Cambridge Secondary 1 Checkpoint

Cambridge International Examinations
Cambridge Secondary 1 Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

SCIENCE **1113/01**

Paper 1 **For Examination from 2014**

SPECIMEN PAPER

45 minutes

Candidates answer on the Question Paper.

Additional Materials: Pen
Pencil
Ruler
Calculator

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 a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

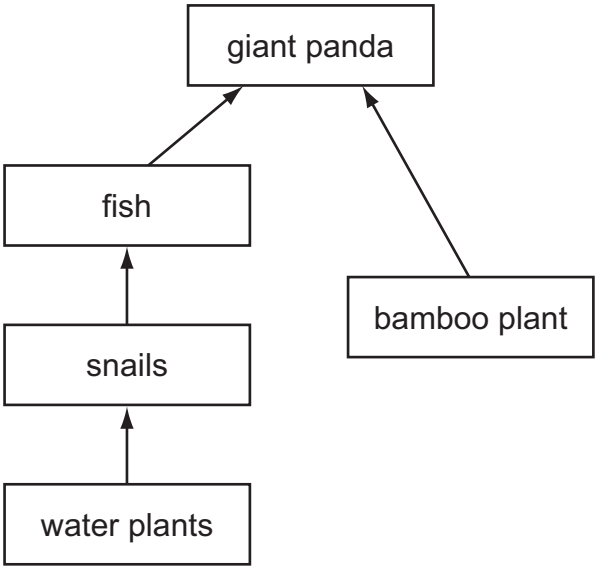
Answer **all** questions.
You should show all your working in the booklet.

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 **16** printed pages.

1 The giant panda lives in China.

The diagram shows a simple food web involving the panda.



(a) Name **one** producer in the food web.

.....

[1]

(b) Name **one** primary consumer in the food web.

.....

[1]

(c) Use the information in the food web to explain why the panda is described as an omnivore.

.....

.....

[1]

(d) What do the arrows in the food web show?

.....

.....

[1]

(e) Many of the bamboo forests in China are being cut down.

This is causing the panda population to decrease.

Suggest why.

.....

..... [1]

2 This list shows properties that different materials can have.

A	magnetic	**E**	good conductor of heat
B	can be compressed	**F**	poor conductor of heat
C	very high melting point	**G**	good conductor of electricity
D	very low melting point	**H**	non conductor of electricity

Write down the **letter** of the property that answers each of these questions.

(a) Which **two** properties from the list make aluminium suitable for cooking pans?

1. .....

2. ..... [2]

(b) Which property from the list explains why a lot of oxygen gas can be pumped into a very small container?

..... [1]

(c) Which property from the list explains why plastic makes a good material for the handle of a kettle?

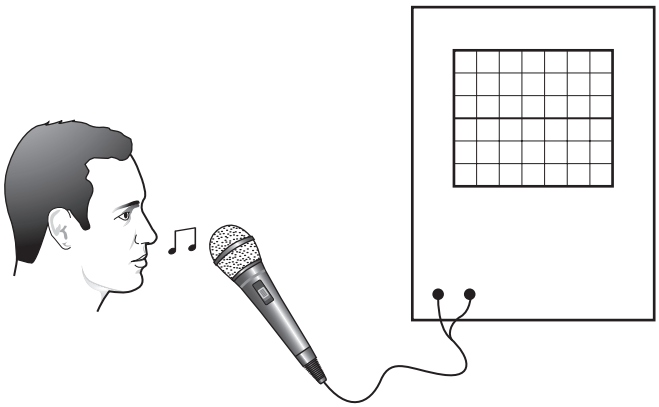
..... [1]

(d) Which property from the list explains why rubber is used to cover electrical wiring?

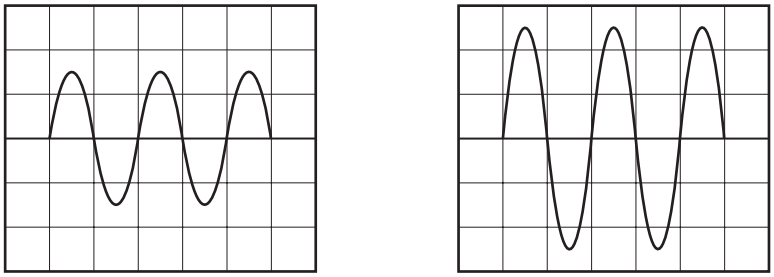
..... [1]

3 A student whistles three notes into a microphone connected to an oscilloscope.

An oscilloscope shows the shape and size of a sound wave.



(a) The diagram shows the waves for whistle **1** and whistle **2**.



whistle **1** whistle **2**

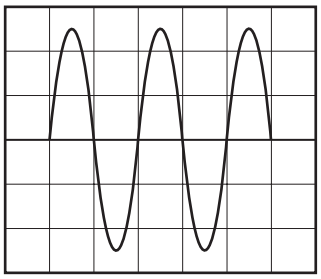
Use words from the list below to complete these sentences.

less than **the same as** **greater than**

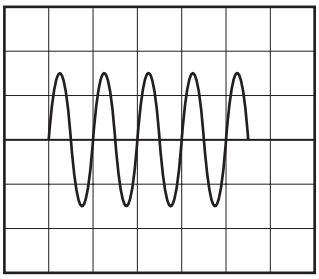
(i) The amplitude of whistle **1** is ..... the amplitude of whistle **2**. [1]

(ii) The wavelength of whistle **1** is ..... the wavelength of whistle **2**. [1]

(b) The diagram shows the waves for whistle **2** and whistle **3**.



whistle **2**



whistle **3**

Compare the loudness and pitch of whistle **2** and whistle **3**.

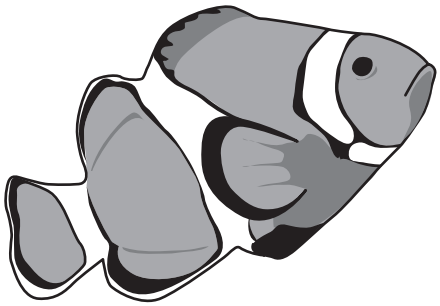
Loudness .....

.....

Pitch .....

..... [2]

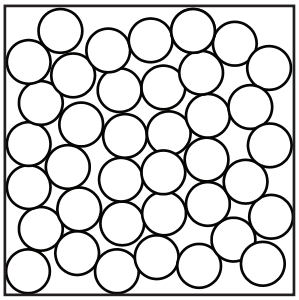
4 Use the key to identify this coral reef fish.



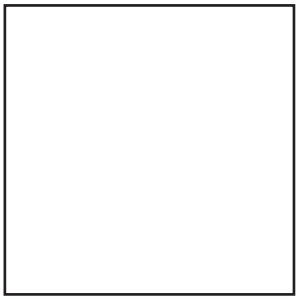
1	shape is very long and very thin	go to 2
	shape is not long and thin	go to 3
2	fins are pointed	*trumpetfish*
	fins are smooth	*eel*
3	eyes on top of head	go to 4
	eyes each side of head	go to 5
4	long thin tail	*ray*
	has a blunt tail	*flounder*
5	has stripes	go to 6
	does not have stripes	*sweeper*
6	has dark tips to fins and tail	*clownfish*
	does not have dark tips to fins and tail	*angelfish*

The coral reef fish is a ..... [1]

5 The diagram shows the particle arrangement in a **liquid**.



(a) Draw the particle arrangement in a **solid**.



[1]

(b) Angelique puts five drops of a liquid perfume on the back of her hand.

A few seconds later Angelique can smell the perfume.

This is because the perfume diffuses into her nose.

(i) Complete the sentence about diffusion.

In diffusion the perfume moves from an area of **……**

concentration to an area of **……** concentration.

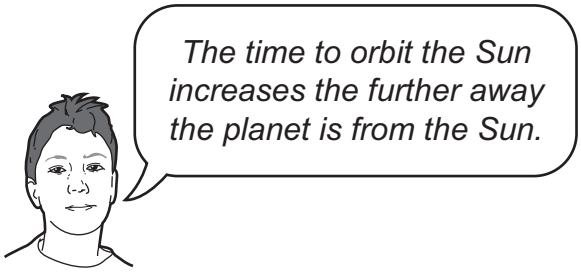
[1]

(ii) Explain, using the particle theory of matter, how diffusion takes place.

.....

..... [1]

6 Ahmed makes a prediction about the planets in the Solar system.



Prediction 1

To find evidence to support his prediction he uses the internet.

The table shows the information he finds.

planet	relative mass compared to Earth	distance from the Sun in millions of km	average surface temperature in °C	strength of gravity in N/kg	time to orbit the Sun in Earth years
Mercury	0.05	58	169	3.7	0.2
Venus	0.81	108	460	8.9	0.6
Earth	1.00	150	14	9.8	1.0
Mars	0.11	228	63	3.7	1.9

(a) Does the information in the table support **Prediction 1**?

.....

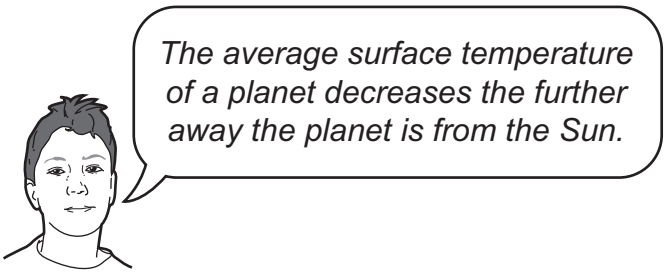
Use information from the table to explain your answer.

.....

.....

..... [1]

(b) Ahmed makes another prediction.



Prediction 2

(i) Does the information in the table support **Prediction 2**?

.....

Use information from the table to explain your answer.

.....

.....

..... [2]

(ii) Ahmed thinks he needs more evidence related to **Prediction 2.**

Suggest one **extra** piece of evidence he could use.

.....

..... [1]

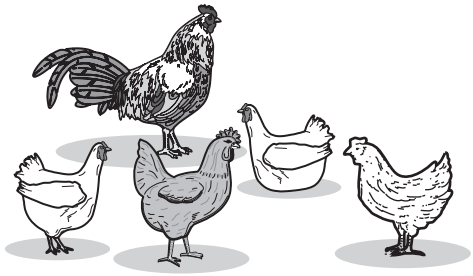
(c) Ahmed correctly predicts he will weigh more on Earth than on Mars.

Explain how the information in the table supports his prediction.

.....

..... [1]

7 Christina has five chickens.



Here is some information about her chickens.

name of chicken	sex of chicken	number of eggs per year
Abb	female	100
Coo	female	130
Fen	female	105
Jeb	female	110
Lam	male	–

(a) Christina wants to increase the number of eggs per year by using selective breeding.

(i) Which **two** chickens should she breed together?

..... **and** ..... [1]

(ii) Christina chooses chickens to breed from the offspring.

Which ones should she choose?

..... [1]

(b) Other qualities can be used when selectively breeding chickens.

Tick (✓) the **two** qualities that are the **most useful**.

size of eggs	☐
amount of milk produced	☐
low life expectancy	☐
number of feathers	☐
colour of feathers	☐
resistance to disease	☐

[2]

8 Rocks in the Earth's crust are classified by the way that they are formed.

Complete the sentences about rock formation.

Choose words from the list.

Each word can be used once, more than once or not at all.

igneous **metamorphic** **sedimentary**

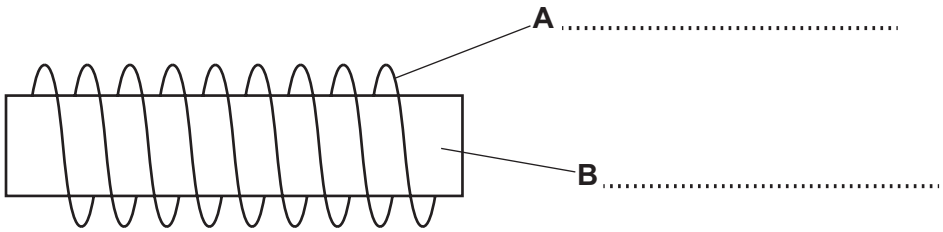
(a) ..... rocks are formed when molten lava from a volcano cools down. [1]

(b) ..... rocks are made from grains of rock that are cemented (stuck) together. [1]

(c) ..... rocks are made when heat and pressure change other types of rock. [1]

(d) ..... rocks are found in layers and often contain fossils. [1]

9 The diagram shows part of an electromagnet.



(a) Write down the names of part **A** and part **B** on the diagram. [2]

(b) Write down the material used to make each part.

Choose words from the list.

air **copper** **glass** **iron** **paper**

part **A**

material .....

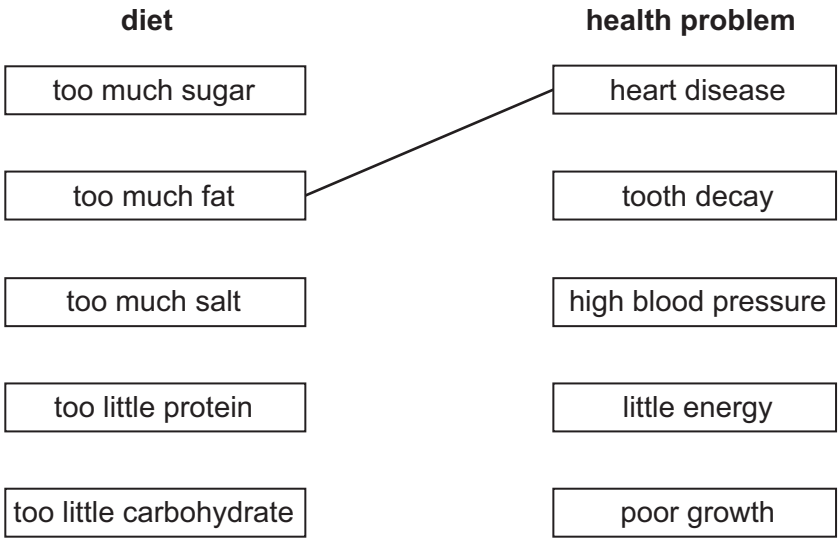
part **B**

material ..... [2]

10 Poor diets can cause health problems.

(a) Draw a line between the **diet** and the **health problem**.

One has been done for you.



[2]

(b) Chen and Mike look at information about the amount of fat and fibre in different fruits.

fruit	fat in grams	fibre in grams
apricot	0.1	1.2
banana	0.1	3.1
kiwi fruit	0.0	2.6
orange	0.1	2.4
pineapple	0.1	13.8
strawberry	0.0	0.6

(i) Name the **two** fruits with the highest amount of fibre.

..... **and** ..... [1]

(ii) Why is fibre important in the diet?

.....

..... [1]

(iii) Write **one** conclusion about the amount of fat found in fruits.

.....

..... [1]

(iv) Mike thinks the information in the table is **not** a fair comparison because the fruits are different shapes.

Lee thinks it is **not** a fair comparison but he knows that the shape of the fruit is not important.

What measurement do they need to make it a fair comparison?

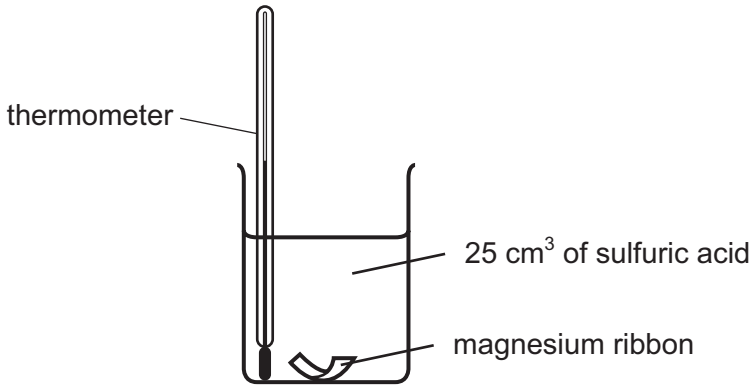
.....

..... [1]

11 Safia investigates the reaction between magnesium ribbon and dilute sulfuric acid.

In each experiment Safia uses 25 cm^3 of sulfuric acid.

She records the temperature of the acid and then adds some magnesium ribbon.

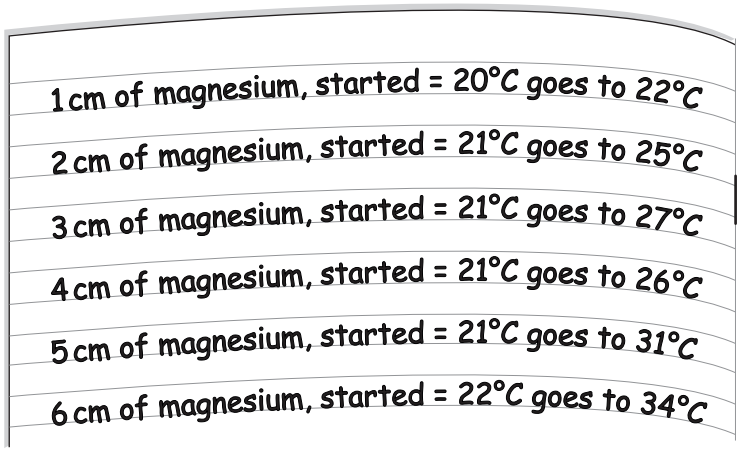


When the magnesium has finished reacting she records the temperature of the acid again.

Safia does this experiment six times.

Each time she uses a different length of magnesium ribbon.

Look at Safia's results.



Safia then calculates the temperature change for each reaction.

(a) Put her results, including the temperature changes, into a table.

[3]

(b) One set of readings is an anomalous result.

Which set?

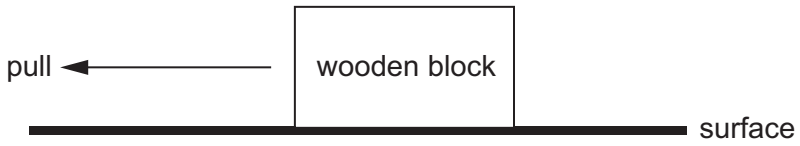
..... [1]

(c) The reaction between magnesium and sulfuric acid releases energy.

What is the name given to a reaction that releases energy?

..... [1]

12 Hassan does an experiment to find the maximum friction force between a wooden block and different surfaces.



Here are his results.

	friction force in N		
surface	**test 1**	**test 2**	**test 3**
carpet	24.5	32.6	26.4
glass	9.3	9.6	10.2
wood	15.0	18.1	16.4

(a) Name the apparatus Hassan uses to measure the friction force.

.....

[1]

(b) Hassan repeated the measurements for each surface three times.

Explain why.

.....

.....

[1]

(c) Calculate the average (mean) friction force for the glass experiment.

average (mean) friction force = ... N [1]

(d) Circle the **one** anomalous reading in the table. [1]