

CANDIDATE
NAME

CENTRE
NUMBER

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CANDIDATE
NUMBER

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SCIENCE

1113/01

Paper 1

April 2019

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 **18** printed pages and **2** blank pages.



- 1 The list contains the names of different parts of a cell.

cell membrane

cell wall

cytoplasm

nucleus

chloroplast

- (a) The table shows where different parts of a cell are found.

Complete the table by placing ticks (✓) in the correct boxes.

One has been done for you.

part of a cell	where the part of the cell is found		
	only in animal cells	only in plant cells	in both animal and plant cells
cell membrane			
cell wall		✓	
cytoplasm			
nucleus			
chloroplast			

[3]

- (b) Which part of a cell contains the genetic material?

.....

[1]

2 There are stars, planets and other objects in space.

name	type of object
Mars	planet
Moon	natural satellite
Polaris	star
Sirius	star

(a) Use the table to write down the names of **two** light sources in space.

1

2

[1]

(b) Humans can see Mars from Earth.

(i) Describe why we can see Mars in the night sky.

.....

..... [1]

(ii) Describe why we **cannot** see details on the surface of Mars.

..... [1]

(c) Humans can see the star Polaris from Earth.

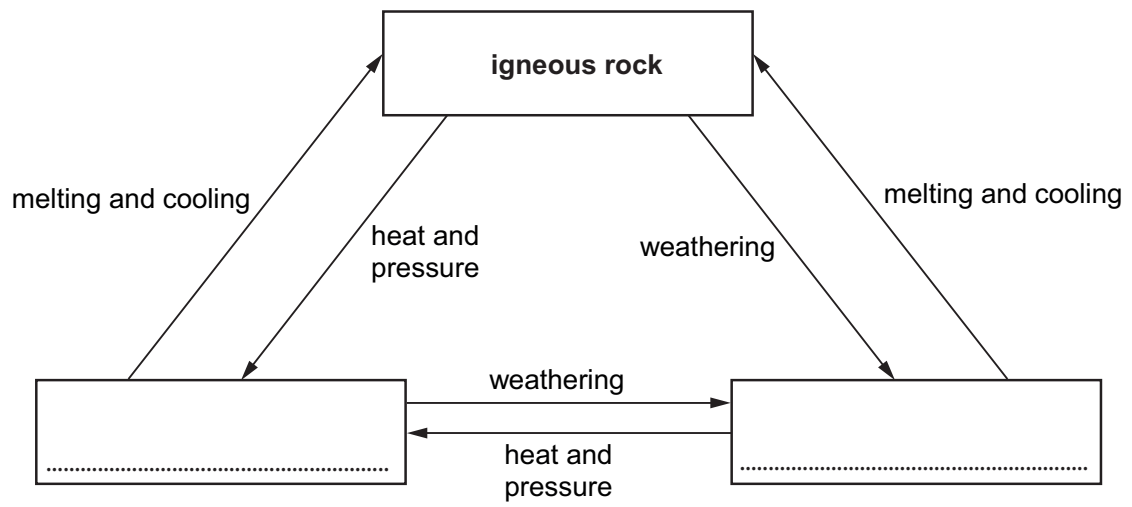
It **appears** to move during different times of the year.

Explain why Polaris appears to move.

.....

..... [1]

3 The diagram shows part of the rock cycle.



(a) Complete the diagram by writing in the **two** missing types of rock.

[2]

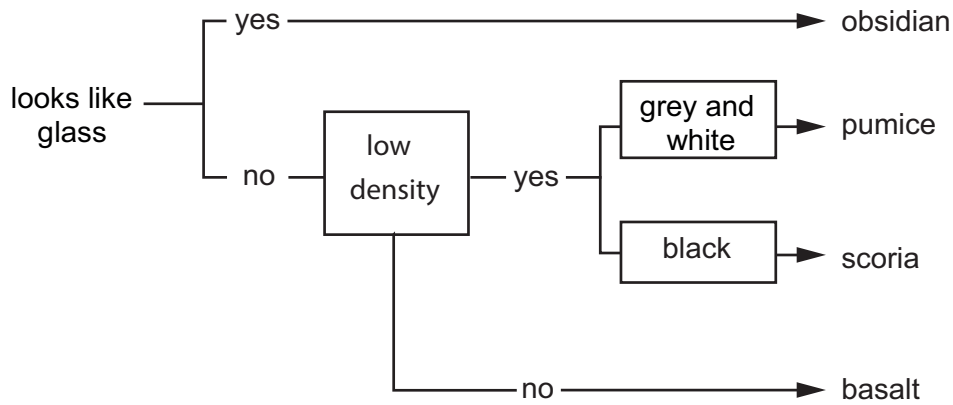
(b) Pierre investigates rocks.

He describes the rocks he investigates.

Here is a table of his observations.

rock	observation
A	grey and white rock that has a low density
B	black rock that has a high density
C	shiny black rock that looks like glass
D	black rock that has a low density

Use this key to identify the four rocks.

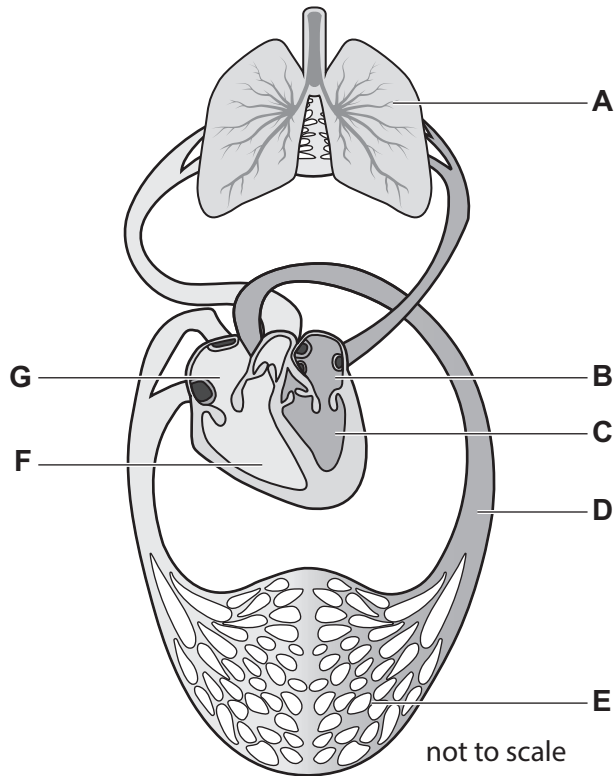


- A**
- B**
- C**
- D**

[2]

4 The diagram shows the human circulatory system.

Parts of the system are labelled with the letters **A** to **G**.



Use the diagram to identify parts of the circulatory system from their descriptions.

Write your answers in the table.

description	letter
the part that pumps blood to the lungs	
the part where oxygen leaves the blood	
the part where the blood is at its greatest pressure	
an artery that takes blood to the body	

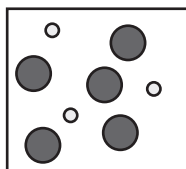
[4]

5 The diagrams show the particles in different substances.

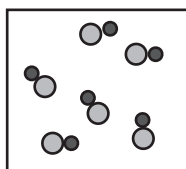
Draw a line to match each **diagram** with the **description** of that diagram.

diagram

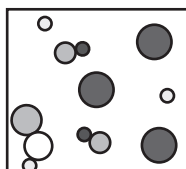
description



mixture of compounds



mixture of elements



mixture of elements and compounds

single compound

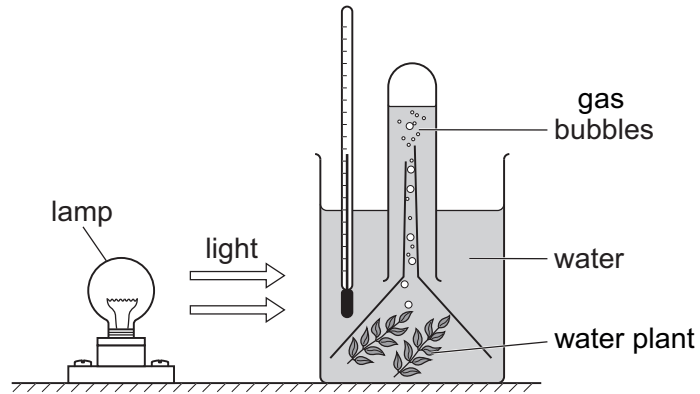
single element

[3]

6 Safia and Jamila investigate photosynthesis.

They use water plants.

Here is the apparatus they use.



(a) In their first experiment they measure the number of gas bubbles made in one minute.

(i) What is the name of the gas made in photosynthesis?

Circle the correct answer.

carbon dioxide methane nitrogen oxygen water [1]

(ii) What equipment does Safia use to measure one minute?

..... [1]

(b) Safia and Jamila do two more experiments.

They move the lamp further away from the plant for each experiment.

Here are their results.

distance between light and water plant in cm	number of gas bubbles in one minute
10	98
20	54
40	26

(i) Why do they use one minute for each experiment?

..... [1]

(ii) Complete the sentence describing the pattern of results.

As the distance between the light and the water plant increases,

..... [1]

(c) **Predict** the results for:

a distance of 30 cm = gas bubbles

a distance of 50 cm = gas bubbles

[1]

(d) Circle the correct word or phrase that completes the conclusion.

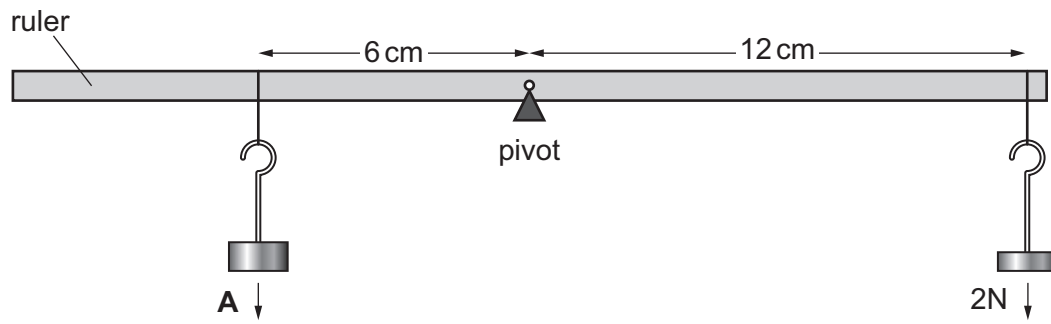
increases

The rate of photosynthesis **does not change** as light decreases.

decreases

[1]

7 Lily balances a ruler on a pivot.



Calculate the size of the force **A**.

force **A** N

[2]

8 Angelique and Mike decide to make copper chloride.

(a) They mix copper carbonate with an acid.

Write the name of the acid they use.

..... [1]

(b) The sentences **A – E** describe the method they use.

The sentences are in the wrong order.

- A** The solution (filtrate) is left for the crystals to grow.
- B** The solution (filtrate) is put into an evaporating dish.
- C** The solution (filtrate) is heated until the first crystals appear.
- D** Excess copper carbonate is added to the acid until there is no more fizzing.
- E** The excess copper carbonate is removed by filtering.

Complete the boxes to show the correct order.

One box has been done for you.

D				
----------	--	--	--	--

 [2]

9 Class 7 investigate **air resistance**.

- They run from one end of the playground to the other end of the playground.
- They measure the time to complete the run.
- They repeat the run with umbrellas.



(a) Class 7 write down their results.

<p>no umbrella = 10 seconds</p> <p>with umbrella = 14 seconds</p> <p>no umbrella = 8 seconds</p> <p>with umbrella = 9 seconds</p> <p>no umbrella = 7 seconds</p> <p>with umbrella = 13 seconds</p> <p>no umbrella = 11 seconds</p> <p>with umbrella = 15 seconds</p>
--

(i) Write their results in the table.

time with no umbrella in seconds	time with umbrella in seconds

[1]

(ii) Calculate the mean (average) times.

mean time with **no** umbrella = s

mean time with umbrella = s

[1]

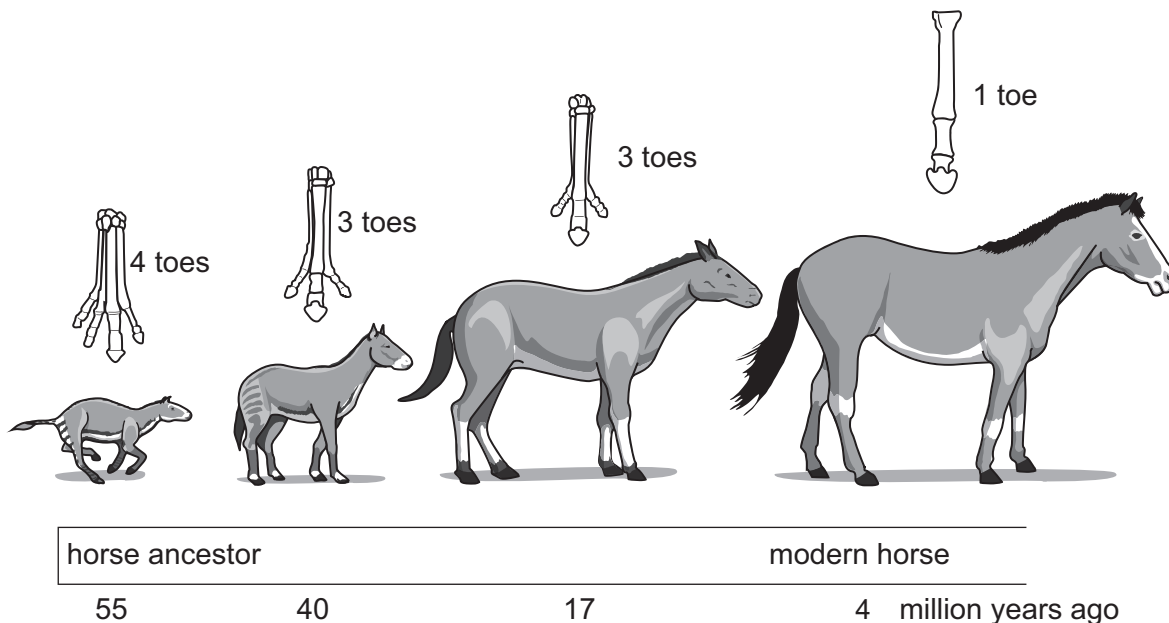
(b) Write down a conclusion for this investigation about air resistance.

.....

.....

..... [2]

10 The diagrams show the modern horse and three of its ancestors.



(a) What evidence has been used to find out the appearance of the ancestors of the modern horse?

..... [1]

(b) The appearance of the horse has changed over the last 55 million years.

(i) Use the diagrams to describe **two** ways the appearance of the horse has changed.

1

2

[2]

(ii) A scientist developed the theory of natural selection to explain this gradual change in appearance.

What is the name of this scientist?

..... [1]

11 Pierre investigates a type of reaction.

He reacts different metals with different salt solutions.

Here are his results.

metal	salt solution	observation
copper	tin nitrate	no reaction
iron	tin nitrate	reaction
tin	iron sulfate	no reaction
magnesium	zinc sulfate	reaction
zinc	iron sulfate	reaction

(a) Put the **metals** in order of reactivity.

One has been done for you.

most reactive

.....

iron
.....

.....

least reactive

[1]

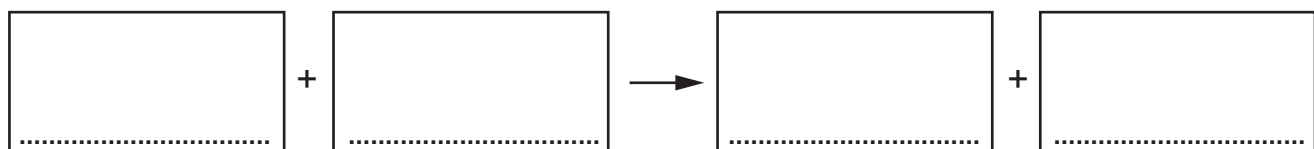
(b) What type of reaction does Pierre investigate?

..... [1]

(c) Magnesium reacts with zinc sulfate solution.

This reaction has two products.

Write the word equation for this reaction.



[2]

12 Oliver and Chen walk to school.

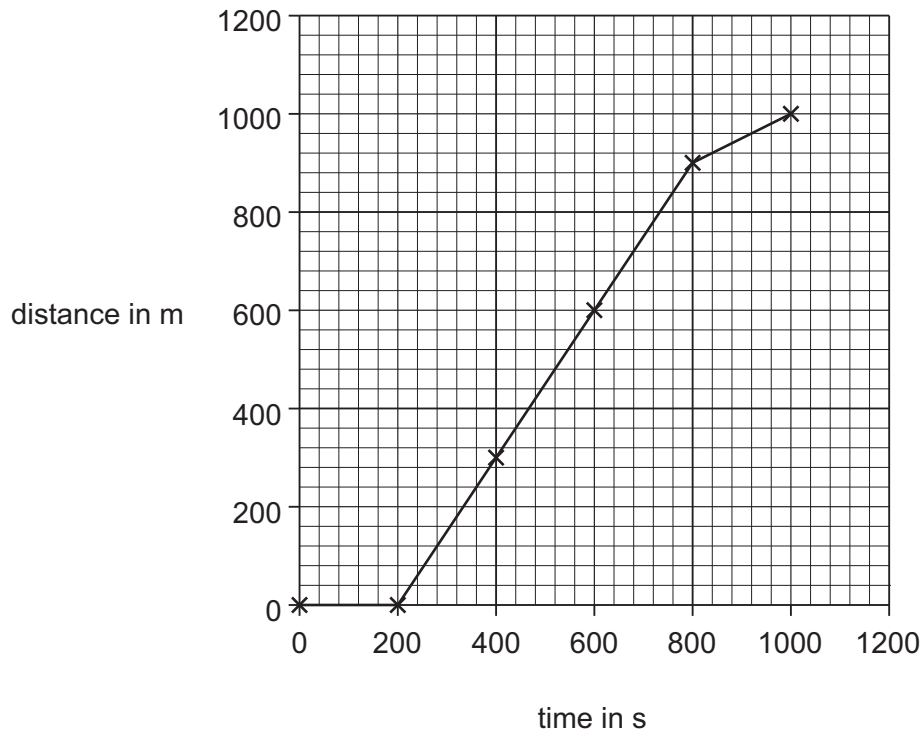
Here is information about their walk to school.

time in s	Oliver's distance in m	Chen's distance in m
0	0	0
200	200	0
400	400	300
600	600	600
800	800	900
1000	1000	1000

(a) They plot a distance-time graph.

Chen's graph has been done for you.

Plot the graph for Oliver's results on the same graph paper.



[2]

(b) The school is 1000 m from where Oliver and Chen started walking.

Who walked to school in the **shorter** time?

Circle the correct answer.

cannot tell from the information

Chen

Oliver

they never reached the school

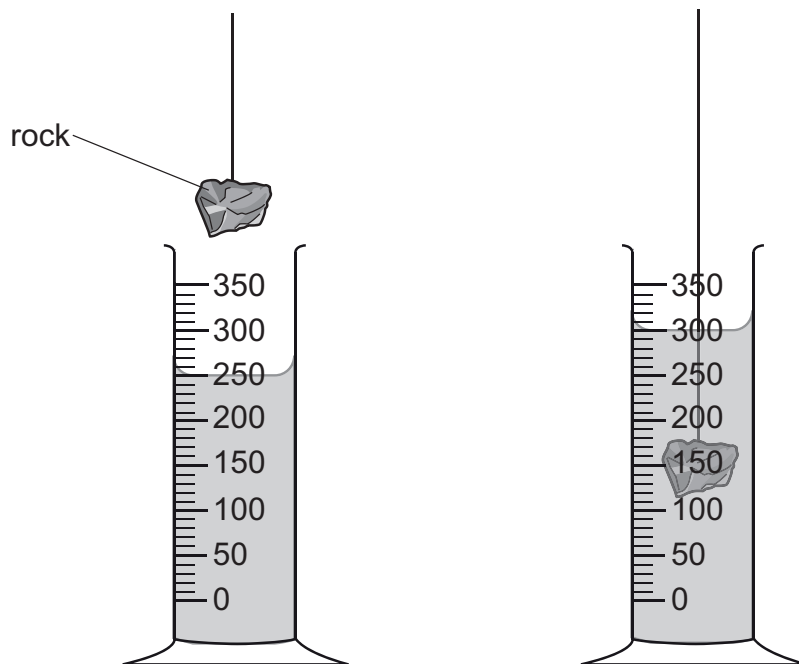
they took the same time

Explain your answer.

..... [1]

13 Measuring cylinders are used to measure volume.

Look at the diagram.

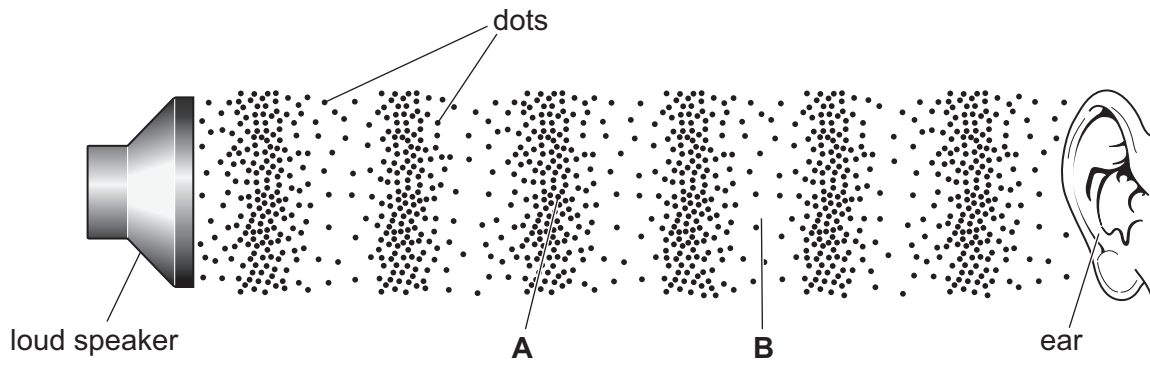


What is the volume of the piece of rock?

..... cm³

[1]

14 The properties of sound can be explained using a diagram.



Complete the sentences.

The first sentence has been done for you.

Choose words from

- | | | | | |
|-------------|-----------------------|--------------------|----------------|------------------|
| air | close together | compression | density | far apart |
| mass | pressure | rarefaction | solid | sound |

The dots on the diagram are air particles.

In area **A** the dots are

This area is called a

In area **B** the dots are

This area is called a

[4]

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