



## Cambridge Lower Secondary Checkpoint

CANDIDATE  
NAME

CENTRE  
NUMBER

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CANDIDATE  
NUMBER

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**SCIENCE**

**1113/02**

Paper 2

**April 2022**

**45 minutes**

You must answer on the question paper.

No additional materials are needed.

### INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You should show all your working in the booklet.
- You may use a calculator.

### INFORMATION

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

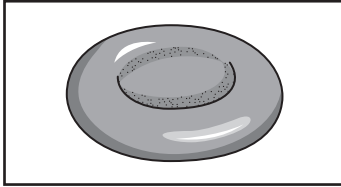
This document has **20** pages.

1 Draw **one** line from each **cell drawing** to its correct **function**.

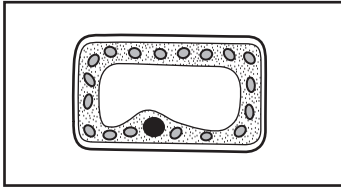
Draw only **five** lines.

**cell drawing**

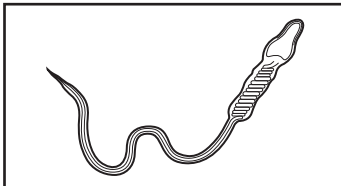
**function**



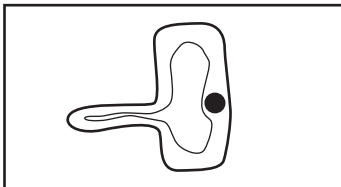
makes sugar using photosynthesis



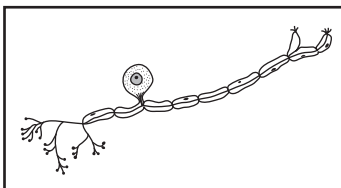
contracts to cause movement



joins with an egg



pollinates the stigma of a flower



detects changes in the surroundings

absorbs water and minerals

transports oxygen

[4]

2 Pierre reacts metal compounds and acids to make three different salts.

The table shows the metal compounds and the acids Pierre uses.

(a) Complete the table to show the salts the reactions make.

metal compound	acid	salt made
calcium carbonate	nitric acid	.....
sodium hydroxide	sulfuric acid	.....
potassium hydroxide	hydrochloric acid	.....

[3]

(b) When calcium carbonate reacts with nitric acid a gas is made.

Write down the name of this gas.

..... [1]

3 This question is about the Sun and the Moon.

(a) Why does the Sun appear to move across the sky?

..... [1]

(b) The Sun is a **source** of light.

(i) Describe how we see the Sun.

.....  
..... [1]

(ii) Write down the name of **another** source of light in space.

..... [1]

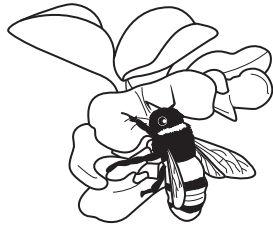
(c) The Moon is **not** a source of light.

Explain why we see the Moon.

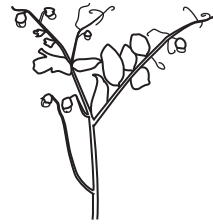
.....  
..... [1]

4 The diagram shows six stages in the life cycle of a pea plant.

The stages are **not** in the correct order.



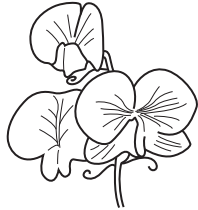
A



B



C



D



E



F

NOT TO SCALE

Write the letters to show the stages in the correct order.

Two of the stages have been done for you.

.....	.....	<b>B</b>	<b>D</b>	.....	.....
-------	-------	----------	----------	-------	-------

[2]

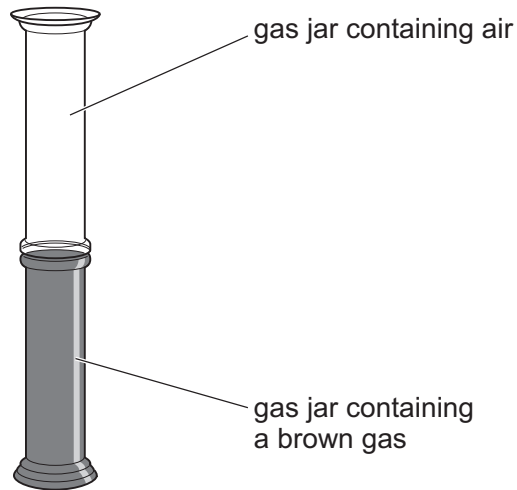
5 The table shows the properties of solids, liquids and gases.

(a) Complete the table.

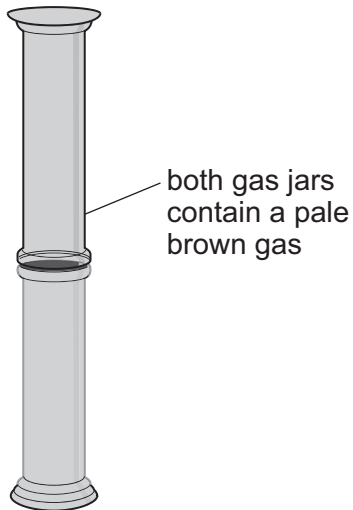
	arrangement of particles	movement of particles
<b>solid</b>	.....	.....
<b>liquid</b>	close together	.....
<b>gas</b>	.....	move quickly

[2]

(b) This diagram shows two gas jars that have just been joined together.



This diagram shows the two gas jars 10 minutes later.



(i) Name the process that happens during the 10 minutes.

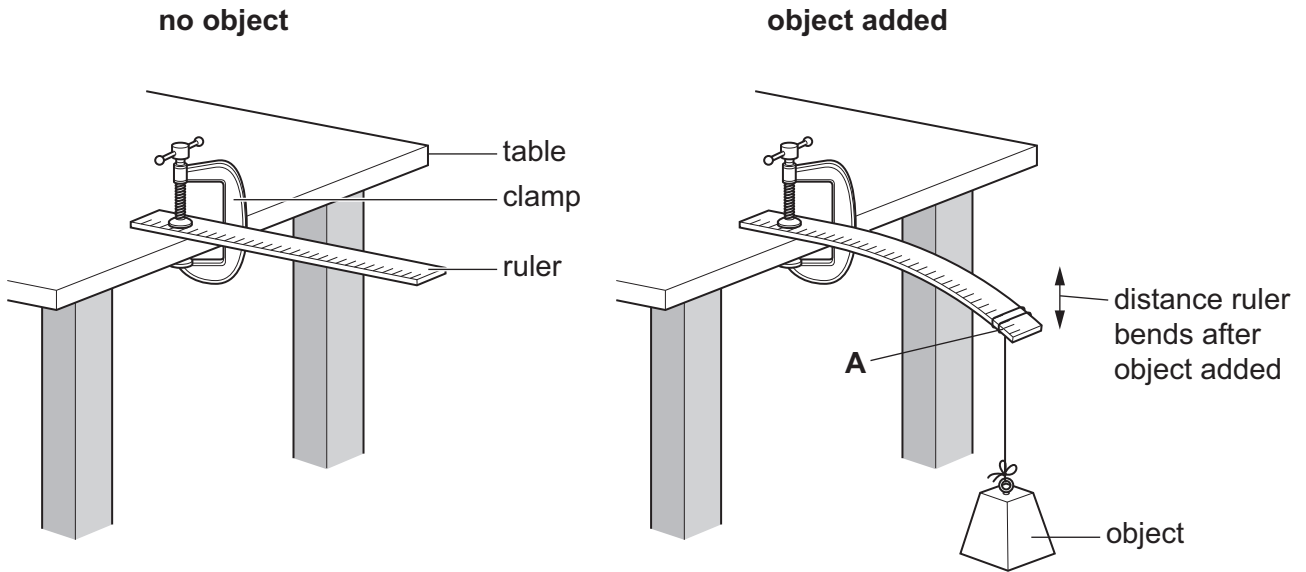
..... [1]

(ii) Describe how the process happens.

Use ideas about particles.

.....  
..... [1]

6 Chen investigates how much a ruler bends when he adds different objects.



He adds the objects at position **A**.

He writes his results in a table.

weight of object in N	distance ruler bends after object added in cm
0	0.0
1	2.1
2	4.0
3	6.1
4	8.2

(a) (i) Describe what happens as the weight of the object increases.

..... [1]

(ii) Explain why this happens.

.....  
 ..... [1]

**(b)** Chen repeats the investigation.

He moves the object **closer** to the clamp.

The object has a weight of 2 N.

**(i)** Predict the distance the ruler will bend.

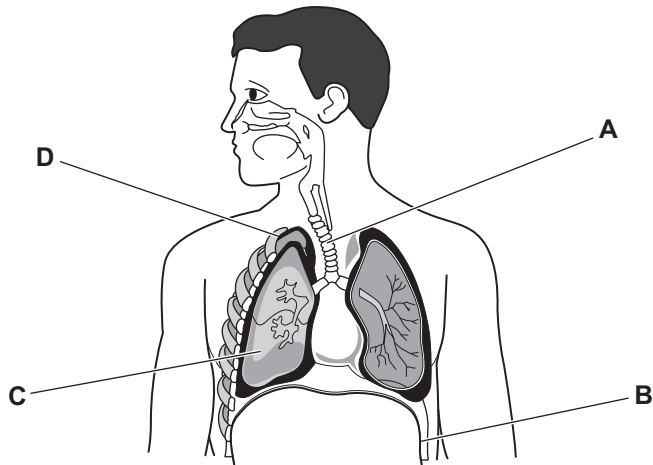
..... cm [1]

**(ii)** Explain your prediction in **(b)(i)**.

Use ideas about the principle of moments in your answer.

.....  
.....  
..... [2]

7 The diagram shows the human respiratory system.



(a) (i) Circle the letter on the diagram that identifies the **diaphragm**. [1]

(ii) Write down **one** function of the diaphragm.

.....  
..... [1]

(b) (i) Write down **one** function of the air sacs (alveoli) inside the lungs. [1]

..... [1]

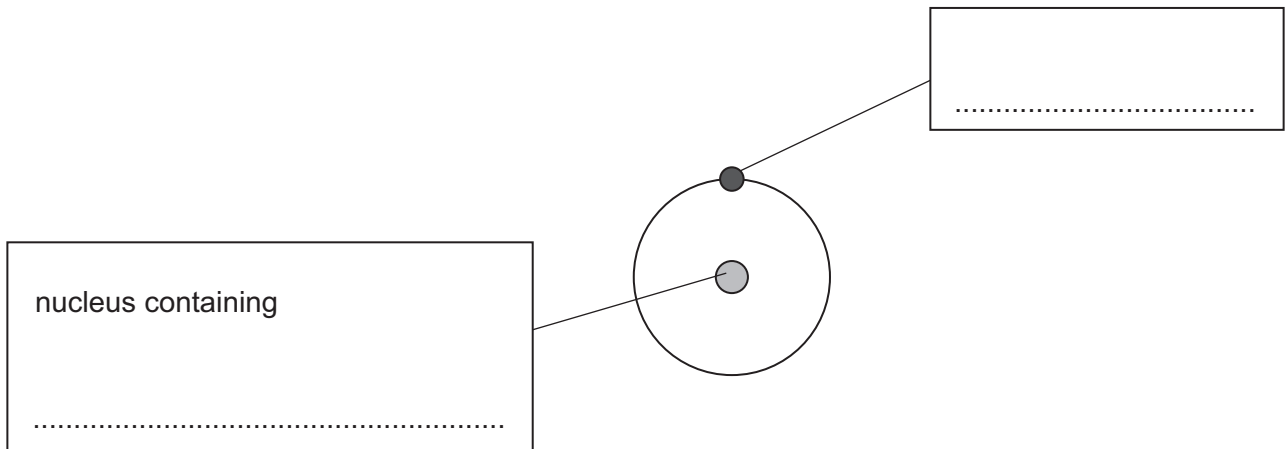
(ii) Describe **one** way the air sacs are adapted for their function.

.....  
..... [1]

8 The diagram shows an atom of hydrogen.

The nucleus contains only one particle.

(a) Complete the labels on the diagram.

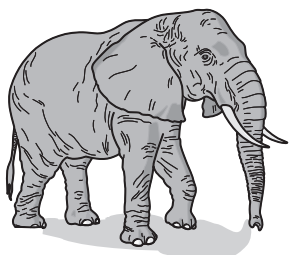


[2]

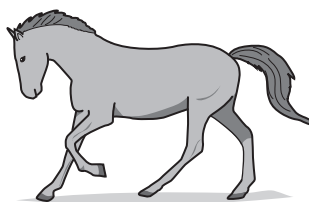
(b) Write down the chemical symbol for hydrogen. ....

[1]

- 9 Yuri investigates why the size of the leg of an elephant is different from the size of the leg of a horse.



5000 kilograms



500 kilograms

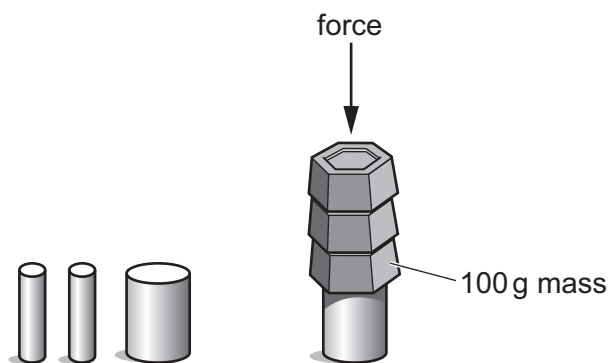
NOT TO SCALE

Yuri makes model legs of both animals.

He uses modelling clay to make different-sized cylinders.

Yuri places one cylinder on a desk.

He places 100 g masses on top of this cylinder until the cylinder starts to squash and change shape.



modelling clay cylinders

Yuri tests **two** different diameters of cylinder.

- (a) The cylinders are all cut to the same length.

Explain why this is important.

.....

..... [1]

(b) What equipment does Yuri use to measure the diameter of the cylinders?

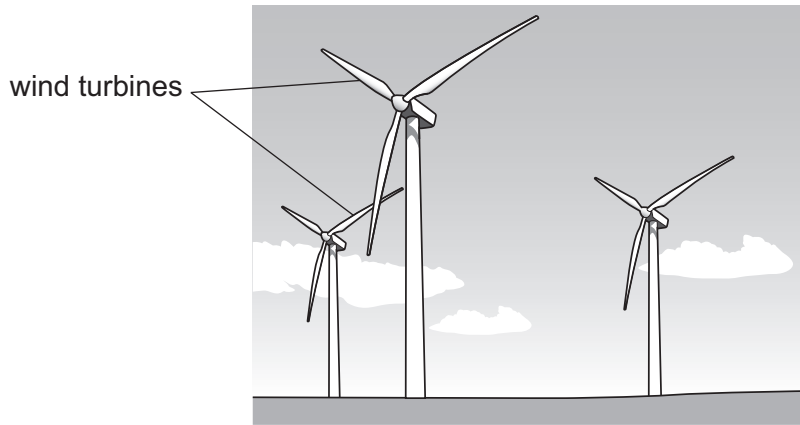
..... [1]

(c) Yuri uses **two** cylinders for each diameter.

Explain why using **two** cylinders is important.

.....  
..... [1]

10 Wind is an energy resource.



(a) Wind turbines supply energy.

Suggest **two disadvantages** of using wind turbines.

1 .....

.....

2 .....

.....

[2]

(b) People in many countries are trying to **increase** the number of wind turbines.

Suggest why.

.....

.....

.....

[2]

11 Gasoline burns in oxygen to make carbon dioxide and water.

Circle **two** words that describe this reaction.

displacement

endothermic

exothermic

neutralisation

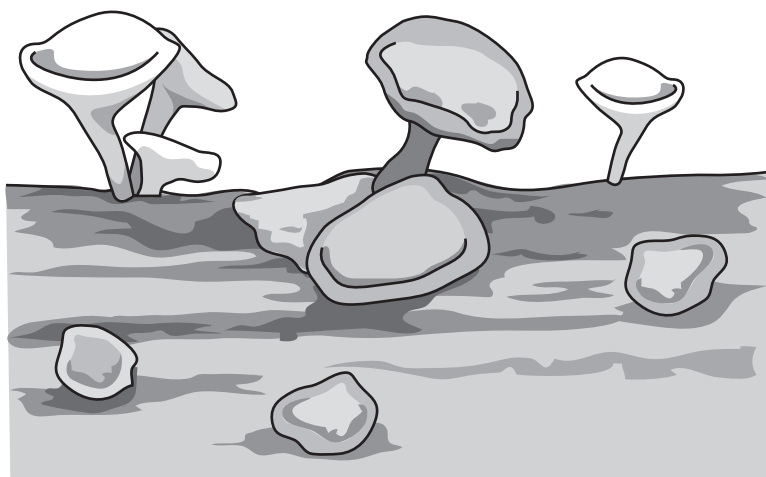
oxidation

respiration

rusting

[2]

12 The diagram shows fungi growing on a piece of wood.



Fungi are decomposers.

What are decomposers? .....

.....

.....

Why are decomposers important? .....

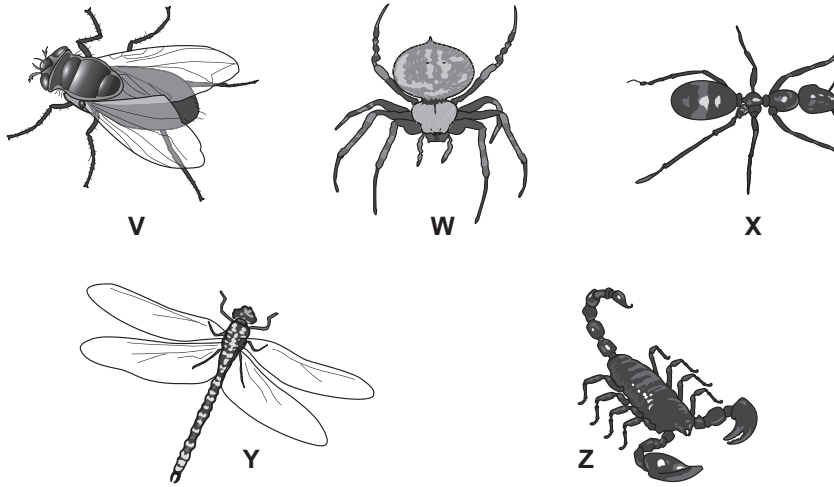
.....

.....

[2]

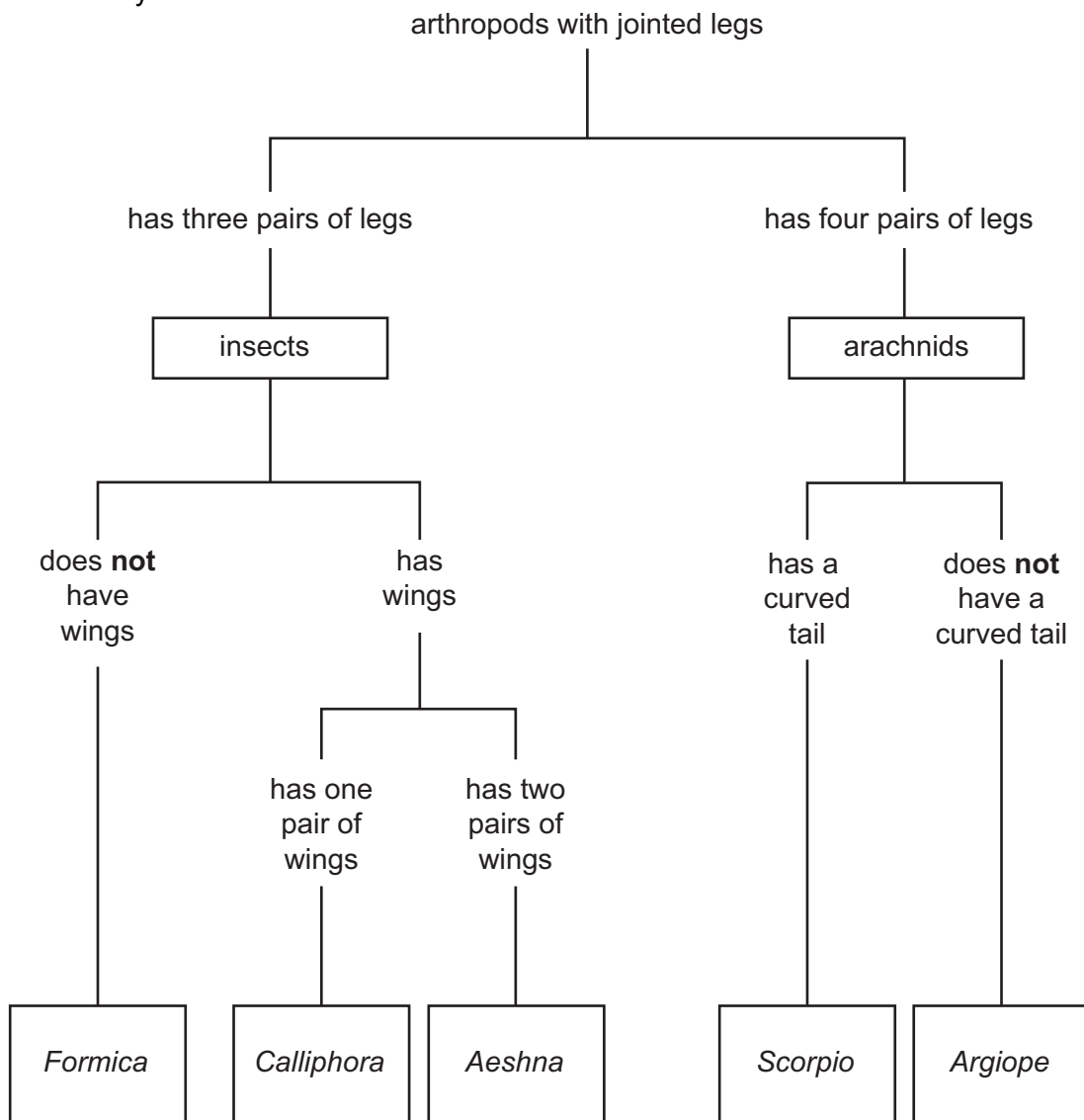
13 The diagram shows five arthropods.

These arthropods all have jointed legs.



NOT TO SCALE

Look at the key.



Use the key to find the names of arthropods **V**, **W**, **X**, **Y** and **Z**.

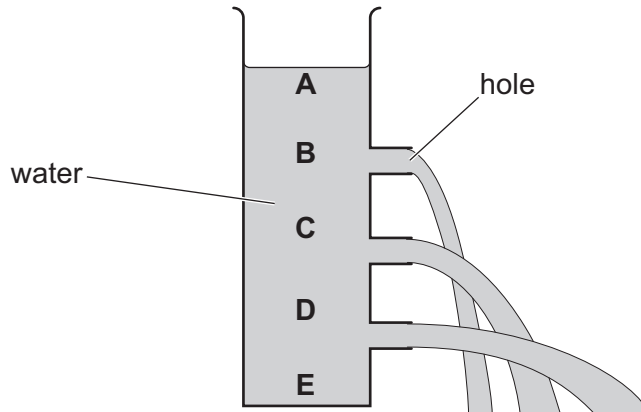
Write your answers in the table.

name	letter
<i>Aeshna</i>	.....
<i>Argiope</i>	.....
<i>Calliphora</i>	.....
<i>Formica</i>	.....
<i>Scorpio</i>	.....

[2]

14 Lily investigates water pressure.

(a) Water is inside a container with holes in one side.



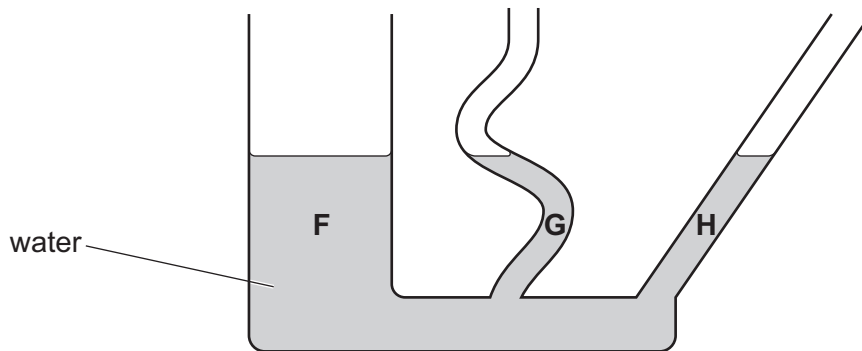
Where is the water pressure the **greatest**?

Circle the correct answer.

- A                      B                      C                      D                      E

[1]

(b) Water is inside a different shaped container.



Compare the water pressure at **F**, **G** and **H**.

.....  
.....

[1]

15 Potassium is an element in Group 1 of the Periodic Table.

(a) Look at the word equation.



Write down the name of **one product** of this reaction.

..... [1]

(b) Look at the order of the elements in Group 1 of the Periodic Table.

<b>Li</b>	lithium
<b>Na</b>	sodium
	potassium
<b>Rb</b>	rubidium
<b>Cs</b>	caesium
<b>Fr</b>	francium

(i) What is the chemical symbol for potassium?

Circle the correct answer.

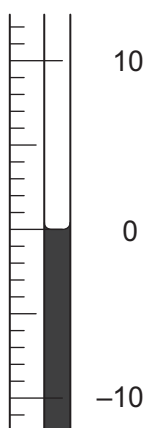
**K**                      **N**                      **Na**                      **P**                      **Po**

[1]

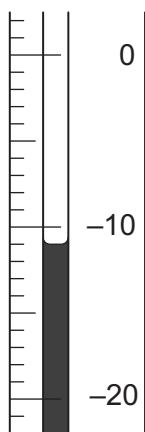
(ii) Predict which Group 1 element reacts the **fastest** with water. .... [1]

16 Angelique measures the temperature of three samples of water.

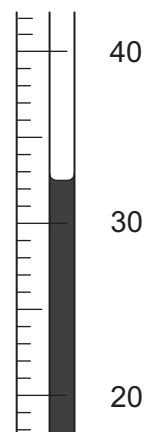
The diagrams show her results.



thermometer **A**



thermometer **B**



thermometer **C**

Record the temperature of each thermometer in the table.

thermometer	temperature in °C
<b>A</b>	.....
<b>B</b>	.....
<b>C</b>	.....

[2]

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