Write your name here

Surname		Other names

Pearson Edexcel International Primary Curriculum

Centre Number

Candidate Number

Science
Year 6
Achievement Test

Friday 2 June 2017 – Morning
Time: 1 hour

Paper Reference
JSC01/01

Materials you will need:
Ruler

Total Marks

Instructions

- Use **black** ink or **black** ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.

Information

- The total mark for this paper is 60.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Candidates may use a calculator.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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SECTION A

Answer ALL questions.

For questions 1 – 8 put a cross in one box ☒ to indicate your answer.
If you change your mind, put a line through the box ☒ and then put a cross in another box ☒.
Each question is worth one mark.

1 Which of these is a source of light?

   ☒ **A** mirror

   ☒ **B** raindrop

   ☒ **C** shiny coin

   ☒ **D** torch

   (Total for Question 1 = 1 mark)

2 Living things remove their waste.

   This life process is called

   ☒ **A** dispersal.

   ☒ **B** disposal.

   ☒ **C** evaporation.

   ☒ **D** excretion.

   (Total for Question 2 = 1 mark)

3 The diagram shows changes of state for water.
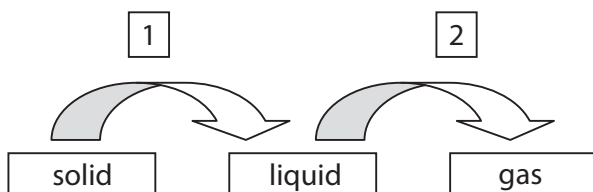
   Which row shows the correct labelling for this diagram?

		1	2
☒	**A**	evaporating	melting
☒	**B**	evaporating	condensing
☒	**C**	freezing	evaporating
☒	**D**	melting	evaporating

   (Total for Question 3 = 1 mark)

4 Some animals live in a burrow.

The picture shows the entrance to a burrow.
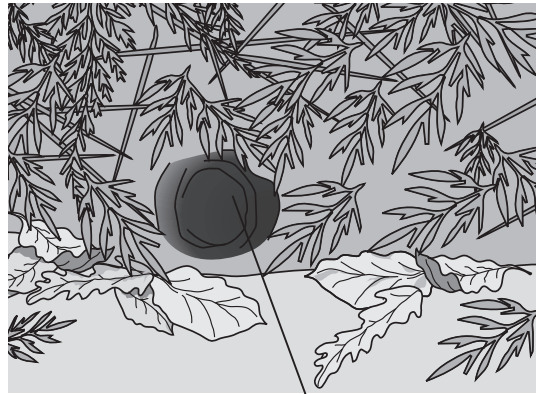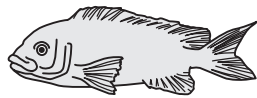

entrance to burrow

Which animal is most likely to live in this burrow? The animals are **not** drawn to scale.

| A | B | C | D |

☒ **A**

☒ **B**

☒ **C**

☒ **D**

(Total for Question 4 = 1 mark)

5 An opaque object

☒ **A** blocks light.

☒ **B** conducts light.

☒ **C** filters light.

☒ **D** separates light.

(Total for Question 5 = 1 mark)

P 4 8 4 3 6 A 0 3 2 8

6 A sieve could be used to separate a mixture of

☒ **A** oil and vinegar.

☒ **B** water and sugar.

☒ **C** stones and water.

☒ **D** water and ink.

(Total for Question 6 = 1 mark)

7 Which of these is measured in newtons?
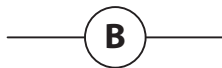
☒ **A** friction

☒ **B** insulation

☒ **C** temperature

☒ **D** time

(Total for Question 7 = 1 mark)

8 Which of these is the circuit symbol for a buzzer?

A B C D

☒ **A**

☒ **B**

☒ **C**

☒ **D**

(Total for Question 8 = 1 mark)

9 The picture shows a tarsier. Tarsiers catch insects at night to eat.

large ears
thick fur
large eyes
feet with sticky pads
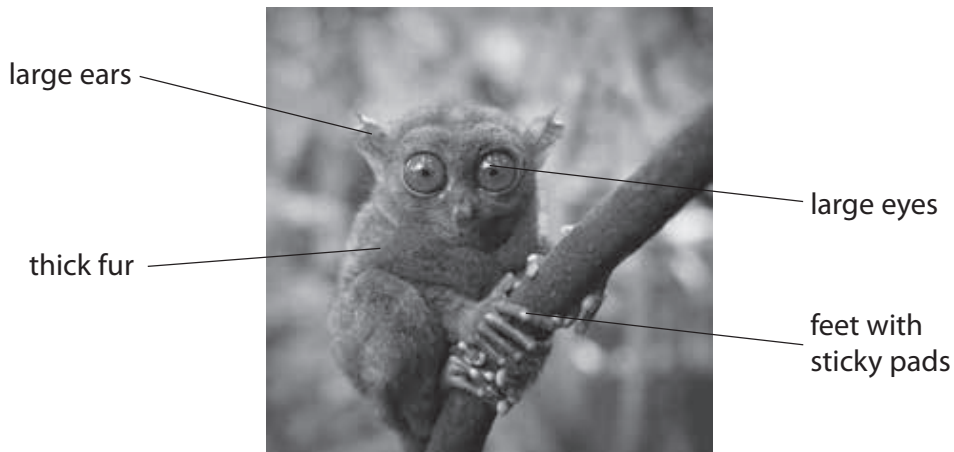
Draw a line to link each feature with what it helps the tarsier to do.

When you have finished, there will be **two** boxes on the right that you will **not** have used.

Feature

large ears

thick fur

large eyes

feet with sticky pads

This helps the tarsier to

stay warm.

smell predators coming.

see its prey.

make its own food.

listen for insects to eat.

cling to branches.

(Total for Question 9 = 2 marks)

10 Micro-organisms can be used to make food.

blue cheese

bread

yoghurt

Explain how micro-organisms have been used to make the food in the photograph.

....
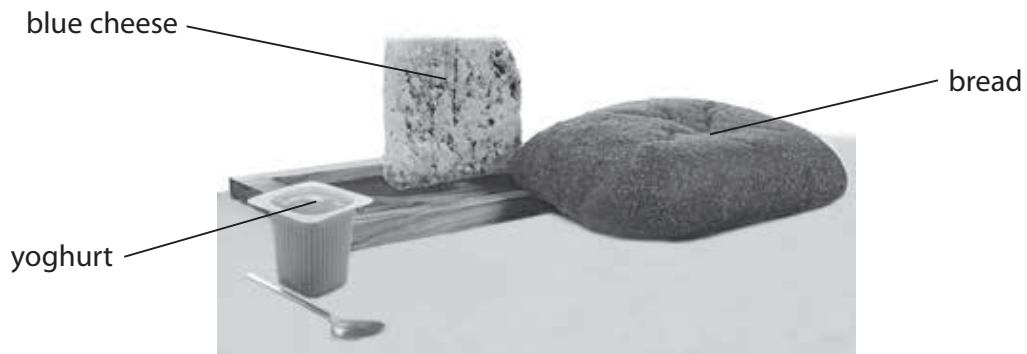
....

....

....

....

....

(Total for Question 10 = 3 marks)

P 4 8 4 3 6 A 0 6 2 8

For questions 11 – 18 put a cross in one box ☒ to indicate your answer.
If you change your mind, put a line through the box ☒ and then put a cross in another box ☒.
Each question is worth one mark.

11 This is a photograph of a bean seed.

Which statement **best** describes what the photograph shows?

☒ **A** The seed is germinating and a root has started to grow.

☒ **B** The seed coat has split and a shoot has started to grow.

☒ **C** The seed has been damaged by micro-organisms that have split the seed coat.

☒ **D** The seed has been dispersed and has been bitten by an animal.

(Total for Question 11 = 1 mark)

12 Beth has some salty water.

How could she separate the salt from the water?

☒ **A** condensation

☒ **B** evaporation

☒ **C** filtration

☒ **D** sieving

(Total for Question 12 = 1 mark)

P48436A0728

13 The pictures show the teeth of two different animals, Animal S and Animal T.

Animal S   Animal T

Which row of the table correctly describes these animals?

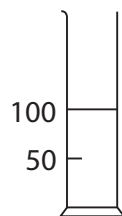|	Animal S		Animal T	
☒ **A**	eats meat	is a carnivore	eats plants	is a herbivore
☒ **B**	eats meat	is a herbivore	eats plants	is a carnivore
☒ **C**	eats plants	is a herbivore	eats meat	is a carnivore
☒ **D**	eats plants	is a carnivore	eats meat	is a herbivore

(Total for Question 13 = 1 mark)

14 Some sugar is added to 100 cm³ of water in a beaker.

Which diagram is correctly labelled?
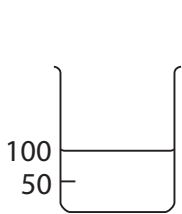
beaker with sugar solution **A**   beaker with sugar solution **B**   beaker with dissolved water **C**   beaker with dissolved water **D**
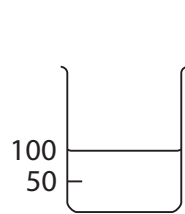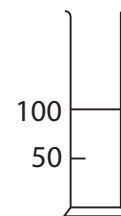
☒ **A**

☒ **B**

☒ **C**

☒ **D**

(Total for Question 14 = 1 mark)

P 4 8 4 3 6 A 0 8 2 8

PapaCambridge

Questions 15 and 16

The diagram shows a key to identify beans.

Use the key to help you answer questions 15 and 16.
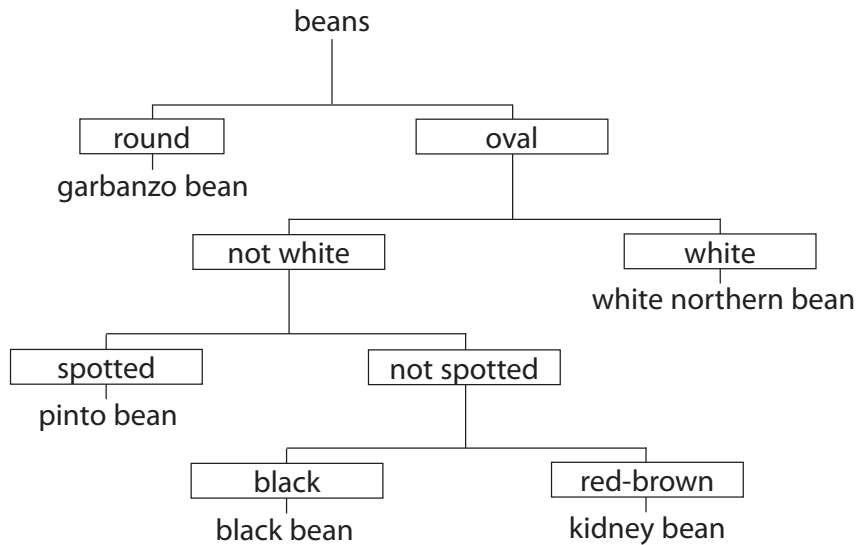
15 Which is the correct description of a black bean?

☒ **A** oval and spotted

☒ **B** round and spotted

☒ **C** oval and not spotted

☒ **D** round and not spotted

(Total for Question 15 = 1 mark)

16 Identify the bean shown in this photograph.

☒ **A** garbanzo bean

☒ **B** kidney bean

☒ **C** pinto bean

☒ **D** white northern bean

(Total for Question 16 = 1 mark)

P48436A0928

17 Which of the following will **not** speed up the dissolving of sugar cubes in water?

☒ **A** using hotter water

☒ **B** adding more sugar

☒ **C** more stirring

☒ **D** using smaller sugar cubes

(Total for Question 17 = 1 mark)

18 Which one of these is a reversible change?

☒ **A** baking a cake

☒ **B** burning wood

☒ **C** making a pot by heating clay

☒ **D** melting candle wax

(Total for Question 18 = 1 mark)

19 The diagram shows a food web in a pond.
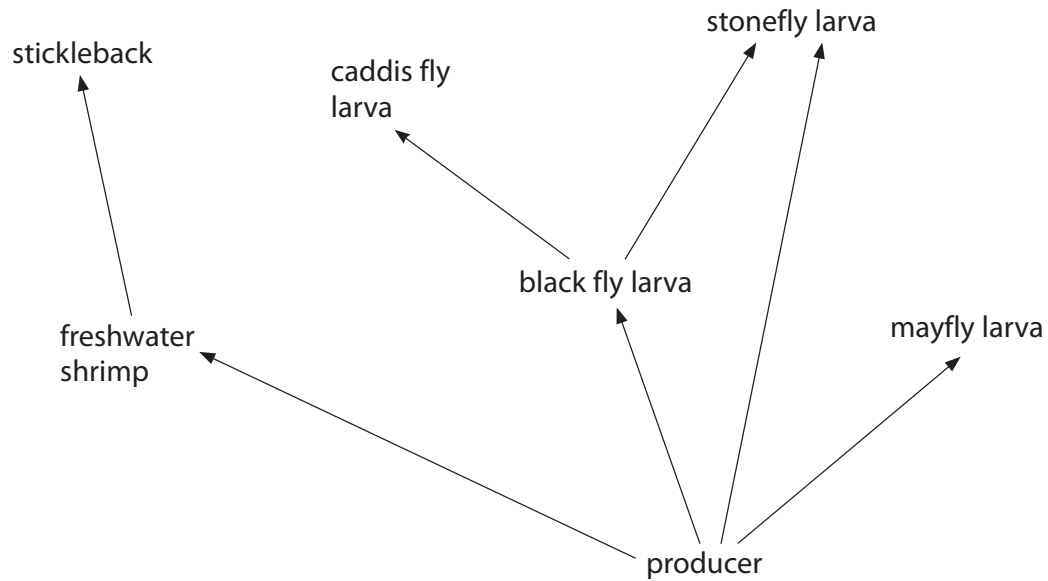
The sticklebacks catch a disease and many die.

What might then happen to the numbers of freshwater shrimps and mayfly larvae?

Circle **one** answer for each animal and give a reason for your choice.

Freshwater shrimp numbers: increase   decrease   no change

Reason ....

....

(1)

Mayfly larvae numbers: increase   decrease   no change

Reason ....

....

(1)

(Total for Question 19 = 2 marks)

20 (a) Four students use this apparatus to investigate shadows.
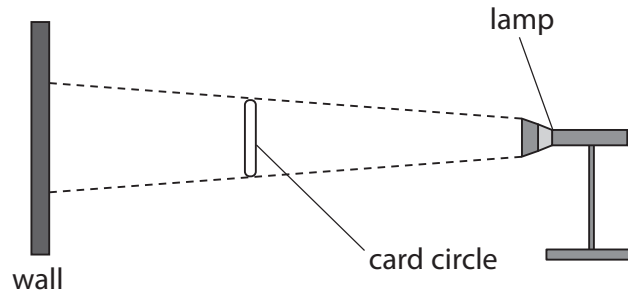
Each student makes a prediction.

Anna

If we make the card circle bigger, the shadow will get smaller.

Ben

If we move the lamp nearer the wall, the shadow will get bigger.

Dom

If we put a brighter bulb in the lamp, the shadow will get bigger.

Carter

If we move the card nearer the lamp, the shadow will get smaller.

Whose prediction is correct? ....

(1)

(b) The students change the card circle into a card triangle.

Explain why the shadow changes when the students change the card from a circle to a triangle.

(2)

....

....

....

....

(c) The students then change the card circle to a square mirror.

What will they see on the wall? Explain your answer.

(1)

....

....

....

(d) The photograph shows Dom reading a book.

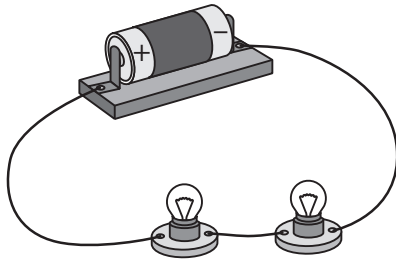Complete the ray diagram **below** to show how the light helps Dom to see his book.

(2)

(Total for Question 20 = 6 marks)

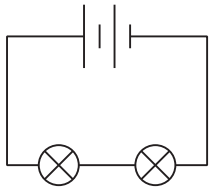**For questions 21 – 29 put a cross in one box ⊠ to indicate your answer.
If you change your mind, put a line through the box ⊠ and then put a cross in another box ⊠.
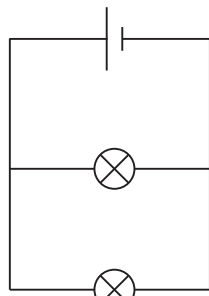Each question is worth one mark.**
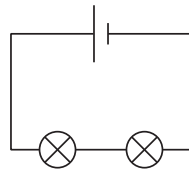
21 Tom makes this circuit.

Which is the correct circuit diagram for Tom's circuit?

A　　　　　　**B**　　　　　　**C**　　　　　　**D**
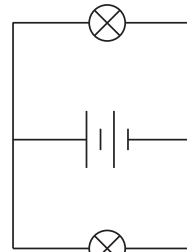
⊠ **A**

⊠ **B**

⊠ **C**

⊠ **D**

(Total for Question 21 = 1 mark)

22 Mae has a bottle of olive oil. She pours some vinegar into the bottle of olive oil.

She shakes the mixture to make salad dressing.

Which sentence **best** describes what happens?

☒ **A**   An emulsion is formed.

☒ **B**   The olive oil dissolves in the vinegar.

☒ **C**   A liquid foam is formed.

☒ **D**   The vinegar dissolves in the olive oil.

(Total for Question 22 = 1 mark)

23 Which row of the table **best** shows why plants need magnesium and nitrates?

	Magnesium helps plants to	Nitrates help plants to
☒ **A**	grow	stay green
☒ **B**	turn yellow	germinate
☒ **C**	stay green	grow
☒ **D**	germinate	turn yellow

(Total for Question 23 = 1 mark)

P 4 8 4 3 6 A 0 1 5 2 8

24 The photographs show two forces acting on a car.

In which photograph will the car be moving forward?

A

B

C

D

☒ **A**

☒ **B**

☒ **C**

☒ **D**

(Total for Question 24 = 1 mark)

25 Some changes are reversible, others are irreversible.

The table shows three changes: ice cream melting, wax burning and wood decaying.

Which row of the table describes these three changes correctly?

	Ice cream melting	Wax burning	Wood decaying
☒ **A**	irreversible	irreversible	reversible
☒ **B**	irreversible	reversible	reversible
☒ **C**	reversible	irreversible	irreversible
☒ **D**	reversible	reversible	irreversible

(Total for Question 25 = 1 mark)

26 Beth wants to measure the current in this circuit.
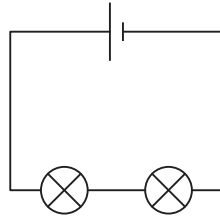
Which row shows the correct instrument and unit she should use?

	Instrument	Unit
A	ammeter	amps
B	ammeter	volts
C	voltmeter	amps
D	voltmeter	volts

(Total for Question 26 = 1 mark)

27 Jack is floating in a swimming pool.
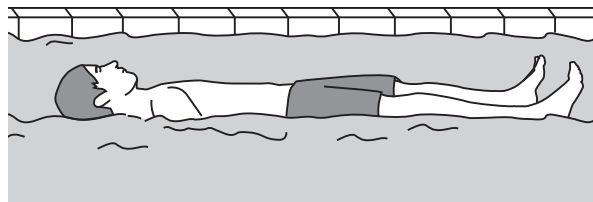
Jack weighs 300 N. What is the upthrust on Jack as he floats?

- ☒ **A** 3000 N
- ☒ **B** 300 N
- ☒ **C** 30 N
- ☒ **D** 30 kg

(Total for Question 27 = 1 mark)

P 4 8 4 3 6 A 0 1 7 2 8

28 The graph shows how the solubility of four different substances, **A**, **B**, **C**, **D**, changes as the temperature increases.

Grams of substance dissolved in 100 g of water

(graph: y-axis values 10, 20, 30, 40, 50, 60, 70; x-axis Temperature (°C) values 50, 60, 70, 80, 90, 100; curves labelled A, B, C, D)
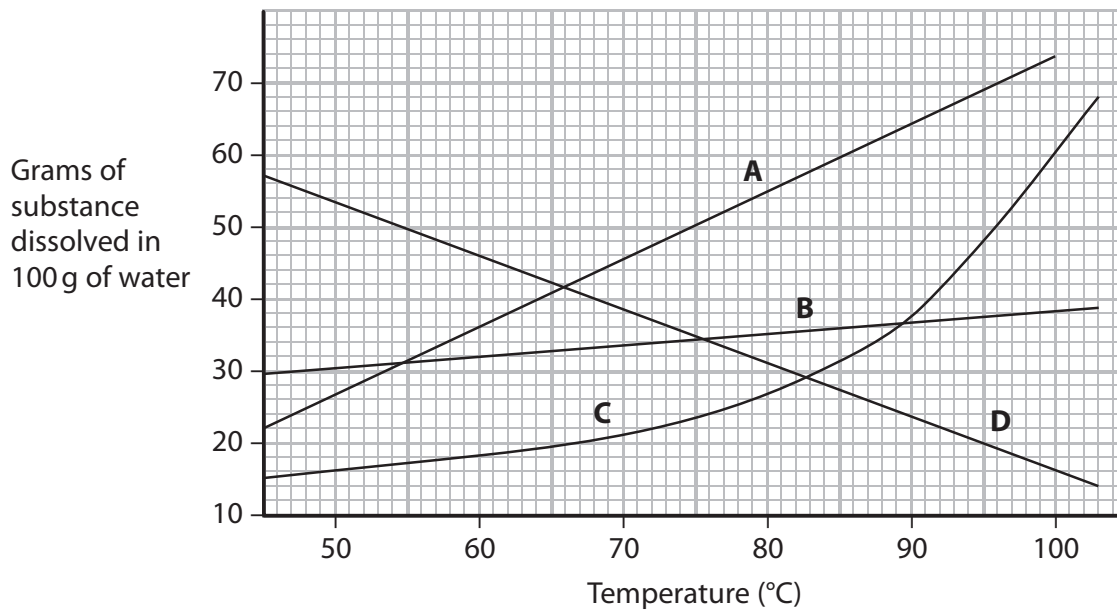
The solubility of which substance, **A**, **B**, **C** or **D**, changes **least** as the temperature increases?

☒ **A**

☒ **B**

☒ **C**

☒ **D**

(Total for Question 28 = 1 mark)

29 A farmer uses nitrate fertiliser on a field. Some fertiliser washes into a pond.

Which statement **best** describes what may happen?

☒ **A** The fertiliser kills the crops growing in the field.

☒ **B** The fish in the pond grow bigger.

☒ **C** The fertiliser makes the plants in the pond grow bigger.

☒ **D** The crops in the field do not grow.

(Total for Question 29 = 1 mark)

30 (a) Jenna has a mixture of sand and water. She has the apparatus shown in the diagram below.

mixture of sand and water
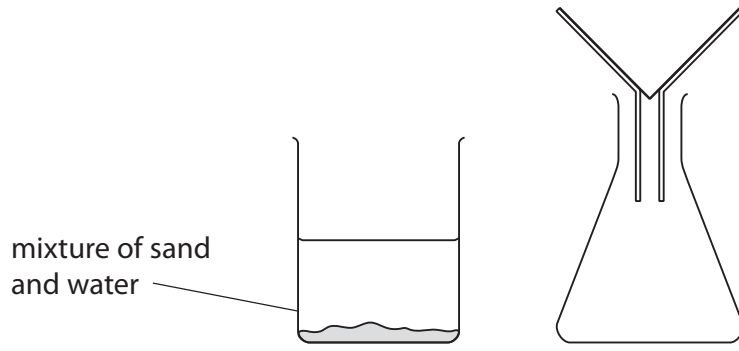
Explain how Jenna should use the apparatus to separate the sand and water.

(3)

....

....

....

....

....

....

(b) Jenna has some salty water. She wants to make some dry salt using the apparatus below.
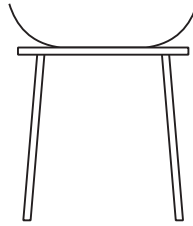
Explain how Jenna will use this apparatus to make some dry salt.

(4)

....

....

....

....

....

....

(Total for Question 30 = 7 marks)

TOTAL FOR SECTION A = 45 MARKS

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P 4 8 4 3 6 A 0 2 1 2 8

SECTION B

Answer ALL questions.

31 Juliet is investigating the strength of different types of paper.

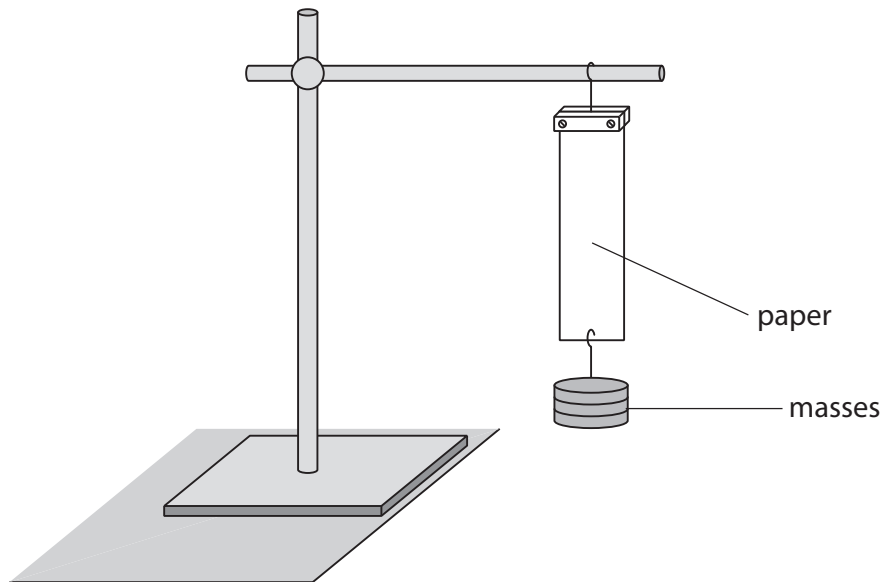She makes a hole in a piece of writing paper and hangs masses on it, one at a time, until the paper tears and the masses fall off.

She does the same experiment with tissue paper, printer paper and newspaper.

paper

masses

(a) Give two things that Juliet must keep the same to make her investigation a fair test.

(2)

1 ....

2 ....

(b) Juliet wears safety glasses. Give **one other** safety precaution that she should take when doing **this** investigation.

(1)

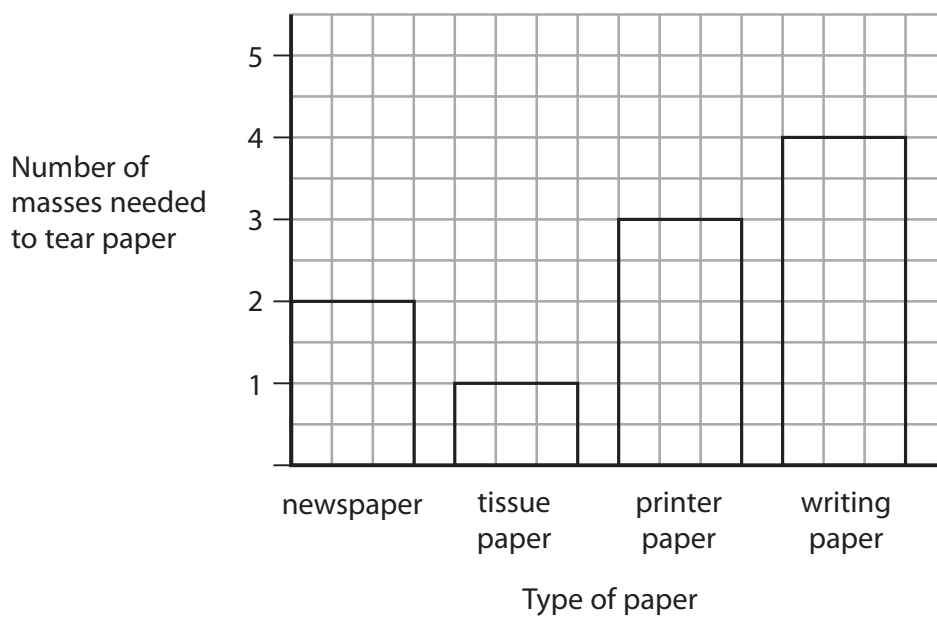..

PapaCambridge

(c) The bar chart shows Juliet's results.

Juliet uses the bar chart to decide which type of paper was the strongest.

(i) From the bar chart, which type of paper was the strongest?

Circle **one** answer below and explain your choice.

news paper   tissue paper   printer paper   writing paper

(2)

Explanation ....

....

(ii) How could Juliet be more certain that her conclusion was correct?

(1)

....

(Total for Question 31 = 6 marks)

PapaCambridge

32 (a) Pulse rate is the rate at which a person's heart beats.

Sameer measured his pulse rate three times while he was sitting on a chair.

He calculated his average pulse rate.

Why did he calculate his **average** pulse rate?

(1)

....

....

(b) Sameer did some exercise and measured his pulse rate at regular intervals during and after the exercise. His results are shown on the graph below.
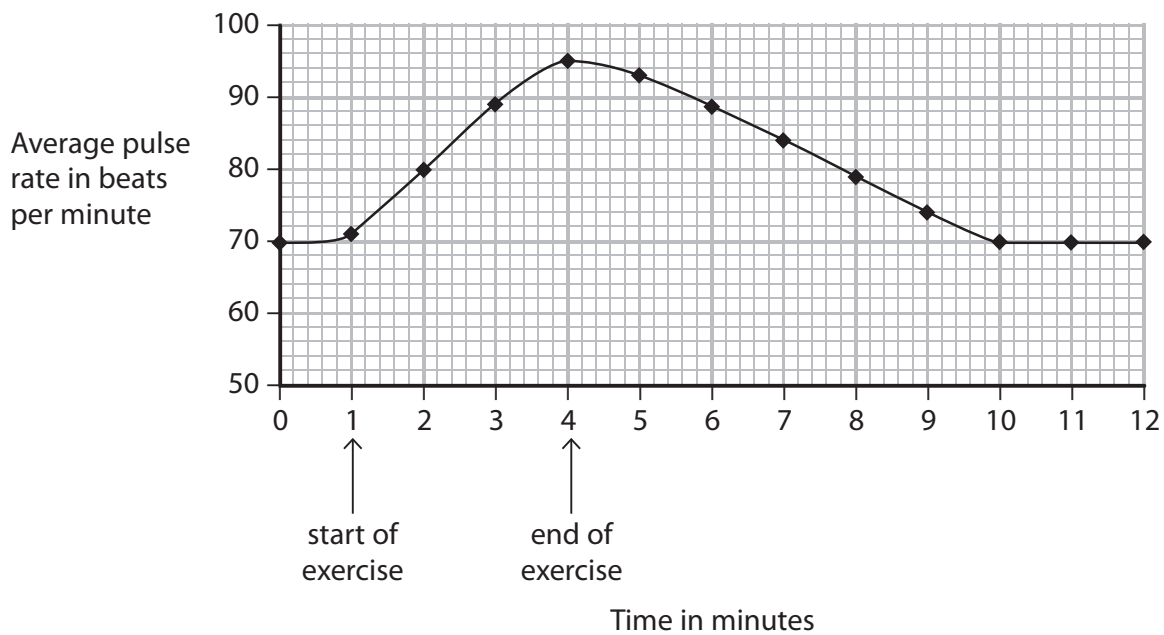
(i) Name one piece of equipment that Sameer needed to use to collect the data on the graph.

(1)

....

(ii) For how long did Sameer exercise?

(1)

....minutes

(iii) After the exercise, how long did it take for Sameer's pulse rate to go back to the same rate as before he started the exercise?

(1)

....minutes

(Total for Question 32 = 4 marks)

P 4 8 4 3 6 A 0 2 5 2 8

PapaCambridge

33 (a) Sonja is investigating the effect of temperature on the solubility of a solid called copper sulfate.

She dissolves copper sulfate crystals in water, until no more dissolves.

She records the mass of copper sulfate that dissolves.

Sonja repeats her experiment using the same volume of water each time, but at different temperatures.

Which variable does Sonja change and which does she measure?

(2)

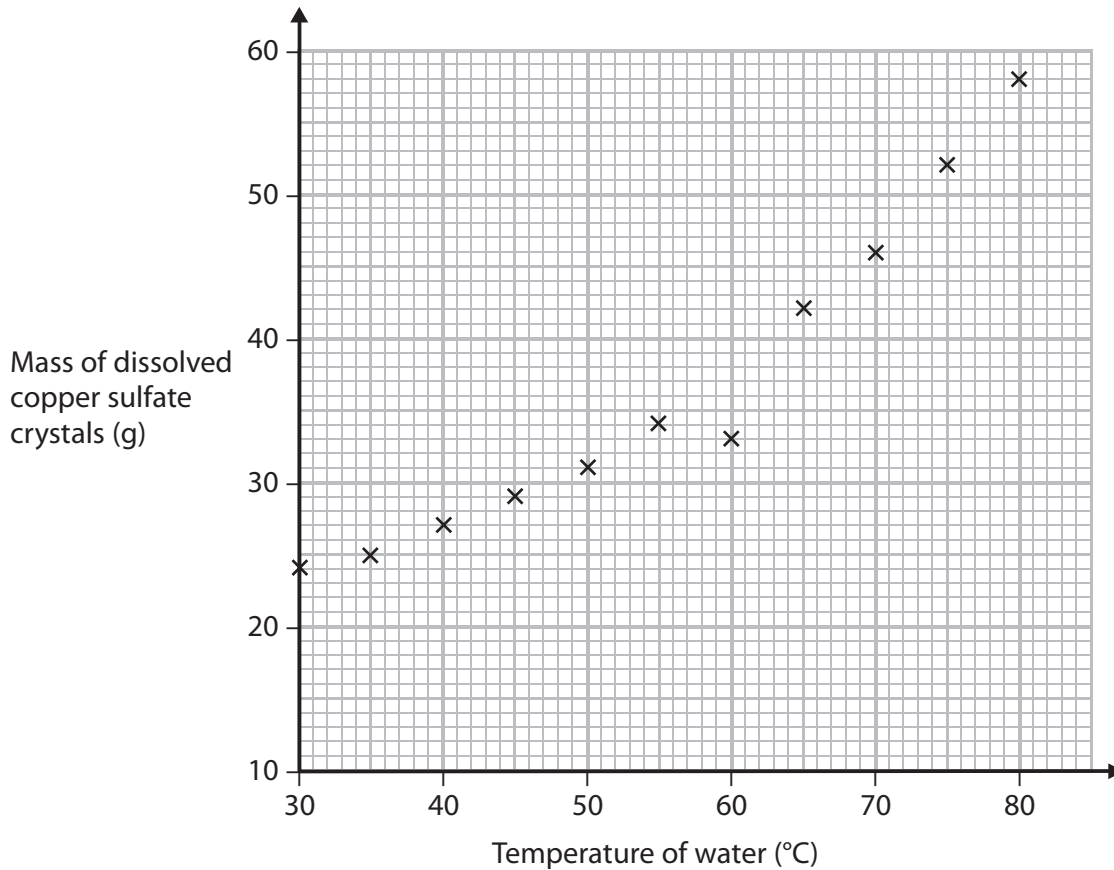(i) changes ....

(ii) measures ....

(b) Sonja plots her results on a graph.

Mass of dissolved copper sulfate crystals (g) — vertical axis (10 to 60)

Temperature of water (°C) — horizontal axis (30 to 80)

(i)   Circle one plotted point on the graph that does not fit the pattern.

(1)

(ii) Use the graph to predict a more likely value for the point you have circled in part (i).

(1)

....g

(iii) Suggest one mistake that Sonja might have made **in this experiment** to produce a result that did not fit the pattern of all the other results.

(1)

....

....

(Total for Question 33 = 5 marks)

TOTAL FOR SECTION B = 15 MARKS
TOTAL FOR PAPER = 60 MARKS

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