

CANDIDATE
NAME

CENTRE
NUMBER

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CANDIDATE
NUMBER

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* 2 4 8 2 1 0 3 6 1 8 *

SCIENCE

1113/01

Paper 1

April 2017

45 minutes

Candidates answer on the Question Paper.

Additional Materials: Pen Calculator
 Pencil
 Ruler

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

You should show all your working in the booklet.

At the end of the examination, fasten all your work securely together.

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.

This document consists of **17** printed pages and **3** blank pages.

1 Plants and animals contain cells.

(a) Complete the table.

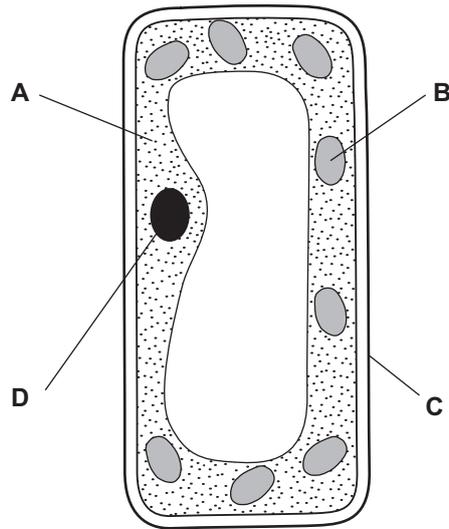
Tick (✓) if the structure is present.

The first one has been done for you.

structure	plant cell	animal cell
nucleus	✓	✓
cell wall		
cytoplasm		
cell membrane		
vacuole		

[2]

(b) This is a diagram of a plant cell.



Draw a line from each **letter** to its correct **name** and **function** in the plant cell.

name	letter	function
cell wall	A	where photosynthesis happens
chloroplast	B	where chemical reactions occur
cytoplasm	C	contains genetic information
nucleus	D	rigid to support the cell

[4]

2 This question is about the structure of the Earth.

(a) Draw straight lines to match the part of the **Earth's structure** with its **description**.

Earth's structure	description
core	centre of the Earth
crust	part made of liquid rock
mantle	outer part

[2]

(b) The Earth is made up of three different types of rock.

One type is sedimentary rock.

Write the names of the **other two** types of rock.

..... and [2]

(c) Sedimentary rocks sometimes contain the remains of dead animals and plants.

What is the name of these remains found in rocks?

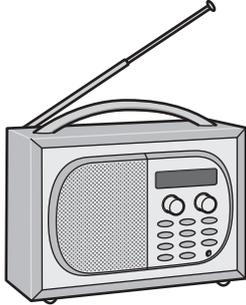
Tick (✓) the correct box.

crystal	<input type="checkbox"/>
fossil	<input type="checkbox"/>
mineral	<input type="checkbox"/>
rock	<input type="checkbox"/>

[1]

3 Here are six objects.

Each of these objects transfers energy into useful types of energy.

 <p>.....</p>	 <p>.....</p>	 <p>.....</p>
 <p>.....</p>	 <p>.....</p>	 <p>.....</p>

Write down the **useful** type of energy released below each object.

Choose the type of energy from

electrical

kinetic

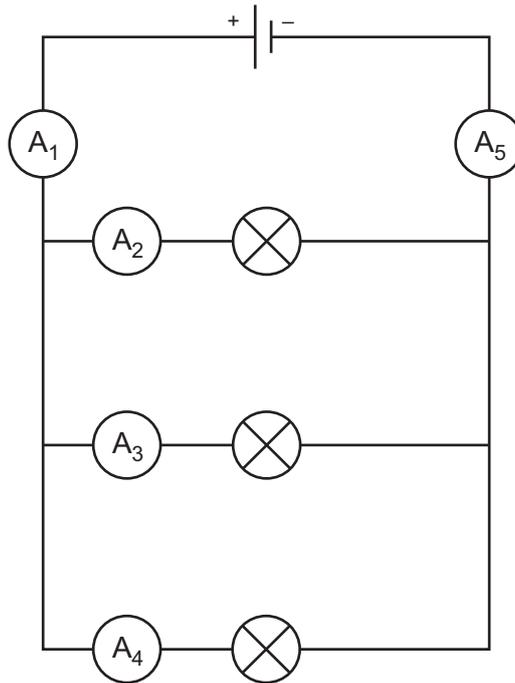
light

sound

thermal

[3]

4 Mia connects an electrical circuit.



(a) What type of electrical circuit has Mia made?

..... [1]

(b) There are five components in the circuit with the letter **A** in a circle.

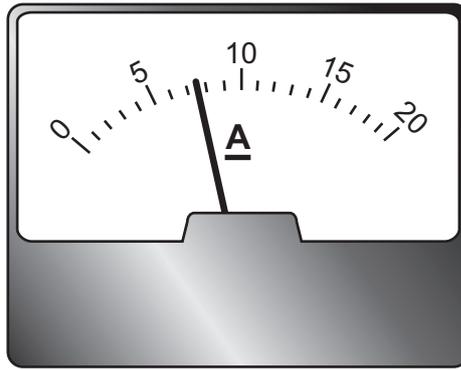
(i) Write down the name of this component.

..... [1]

(ii) What do these components measure?

..... [1]

(c) Here is a picture of component A_1 .



What is the reading on component A_1 ?

..... [1]

(d) Predict the reading on component A_5 .

..... [1]

5 The diagram shows the human circulatory system.

Four organs are labelled **A**, **B**, **C** and **D**.

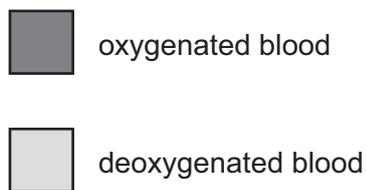
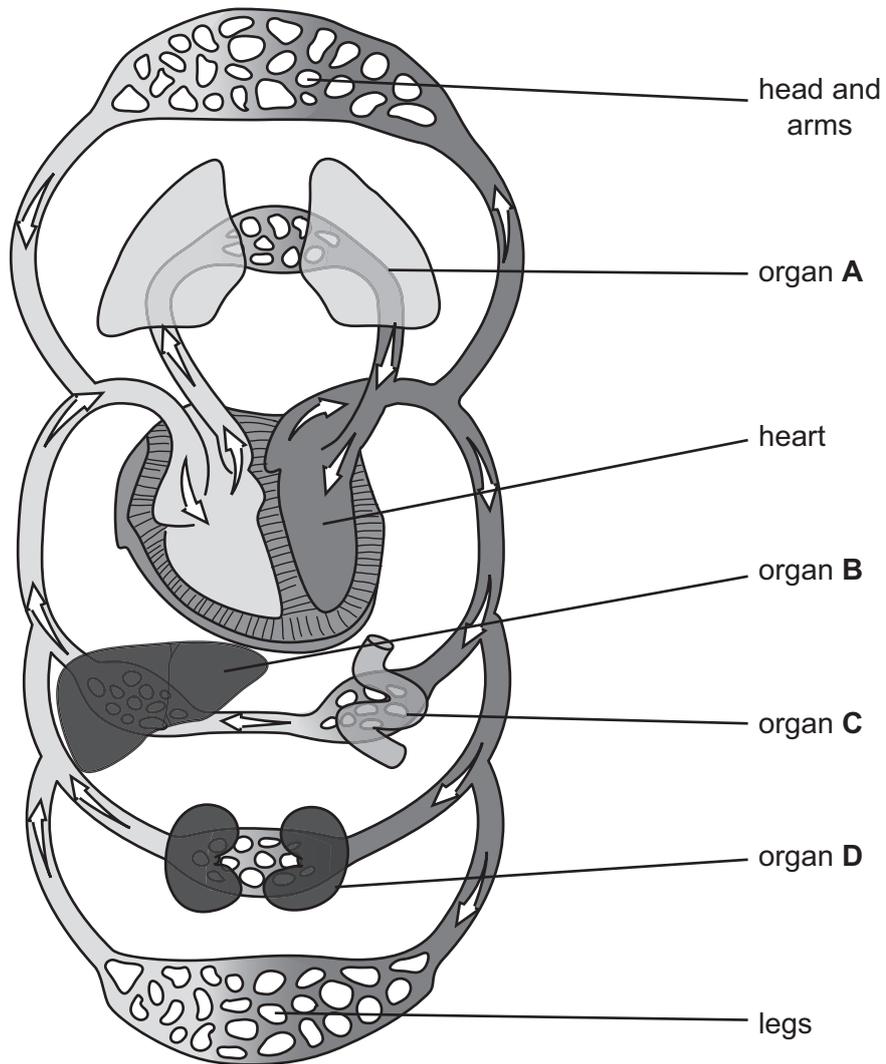


Diagram not to scale

(a) Look at the diagram and name the four organs.

A

B

C

D

[4]

- (b) Some substances leave the blood and other substances enter the blood when it travels through an organ.

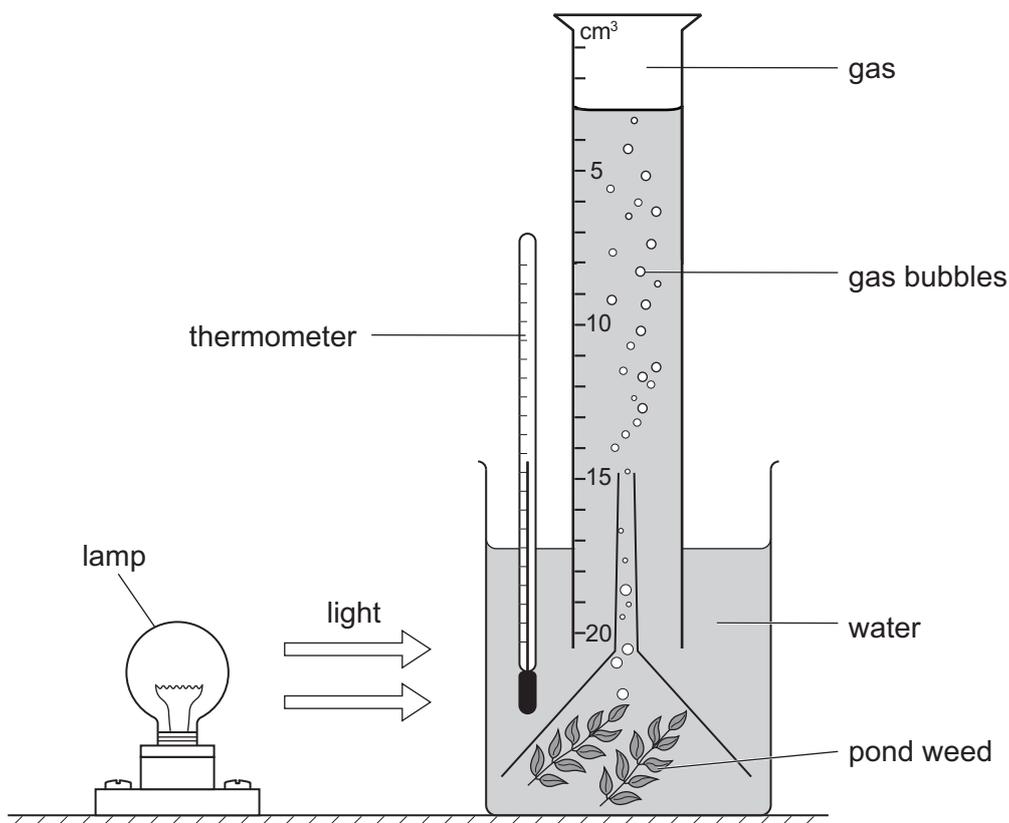
Complete the table by writing the letters of the organs in the correct boxes.

how the blood changes as it passes through the organ	letter
The concentration of nutrients increases .	
The concentration of carbon dioxide decreases and the concentration of oxygen increases .	

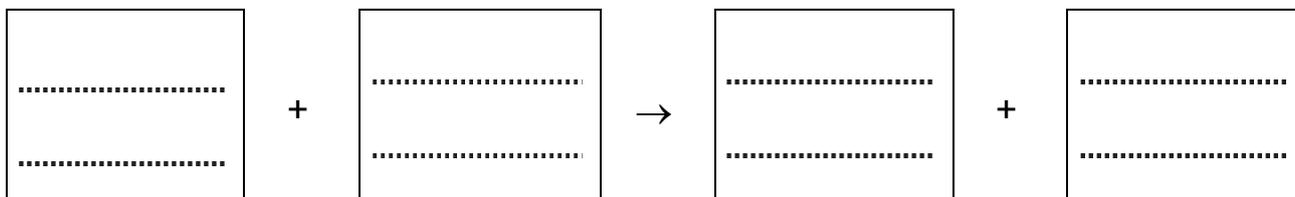
[2]

6 A group of students investigate photosynthesis using pond weed.

The diagram shows the equipment they use.



(a) (i) Write down the word equation for photosynthesis.



[2]

(ii) The diagram shows the volume of gas they collect after 5 minutes.

Write down this volume.

.....

[1]

(b) The students want to increase the volume of gas the pond weed makes in 5 minutes.

(i) The students use a drinking straw to bubble some of their breath into the water.

The volume of gas the pond weed makes increases.

Explain why.

..... [1]

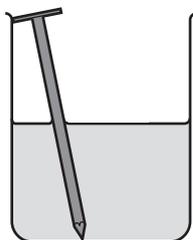
(ii) Suggest and explain one **other** way the students could increase the volume of gas this pond weed makes in 5 minutes.

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

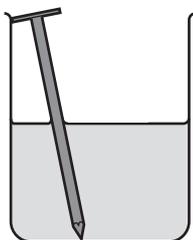
7 Youssef investigates what happens when iron is added to different solutions.

He puts four different metal salt solutions into four beakers.

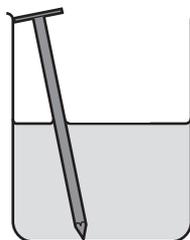
He then adds an iron nail to each beaker.



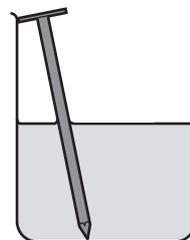
iron nail in
copper sulfate
solution



iron nail in
potassium nitrate
solution



iron nail in
lead nitrate
solution



iron nail in
silver nitrate
solution

After ten minutes Youssef records his observations.

metal salt solution	observation
copper sulfate	iron nail covered in a pink solid
potassium nitrate	no reaction
lead nitrate	iron nail covered with a black solid
silver nitrate	iron nail covered with a black solid

(a) Which variable does Youssef change in his investigation?

..... [1]

(b) Write down **one** variable Youssef needs to **control**.

..... [1]

(c) Youssef sets up another beaker.

This time he puts the nail in sodium chloride solution.

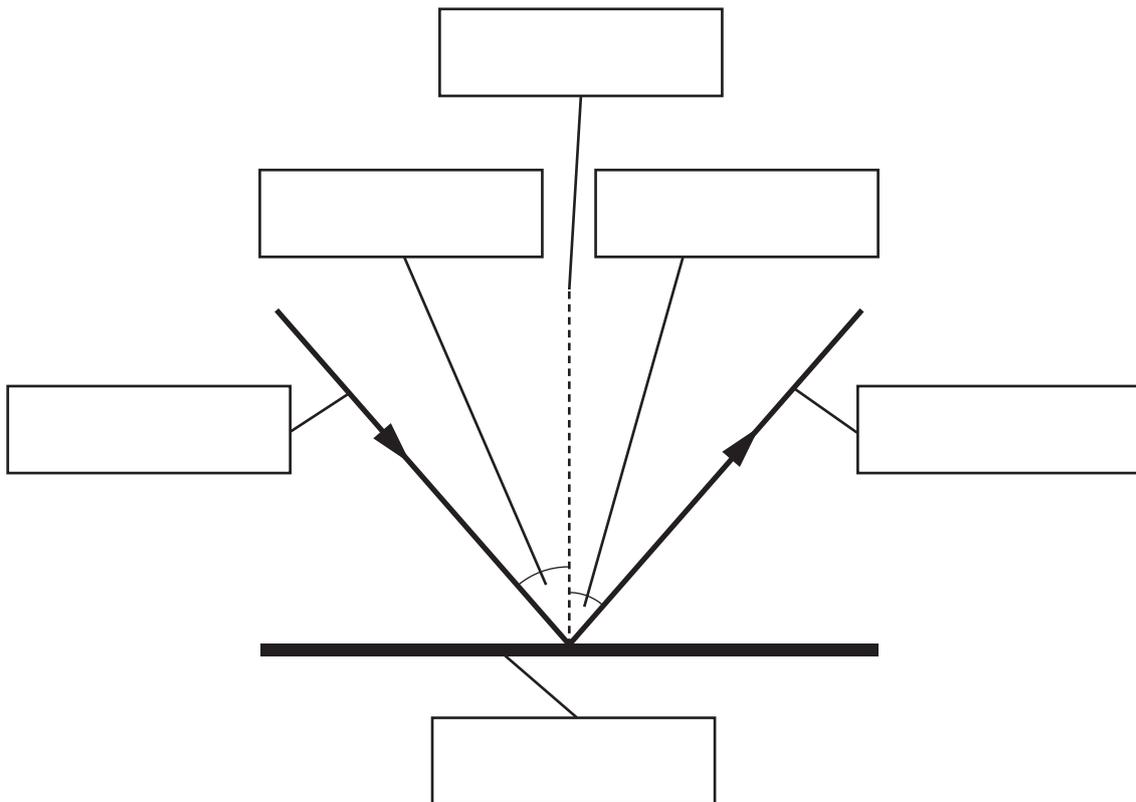
There is no reaction.

Explain why the nail in this beaker does **not** react.

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

8 Carlos learns about the law of reflection in a lesson.

He draws a diagram.



Label his diagram.

Use the following words.

angle of incidence

angle of reflection

incident ray

mirror

normal

reflected ray

[3]

9 This question is about the three states of matter.

(a) Which state of matter has the **strongest** forces between its particles?

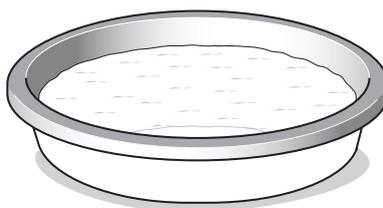
..... [1]

(b) Draw straight lines to match the **state of matter** with the **description** of the spacing of the particles.

state of matter	description
gas	spread far apart
liquid	closely packed in a regular pattern
solid	closely packed but not in a pattern

[1]

(c) Youssef puts a small amount of water into a flat dish.



He then leaves the dish outside in the warm sunshine.

After a while the water disappears.

Explain what happens to the water **particles**.

.....

 [2]

10 Look at the diagram. It shows some of the elements in the Periodic Table.

			H							He
Li				B	C		O	F		
Na				Al				Cl		
K		transition elements								

Use this Periodic Table to answer these questions.

(a) Write down the chemical symbol of the **most** reactive element in Group 1.

..... [1]

(b) An atom of an element has only **one** proton inside its nucleus.

Write down the chemical symbol for this element.

..... [1]

(c) Write down the chemical symbol of the element in Group 7 (Group 17) **and** Period 3.

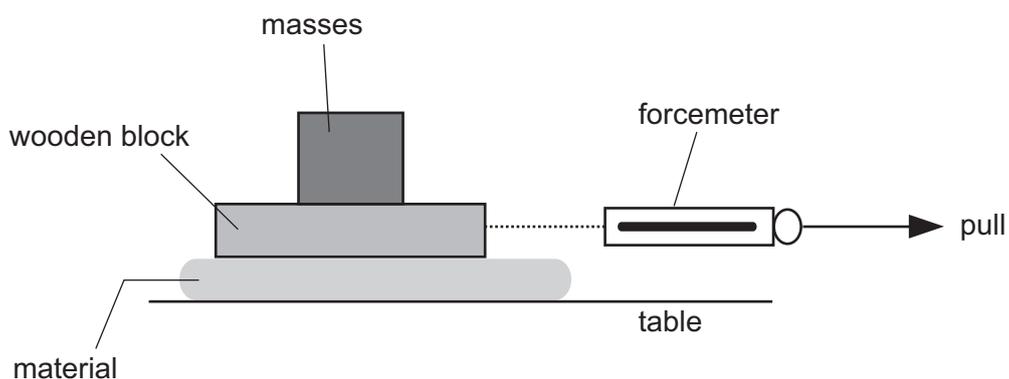
..... [1]

(d) Write down the **name** of the element in the same **group** as boron.

..... [1]

11 Priya and Lily investigate friction.

Here is the equipment they use.



They pull the wooden block with a forcemeter.

They repeat the investigation using different materials.

(a) Priya says

“We must be careful because we are using heavy masses.”

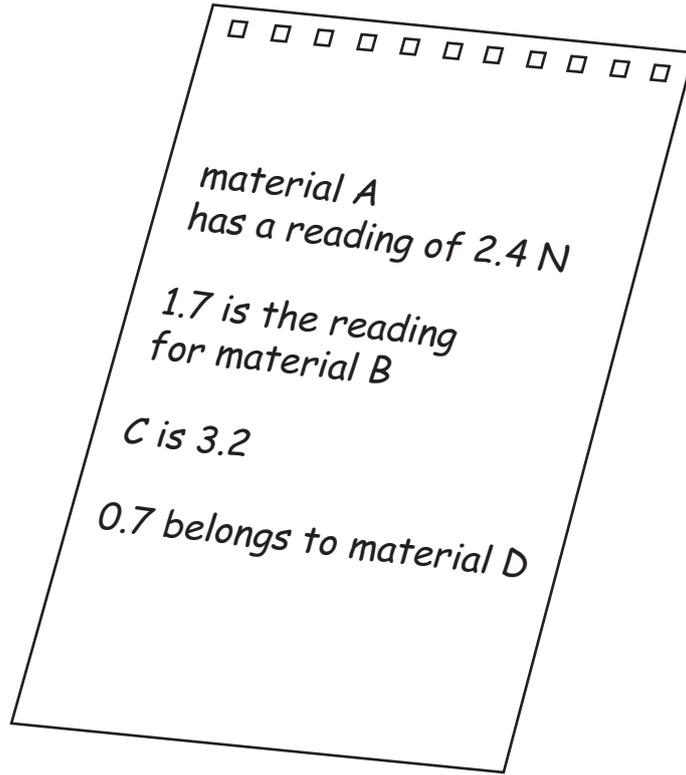
Lily says

“We must make this investigation safe.”

Describe **two** things they can do to reduce the risk of hurting themselves or others.

- 1
 - 2
- [2]

(b) Here are their results.



Complete Priya and Lily's results table.

.....	forcemeter reading in N

[2]

(c) Describe how they can make the results more reliable.

.....

..... [1]

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