Cambridge Assessment International Education

Science

Stage 6

Paper 2

35 minutes

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Write your answer to each question in the space provided.
- You should show all your working on the question paper.

INFORMATION

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

1 Some diseases are spread in food.

(a) Write down the name of **two** types of organism that spread disease in food.

1 .....

2 .....

[2]

(b) Describe **two** ways good hygiene controls the spread of disease in food.

1 .....

2 .....

[2]

(c) Humans have defence mechanisms against infectious diseases spread in food.

Describe **one** of these defence mechanisms.

.....

..... [1]

2 Boiling and evaporation of water involves a change of state.

(a) Which change of state happens during both boiling and evaporation of water?

..... [1]

(b) Explain why the evaporation of water is a physical change.

..... [1]

(c) What is the difference between boiling and evaporation of water?

.....

.....

..... [2]

3 Mike mixes solid sodium hydrogencarbonate and dilute citric acid.

The mixture fizzes and forms a solution.

Carbon dioxide, water and sodium citrate are made.

(a) Write down **two** reasons why mixing solid sodium hydrogencarbonate and citric acid is a chemical change.

1 .....

.....

2 .....

.....

[2]

(b) One of the properties of carbon dioxide gas is that it does **not** burn.

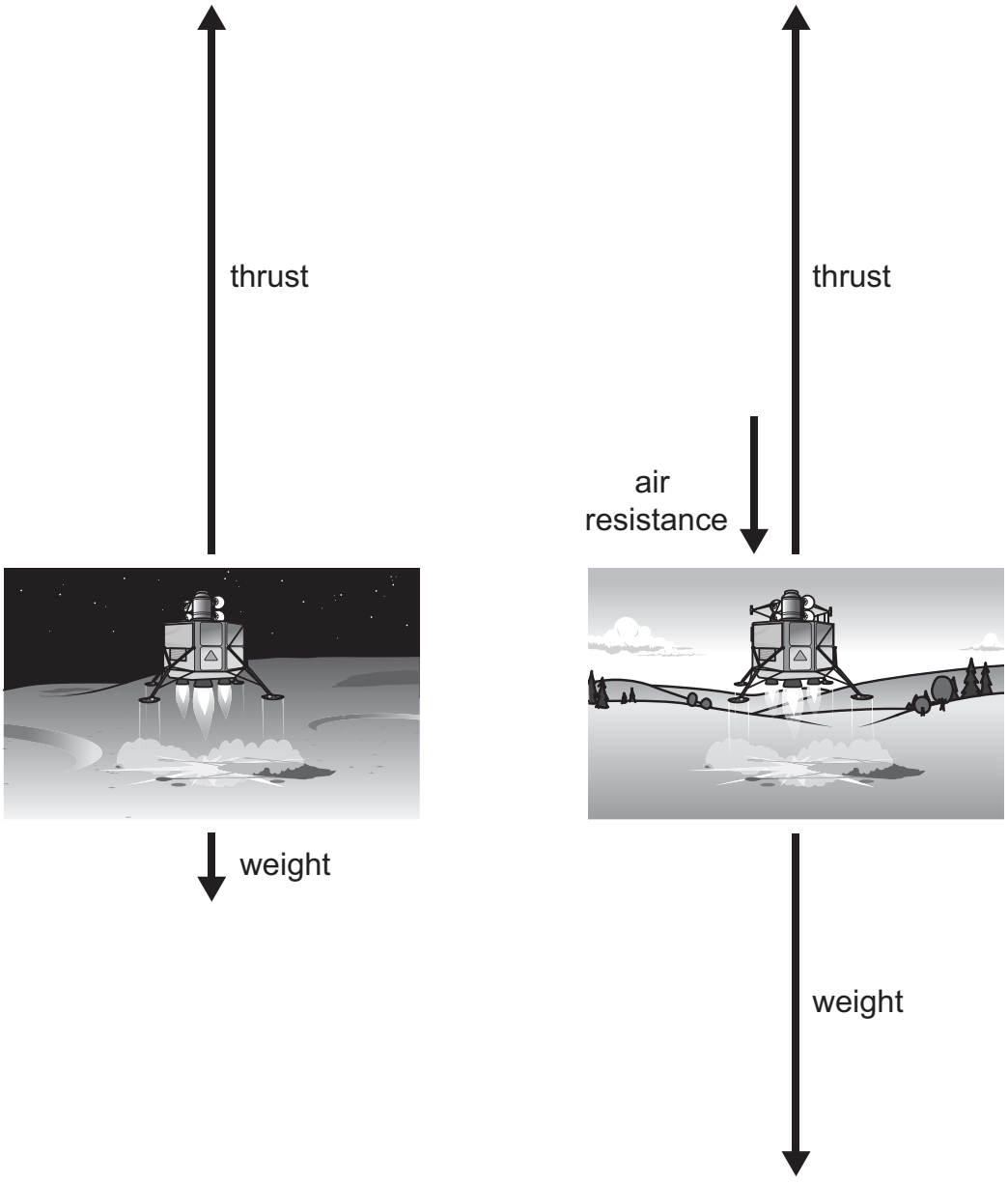
Write down **one other** property of carbon dioxide gas.

..... [1]

4 Look at these two force diagrams for a spacecraft.

One diagram shows the spacecraft leaving the surface of the Moon.

The other diagram shows the spacecraft leaving the surface of the Earth.



leaving the surface of the Moon

leaving the surface of the Earth

(a) In both diagrams the mass of the spacecraft is the same.

What is the name for the unit of mass?

..... [1]

(b) The weight of the spacecraft on the Moon is different from its weight on the Earth.

Explain why.

.....

..... [1]

(c) What is the name for the unit of weight?

..... [1]

(d) Explain why the spacecraft leaving the Moon moves upwards faster than when it leaves the Earth.

Use the force diagrams to give **two** reasons.

reason 1 .....

.....

reason 2 .....

.....

[2]

5 Safia investigates some samples of rock.

Look at her table of results.

rock	description
A	very hard and contains crystals
B	soft and crumbly
C	hard and contains distorted fossils
D	glassy appearance with **no** grains
E	low density and contains gas bubbles
F	found in layers with grains

(a) Which **two** of these rocks are sedimentary?

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

(b) Suggest **two** reasons why rock **C** contains distorted fossils.

Use ideas about the formation of rock **C**.

.....

.....

..... [2]

(c) Rock **E** is an igneous rock.

Describe how igneous rocks are formed.

.....

..... [1]

(d) Suggest why igneous rocks do **not** contain fossils.

.....

..... [1]

6 The breathing rate of a human is measured in the number of breaths per minute.

Angelique investigates the breathing rates of five of her friends.

She measures the breathing rates after they have been sitting still for five minutes.

Her friends then run 200 m as fast as they can.

Angelique measures the breathing rates just after they have run this 200 m.

(a) Predict what difference she expects in the breathing rates of her friends before and after running.

prediction .....

.....

explanation .....

.....

[2]

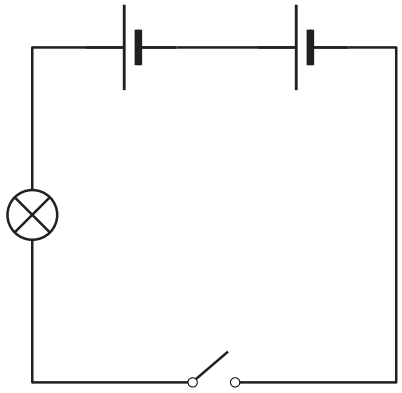
(b) Draw the results table for Angelique's measurements.

[3]

7 Ahmed investigates some electrical circuits.

In his first experiment Ahmed:

- sets up the electrical circuit shown



- closes the switch and records the brightness of the lamp.

Ahmed repeats this experiment five more times.

Each time he increases the number of lamps in the circuit.

Here are his results.

number of lamps	brightness of lamp (1 = dim and 10 = very bright)
1	10
2	8
3	6
4	7
5	4
6	1

(a) There is one anomalous result.

Circle this anomalous result in the table.

[1]

(b) Describe how Ahmed checks to see if the result is anomalous.

..... [1]

(c) Why is it important to use similar lamps for each experiment?

..... [1]

(d) Ahmed wants to find out if the results are the same with a parallel circuit.

Draw a circuit diagram for a parallel circuit that has two lamps.

[3]

8 Priya adds salt to water.

She stirs the mixture of salt and water to dissolve the salt.

(a) Solid salt particles do **not** move and are close together.

Water particles move and are close together.

Describe what happens to water particles **and** salt particles when the salt dissolves.

.....

.....

.....

..... [2]

(b) Explain why dissolving salt in water is a physical change.

.....

.....

.....

..... [2]

9 Humans often grow rapidly during puberty.

(a) Write down one physical change that happens **only** to males during puberty.

..... [1]

(b) Write down one physical change that happens **only** to females during puberty.

..... [1]