Cambridge Assessment International Education

Cambridge Primary Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

SCIENCE **0097/02**

Paper 2

35 minutes

You must answer on the question paper.

No additional materials are needed.

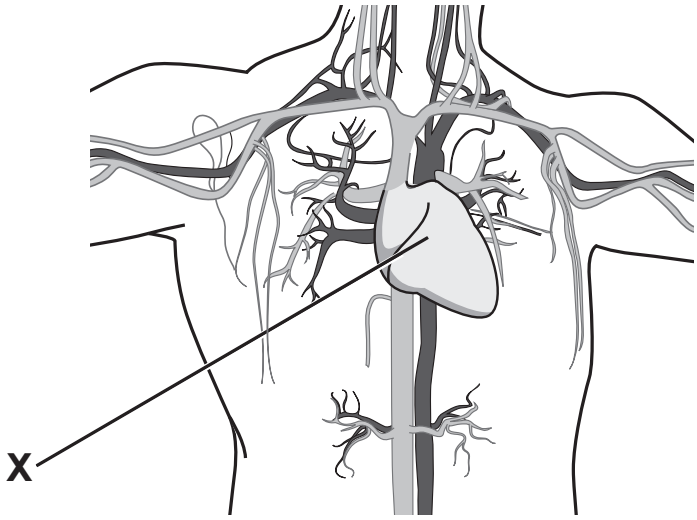
INSTRUCTIONS

- 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 40.
- The number of marks for each question or part question is shown in brackets [ ].

1 The diagram shows part of the circulatory system.



(a) Name the organ labelled **X**.

.....

[1]

(b) Describe the function of the organ labelled **X**.

.....

.....

[1]

(c) Write down the name of **two** types of blood vessel shown in the diagram.

1 .....

2 .....

[2]

(d) A scientist measures the percentage of oxygen in the blood travelling through different blood vessels.

The table shows the results.

blood vessel	percentage (%) of oxygen
A	99
B	79
C	83
D	75
E	92

The blood vessels are found in different parts of the body.

Which blood vessel transports blood **from** the lungs **to** the heart?

.....

Explain your answer.

.....

..... [2]

2 Chen finds information about the melting points and boiling points of some substances.

substance	melting point in °C	boiling point in °C
ethanol	−144	78
propanone	−95	56
salt solution	−6	106
water	0	100

(a) What is the meaning of the words **melting point**?

.....

.....

..... [2]

(b) Which substance has the greatest difference between its melting point and its boiling point?

..... [1]

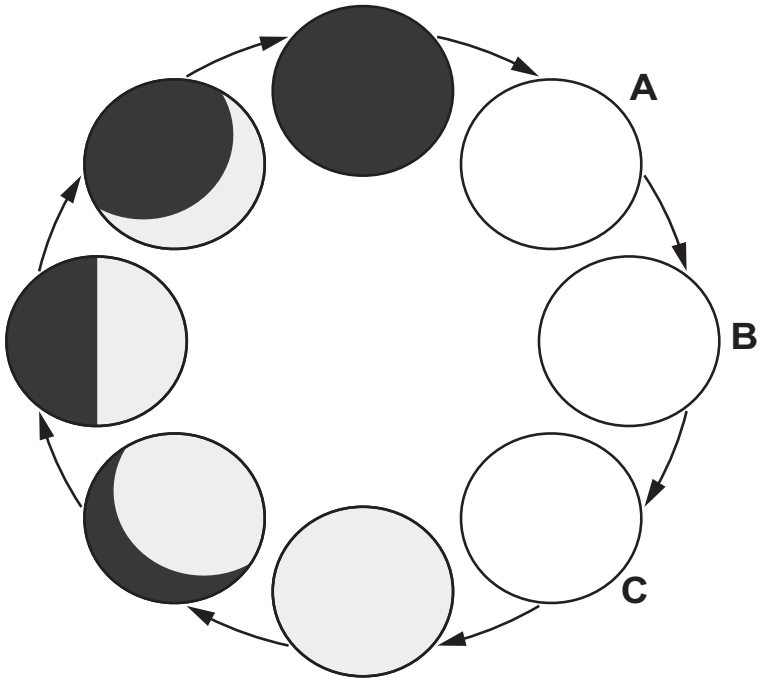
(c) Salt solution is a mixture of salt and water.

Describe the effect of adding salt to the boiling point of water.

..... [1]

3 Pierre draws a diagram.

The diagram shows the appearance of the Moon at different times during one cycle.



(a) Pierre did **not** draw the appearance of the Moon at times **A**, **B** and **C**.

He did **not** see the Moon at these times.

Suggest why he did **not** see the Moon at times **A**, **B** and **C**.

.....

..... [1]

(b) Look at the diagram.

There are eight circles on the diagram.

Complete circles **A**, **B** and **C** to show the appearance of the Moon at these times.

[2]

(c) How much time does it take the Moon to complete this cycle?

Circle the correct answer.

one day **one week** **one month** **one year**

[1]

4 Safia and Mia investigate floating.

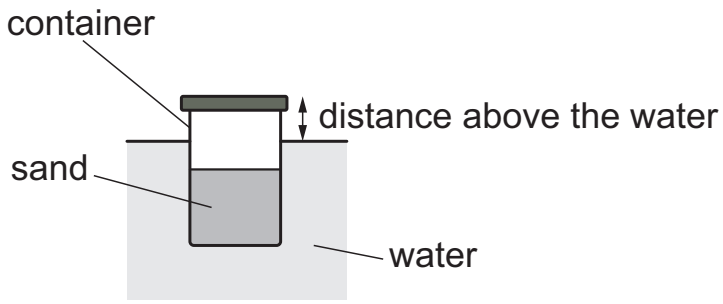
They use six identical small containers with lids.

Safia puts a different mass of sand into each container.

Mia drops the containers into the water.

All the containers float.

Look at the diagram of one of these containers.



Mia measures the distance above the water shown in the diagram.

Here are her results.

mass of sand in g	**distance above the water in cm**
2.5	4.0
5.0	3.5
7.5	3.0
10.0	2.5
12.5	3.0
15.0	1.5

(a) There is **one** anomalous result.

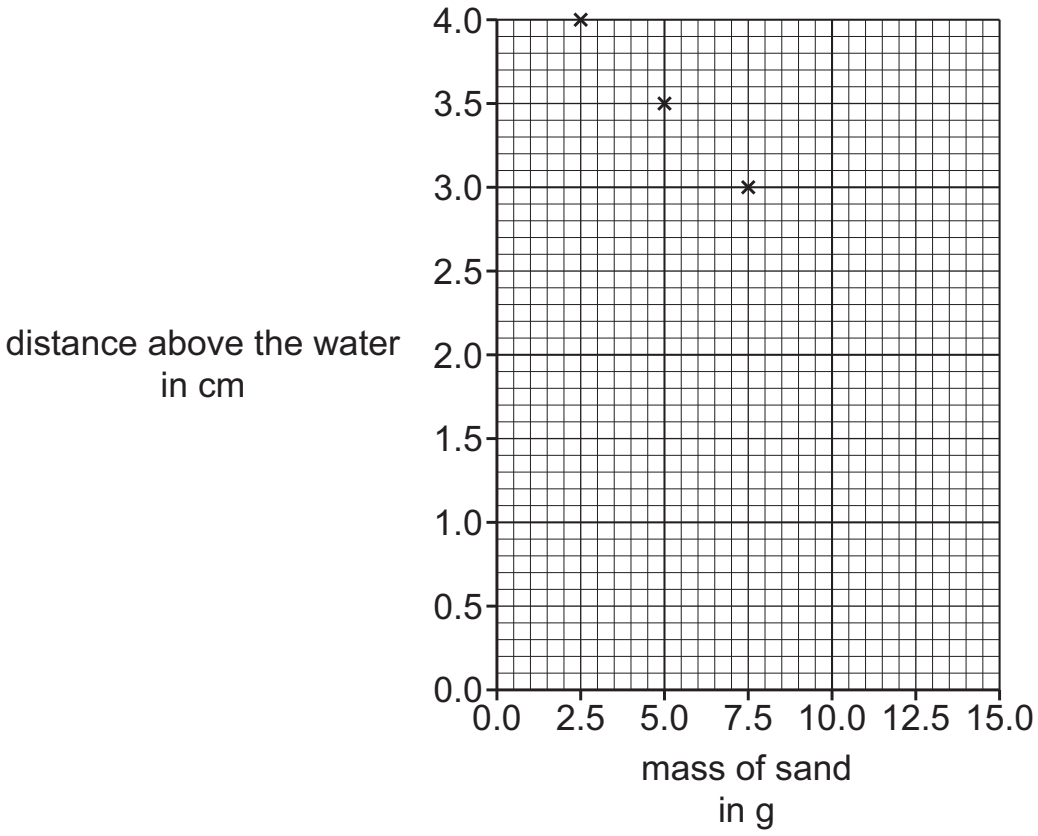
Complete the sentence.

The anomalous result is **mass of sand** ..... g and

distance above the water ..... cm. [1]

(b) Complete the line graph by:

- plotting the last three points using small crosses
- drawing a line of best fit.



[2]

(c) Complete the sentence to describe the **pattern** in the results.

As the mass of sand in the container increases .....

.....

[1]

(d) Mia wants to improve the investigation.

She wants to include a container that **sinks** in water.

Complete the sentences.

I think Mia should use a container with ..... g of sand.

This will sink because .....

.....

[2]

5 Carlos investigates how different types of exercise affects his breathing rate.

Carlos:

- counts how many times he breathes in for one minute before exercising
- exercises by walking around the room for one minute
- counts how many times he breathes in for one minute
- rests for five minutes.

Carlos repeats his method two more times but changes the type of exercise each time.

(a) What is the **independent variable** in this investigation?

.....

[1]

(b) Explain why Carlos rests between each type of exercise.

.....

.....

[1]

(c) Here are his results.

type of exercise	number of times Carlos breathes in for one minute
before exercise	25
walking	28
running	45
jumping	52

Complete the sentence about the results.

Carlos breathes faster when he exercises.

He does this to get more ..... into his body. [1]

6 Look at the table of information about substances.

substance	property			
	electrical conductivity	**thermal conductivity**	**melting point in °C**	**does it dissolve in water?**
A	high	high	3670	no
B	low	low	10	yes
C	high	high	30	no
D	high	high	590	no
E	low	low	35	yes
F	high	high	970	no
G	low	low	870	no

Metals are substances that have these properties:

- high electrical conductivity
- high thermal conductivity

(a) Which substances in the table are metals?

..... [1]

(b) Blessy sorts the substances into two groups.

Group **1** contains **B**, **C** and **E**.

Group **2** contains **A**, **D**, **F** and **G**.

Explain how Blessy sorts the substances into these two groups.

Group **1** .....

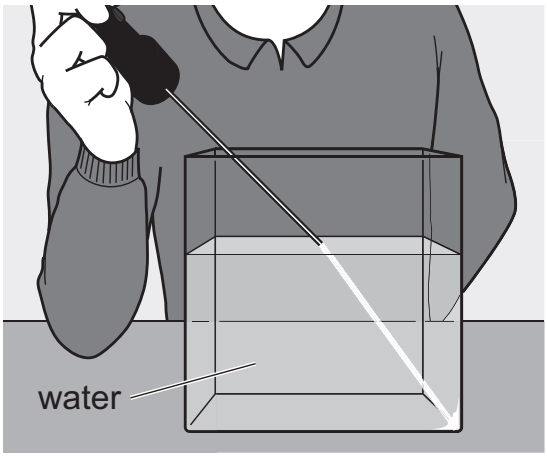
.....

Group **2** .....

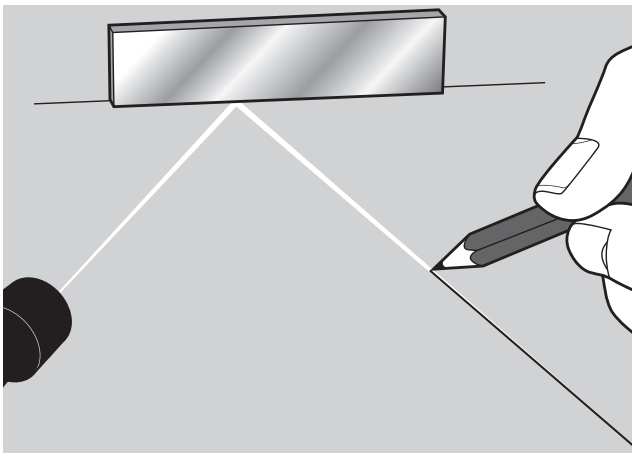
.....

[1]

7 Mike does two different investigations using light rays.



investigation **A**



investigation **B**

(a) Describe what happens to the light ray in investigation **A**.

Complete the sentences.

In investigation **A** the light ray changes .....

This is called .....

[2]

(b) Describe what happens to the light ray in investigation **B**.

Complete the sentences.

In investigation **B** the light ray changes .....

This is called .....

[2]

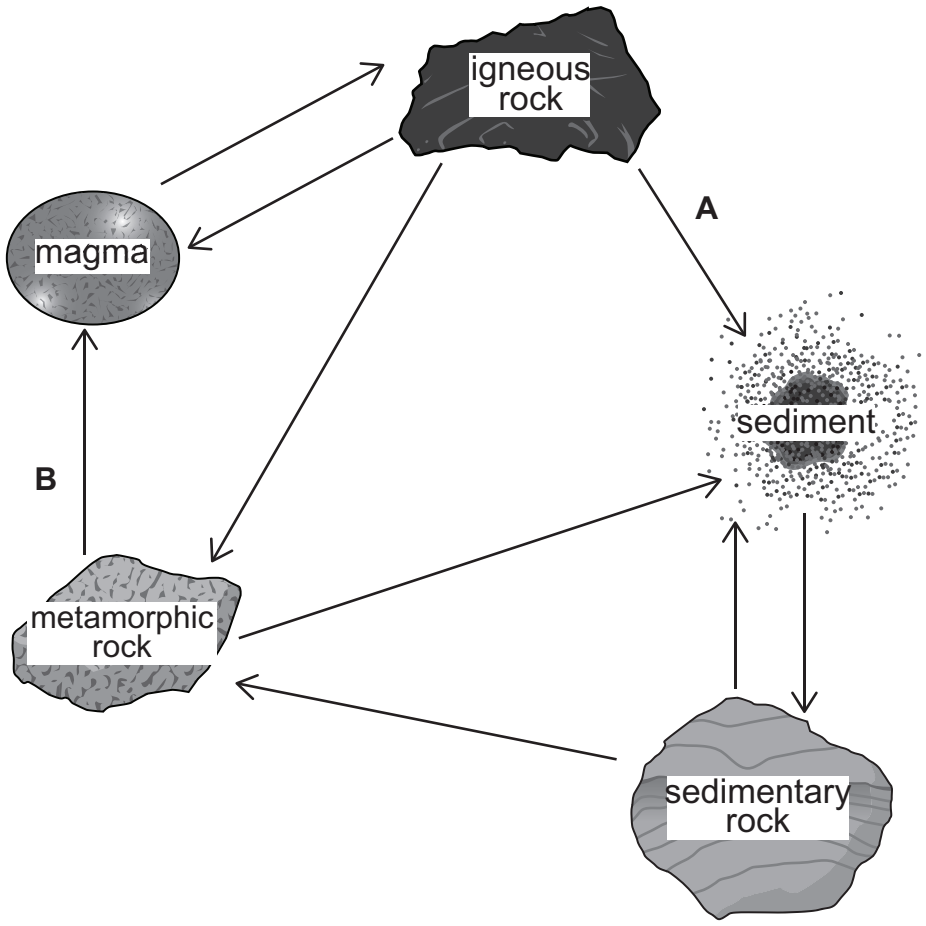
(c) Mike removes the water from the container in investigation **A**.

Describe what happens to the light ray.

.....

..... [1]

8 Lily draws a diagram of the rock cycle.



(a) Circle process **A**.

burial **erosion** **heating** **melting**

[1]

(b) Circle process **B**.

cooling **erosion** **melting** **solidification**

[1]

(c) Describe the processes of sedimentation and metamorphism.

sedimentation .....

.....

metamorphism .....

.....

[2]

9 Some fungi cause diseases in the body.

(a) Name **one other** type of living thing that causes diseases in the body.

..... [1]

(b) Mucus is a defence mechanism against infectious diseases.

Which organ system of the body contains mucus?

..... [1]

10 Boiling and evaporation are two physical changes.

(a) Name the process that is the **reverse** of evaporation.

.....[1]

(b) Write down **one similarity** between boiling and evaporation.

.....[1]

(c) Write down **two differences** between boiling and evaporation.

1 .....

.....

2 .....

.....

[2]

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