown.



(a) The rope does **not** move toward Andy or James.

Explain why the rope does **not** move.

.....

.....

.....

.....[2]

(b) Andy keeps pulling with the same force of 100 N.

The rope now starts to move towards him.

What must have happened to the pulling force from James?

.....

.....[1]

For Teacher's Use

[Turn over

For Teacher's Use

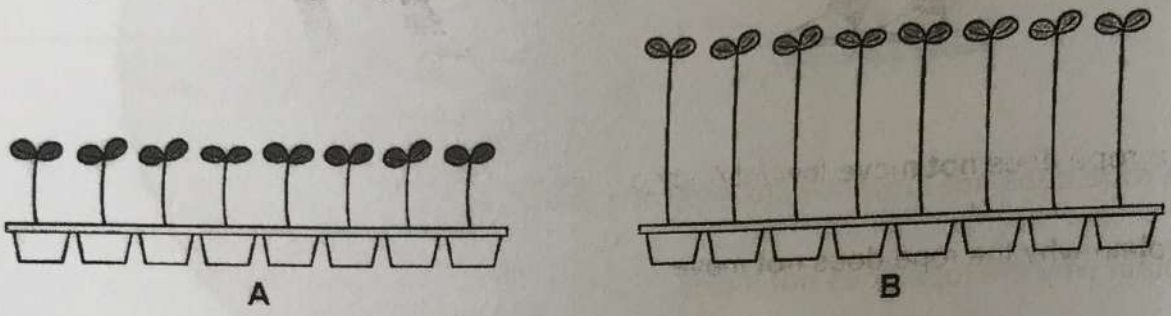
11 Colin puts two identical trays containing soil and seeds in the classroom.

He gave each tray the same amount of water every day.

One tray, **A**, was left beside a window in the light and the other, **B**, in a dark cupboard.

Both trays were at the same temperature.

The diagram shows the young plants two weeks after planting.



(a) Write down two **differences** that you can see between the plants in trays **A** and **B**.

1 .....

2 .....[2]

(b) Tick (✓) **two** boxes to show the correct facts about light.

light is a form of energy	☐
light is given out by the window	☐
light is the same as heat	☐
the Sun is a light source	☐
the moon is a light source	☐

[2]

(c) These plants need the soil to be at neutral pH.

Write down the pH of the soil when it is neutral.

pH ..... [1]

12 Up until the time of Copernicus (1473–1543) most people believed that the Earth was at the centre of the universe.

For Teacher's Use

They thought that the Sun, the Moon, planets and stars all went around the Earth.

(a) What part of this belief is still accepted today?

.....

.....[1]

(b) What observations did people make which caused them to conclude that all these objects went around the Earth?

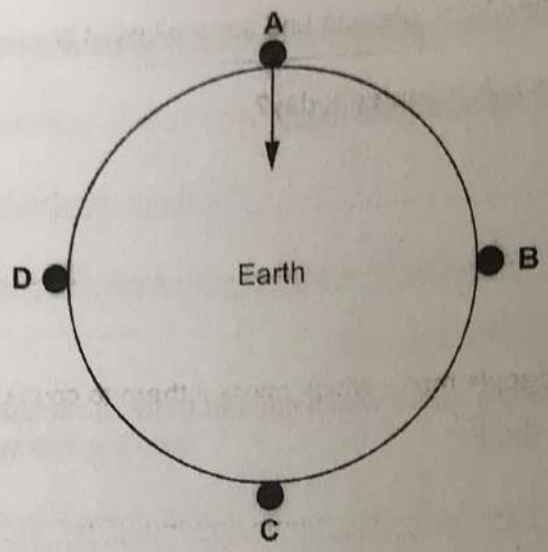
.....

.....[1]

[Turn over

For Teacher's Use

13 The diagram shows four large objects, A to D, at different places on the Earth's surface.



(a) Draw arrows from the objects to show the force of gravity on them.

The first one has been done for you. [2]

(b) The Moon has a smaller force of gravity than the Earth.

Use this information to complete the sentences.

Use the words from the list below.

greater **the same** **less**

The **mass** of object **A** will be ..... when placed on the Moon.

The **weight** of object **A** will be ..... when placed on the Moon.

[2]

14 Indicators can be used to test for acids, alkalis and neutrals.

For Teacher's Use

Look at the colours of three different indicators.

	result with		
	acid	**alkali**	**neutral**
indicator **A**	red	blue	purple
indicator **B**	red	yellow	orange
indicator **C**	colourless	pink	colourless

Aluminium sulfate is used in water purification.

Zaon tests aluminium sulfate solution with three indicators **A**, **B** and **C**.

Here are his results.

	result with		
	indicator A	**indicator B**	**indicator C**
aluminium sulfate	red	red	colourless

Suggest a pH value for aluminium sulfate solution?

.....

Explain your answer.

.....[2]

BLANK PAGE