Please check the examination details below before entering your candidate information

| Candidate surname | Other names |
|---|---|
| | |

Centre Number | Candidate Number

# Pearson Edexcel International Award in Primary

## Thursday 19 October 2023

Morning (Time: 1 hour)

Paper reference **JSC11/01**

# Science

## Year 6
## Achievement Test iPrimary

**You must have:**
Ruler
Calculator

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches/graphs it must be dark (HB or B).
- **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 paper is divided into two sections, Section A and Section B.
- The total mark for Section A is 45.
- The total mark for Section B is 15.
- 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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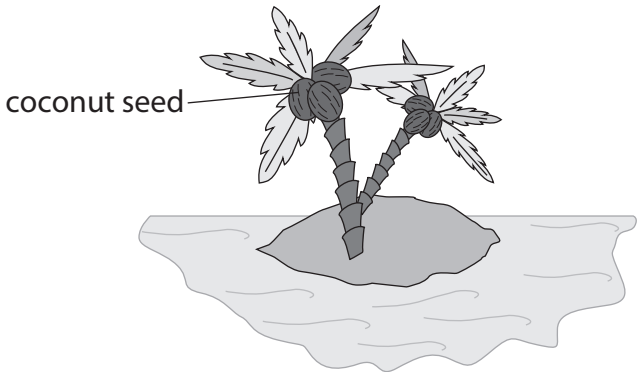
Pearson

## SECTION A

**Answer ALL questions.**

**For questions 1–10 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** The diagram shows coconut seeds on a coconut tree.




How are coconut seeds dispersed?

☒ **A** by animals

☒ **B** by explosion

☒ **C** by water

☒ **D** by wind

**(Total for Question 1 = 1 mark)**

**2** Which of these conducts electricity?

☒ **A** metal

☒ **B** paper

☒ **C** plastic

☒ **D** wood

**(Total for Question 2 = 1 mark)**

**3** Which statement is true?

☒ **A** breathing is how oxygen is used by organs in the body

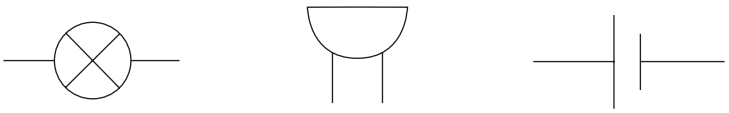
☒ **B** breathing is the ventilation of the lungs

☒ **C** respiration is the ventilation of the lungs

☒ **D** respiration is how oxygen reaches organs in the body

**(Total for Question 3 = 1 mark)**

**4** P, Q and R are symbols used in diagrams of electrical circuits.



P Q R

Which row correctly names P, Q and R?

| | P | Q | R |
|---|---|---|---|
| ☒ **A** | cell | buzzer | bulb |
| ☒ **B** | bulb | switch | cell |
| ☒ **C** | cell | bulb | switch |
| ☒ **D** | bulb | buzzer | cell |

**(Total for Question 4 = 1 mark)**

**5** Which of these are fungi?

☒ **A** bacteria

☒ **B** spiders

☒ **C** viruses

☒ **D** yeast

**(Total for Question 5 = 1 mark)**

**6** Water is a liquid.

Sand is made of very small particles.

In what way does sand behave like water?

- ☒ **A** sand melts at 0 °C and can evaporate from an open container
- ☒ **B** sand can flow and evaporate from an open container
- ☒ **C** sand can flow and take the shape of the bottom of a container
- ☒ **D** sand melts at 0 °C and takes the shape of the bottom of a container

**(Total for Question 6 = 1 mark)**

**7** A solar eclipse occurs when the Moon blocks light from the Sun. This causes a shadow on the Earth.

What shape is the shadow on the Earth?

- ☒ **A** a circle
- ☒ **B** a square
- ☒ **C** a star
- ☒ **D** a triangle

**(Total for Question 7 = 1 mark)**

**8** What could be used to separate a mixture of iron filings and flour?

- ☒ **A** evaporation
- ☒ **B** filtering
- ☒ **C** freezing
- ☒ **D** magnetism

**(Total for Question 8 = 1 mark)**

**9** What happens to light when it reflects from a flat mirror?

- ☒ **A** it changes colour
- ☒ **B** it changes direction
- ☒ **C** it changes size
- ☒ **D** nothing changes

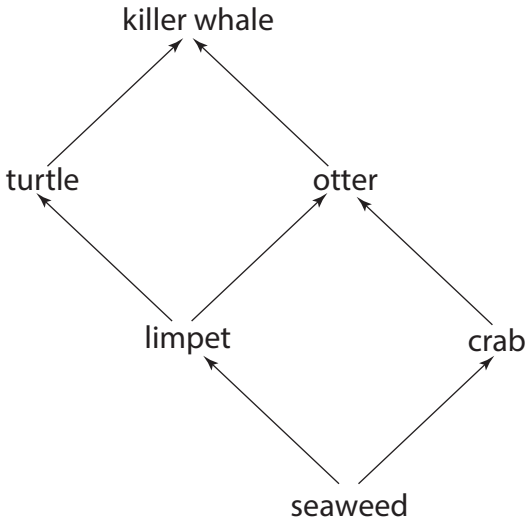
**(Total for Question 9 = 1 mark)**

**10** Which statement is correct?

- ☒ **A** a solvent is made when a solution dissolves in a solute
- ☒ **B** a solution is made when a solvent dissolves in a solute
- ☒ **C** a solvent is made when a solute dissolves in a solution
- ☒ **D** a solution is made when a solute dissolves in a solvent

**(Total for Question 10 = 1 mark)**

**11** (a) The diagram shows a food web.




(i) Name the producer in this food web.

**(1)**

.....

(ii) Name one predator of the limpet in this food web.

**(1)**

.....

(b) What is the role of decomposers in food chains?

**(2)**

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**(Total for Question 11 = 4 marks)**

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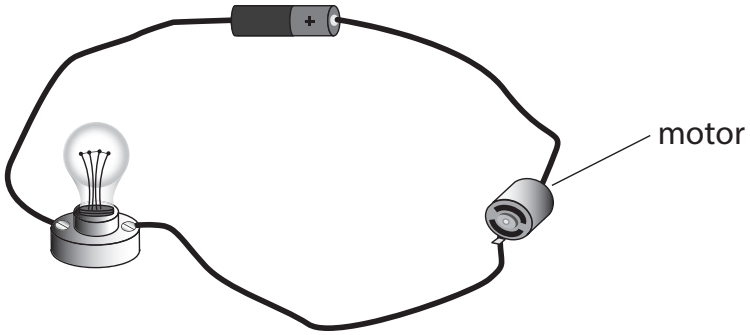
**12** A student makes this circuit.




The motor turns very slowly.

Suggest **one** change the student could make to the circuit to make the motor turn faster.

**(1)**

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**(Total for Question 12 = 1 mark)**

**For questions 13–19 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.**

**13** Hygiene precautions are taken when preparing food.

Which of these is **not** a food hygiene precaution?

- ☒ **A** clean all surfaces before putting food onto them
- ☒ **B** tie up long hair
- ☒ **C** open the window before touching food
- ☒ **D** wash your hands before touching food

**(Total for Question 13 = 1 mark)**

**14** What is the function of the heart?

- ☒ **A** to breathe in air
- ☒ **B** to circulate blood
- ☒ **C** to improve fitness
- ☒ **D** to store food

**(Total for Question 14 = 1 mark)**

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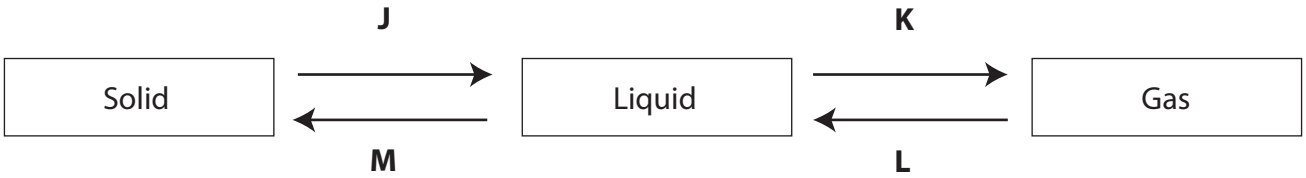
**15** The diagram shows four changes of state, **J**, **K**, **L** and **M**.




Which row of the table shows the correct names for these changes of state?

| | J | K | L | M |
|---|---|---|---|---|
| ☒ **A** | melting | evaporation | condensation | freezing |
| ☒ **B** | freezing | condensation | evaporation | melting |
| ☒ **C** | melting | evaporation | evaporation | melting |
| ☒ **D** | freezing | condensation | condensation | freezing |

**(Total for Question 15 = 1 mark)**

**16** A seed is placed in soil.

Which are the best conditions for the seed to germinate?

☒ **A** damp and cold

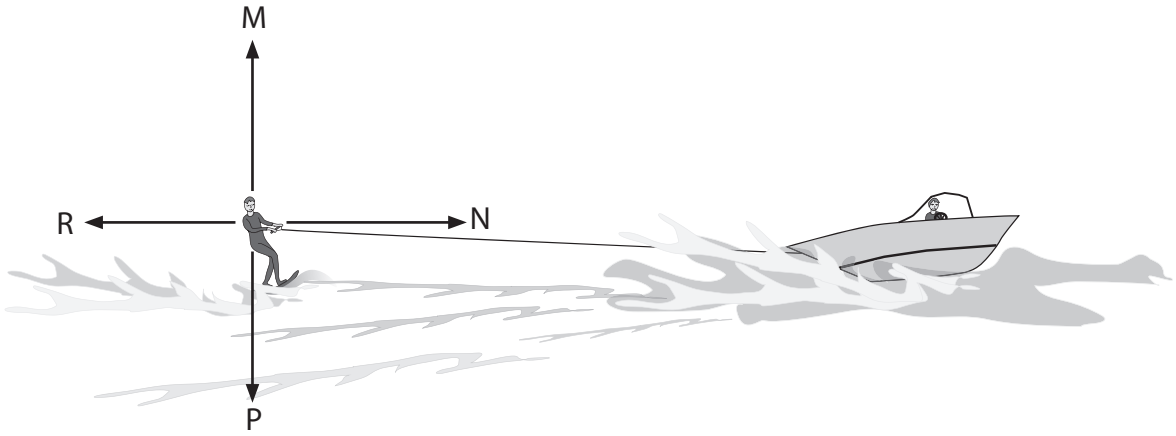
☒ **B** dry and warm

☒ **C** damp and warm

☒ **D** dry and cold

**(Total for Question 16 = 1 mark)**

**17** The diagram shows four forces, M, N, P and R, acting on a water-skier.




Which arrow shows the direction of the largest force?

- ☒ **A** M
- ☒ **B** N
- ☒ **C** P
- ☒ **D** R

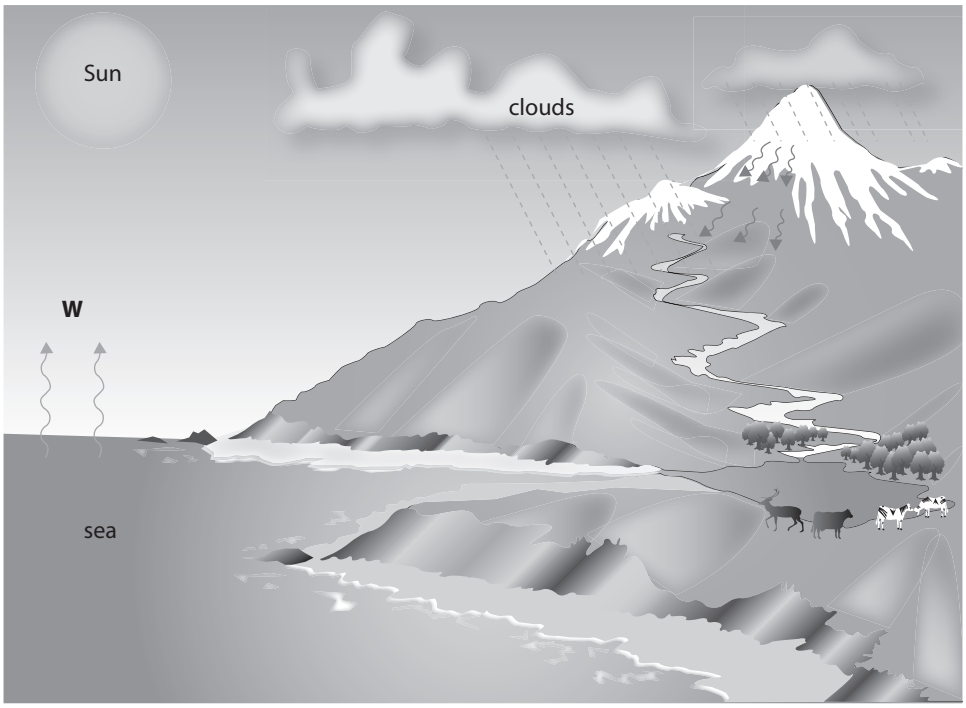
**(Total for Question 17 = 1 mark)**

**18** Which of these habitats is a microhabitat?

| | | |
|---|---|---|
| ☒ | **A**  | Desert |
| ☒ | **B**  | Ocean |
| ☒ | **C**  | Grassland |
| ☒ | **D**  | Fallen tree trunk |

**(Total for Question 18 = 1 mark)**

**19** The diagram shows the water cycle.




What is the name of the process at **W**?

- ☒ **A** condensation
- ☒ **B** decomposition
- ☒ **C** evaporation
- ☒ **D** precipitation

**(Total for Question 19 = 1 mark)**

**20** (a) Plants can be classified as flowering or non-flowering.

Draw **one** straight line from each plant to its correct classification.

**(2)**

| **plant** | **classification** |
|---|---|
|  daffodil | flowering plant |
|  moss | non-flowering plant |
|  tree | |
|  grass | |
|  fern | |

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(b) Flowering plants reproduce using seeds which are then dispersed.

Why do plants need to disperse their seeds?

**(2)**

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**(Total for Question 20 = 4 marks)**

**21** Changes can be reversible or irreversible.

Place **one** tick (✓) in **each row** to show if each change is reversible or irreversible.

**(2)**

| Change | Reversible | Irreversible |
|---|---|---|
| burning a wax candle | | |
| melting ice | | |
| iron nails rusting | | |
| baking bread | | |

**(Total for Question 21 = 2 marks)**

**22** The diagram shows a child reading a book at night.

Draw a simple ray diagram to show how the light allows the child to read the book.

**(2)**

**(Total for Question 22 = 2 marks)**

**For questions 23–26a 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.**

**23** Which of these is measured in Newtons?

☒ **A** length

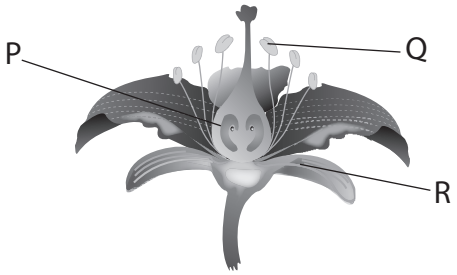
☒ **B** force

☒ **C** temperature

☒ **D** volume

**(Total for Question 23 = 1 mark)**

**24** The diagram shows parts of a flower.




Which row correctly names parts **P**, **Q** and **R**?

| | P | Q | R |
|---|---|---|---|
| ☒ **A** | ovary | filament | petal |
| ☒ **B** | ovary | anther | sepal |
| ☒ **C** | ovule | anther | sepal |
| ☒ **D** | ovule | filament | petal |

**(Total for Question 24 = 1 mark)**

**25** In the life cycle of a plant, which process takes place **immediately** before fertilisation?

- ☒ **A** flowering
- ☒ **B** germination
- ☒ **C** pollination
- ☒ **D** seed dispersal

**(Total for Question 25 = 1 mark)**

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**26** A cyclist enters a road race on a dry day.

(a) The diagrams show the tread patterns of four different bicycle tyres, A, B, C and D.

Which tyre should the cyclist choose to help them travel fastest?

**(1)**

| | |
|---|---|
| ☒ | **A**  |
| ☒ | **B**  |
| ☒ | **C**  |
| ☒ | **D**  |

(b) Explain **one** other change the cyclist can make to increase their speed.

**(2)**

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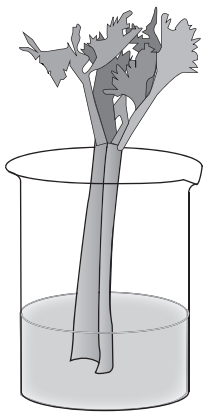
**(Total for Question 26 = 3 marks)**

**27** The stem of a plant is placed into blue-coloured water.



After a few hours the leaves of the plant turn blue.

Why does this happen?

**(1)**

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**(Total for Question 27 = 1 mark)**

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**28** The table shows the length of a year on four of the planets in the Solar System.

| | Planet | | | |
|---|---|---|---|---|
| | **Earth** | **Mercury** | **Neptune** | **Saturn** |
| **Length of a year in Earth days** | 365 | 88 | 60 190 | 10 756 |

Circle the correct words in each pair of words shown in **bold** to show how the length of the year of the planets changes as the distance of the planets from the Sun changes.

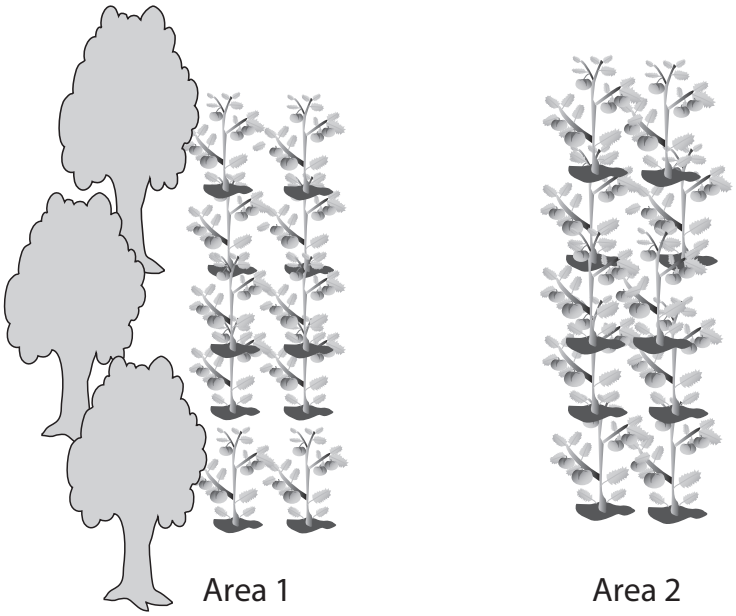
**(1)**

The **nearer to / further from** the Sun the planet is, the **shorter / longer** the length of the year on the planet.

**(Total for Question 28 = 1 mark)**

**29** A gardener plants two areas of a garden with tomatoes.

They plant the same number and the same type of seed on the same day in each area.



Area 1 Area 2

When the tomatoes are ready to pick, the gardener collects all the tomatoes and weighs them.

In Area 1 they collect 25.6 kg of tomatoes.

In Area 2 they collect 41.8 kg of tomatoes.

Explain why the gardener gets a larger tomato crop from Area 2 than Area 1.

**(2)**

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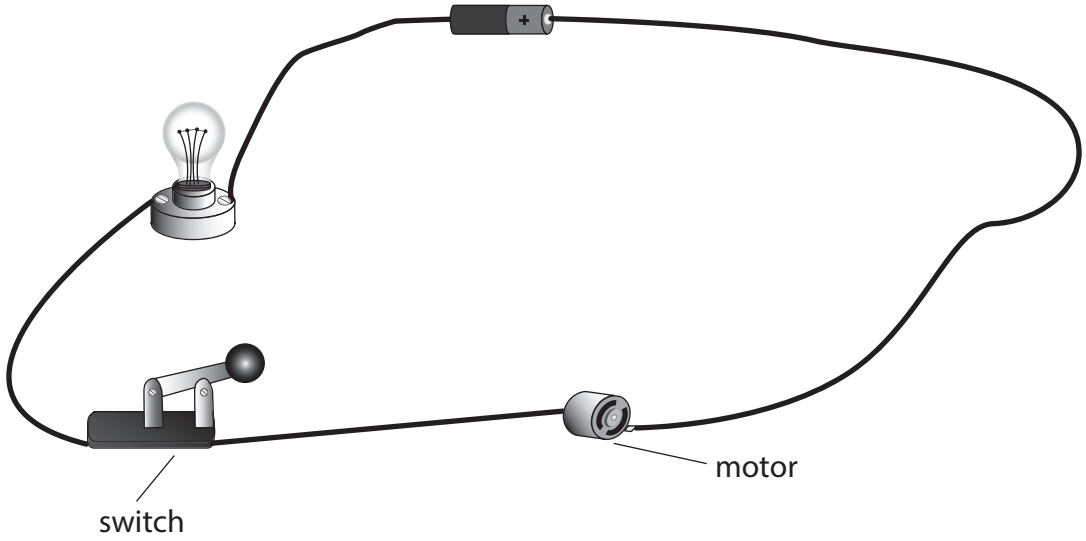
**(Total for Question 29 = 2 marks)**

**30** A student builds this circuit so they can switch between running the motor **or** lighting the bulb.




Explain why the student will **not** be able to switch between running the motor **or** lighting the bulb with this circuit.

**(2)**

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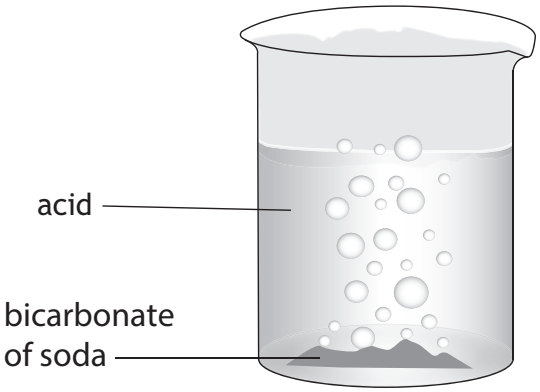
**(Total for Question 30 = 2 marks)**

**31** The diagram shows what happens when bicarbonate of soda is added to an acid.




How does the diagram show this is an **irreversible** reaction?

**(1)**

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**(Total for Question 31 = 1 mark)**

**32** The picture shows some large sugar crystals.

A student investigates dissolving one of these sugar crystals in water.

The student places the crystal into 100 $cm^3$ of cold water and stirs the mixture at one-minute intervals.

The crystal takes five minutes to dissolve.

Give **two** changes the student can make so the crystal dissolves faster.

**(2)**

1 .....

2 .....

**(Total for Question 32 = 2 marks)**

**TOTAL FOR SECTION A = 45 MARKS**

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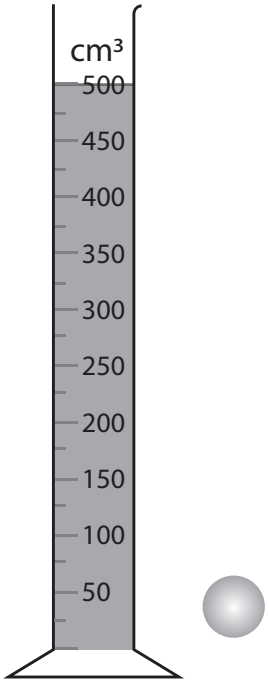
## SECTION B

**Answer ALL the questions. Write your answers in the spaces provided.**

**33** A class investigates how fast a plasticine ball sinks in three different liquids.

The diagram shows some of the equipment the class uses.




This is the method the class uses.

**Step 1** fill the measuring cylinder with 500 $cm^3$ of water

**Step 2** hold the ball level with the top of the measuring cylinder

**Step 3** release the ball and start timing

**Step 4** stop timing when the ball reaches the bottom of the measuring cylinder

**Step 5** repeat these steps using vegetable oil and washing up liquid instead of water

(a) Name the piece of equipment needed for making the measurements in steps 3 **and** 4.

**(1)**

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(b) Give **two** ways the method makes the investigation a fair test.

**(2)**

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2 .....

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(c) The table shows the results of the investigation.

| Liquid | Time in seconds |
|---|---|
| water | 1 |
| vegetable oil | 9 |
| washing up liquid | 29 |

How can the class improve the reliability of their results?

Tick (✓) **one** correct answer.

**(1)**

| | Tick (✓) |
|---|---|
| release the ball from a greater height | |
| repeat the investigation | |
| use more liquids | |
| use different sized measuring cylinders | |

(d) Which other scientific questions would it be sensible to investigate using the same equipment as the class?

Place **one** tick (✓) in **each row**.

**(1)**

| Question | Yes | No |
|---|---|---|
| Does the time of day affect how fast the ball sinks? | | |
| Does the shape of an object affect how fast it sinks? | | |
| Does the temperature of the liquid affect how fast the ball sinks? | | |

**(Total for Question 33 = 5 marks)**

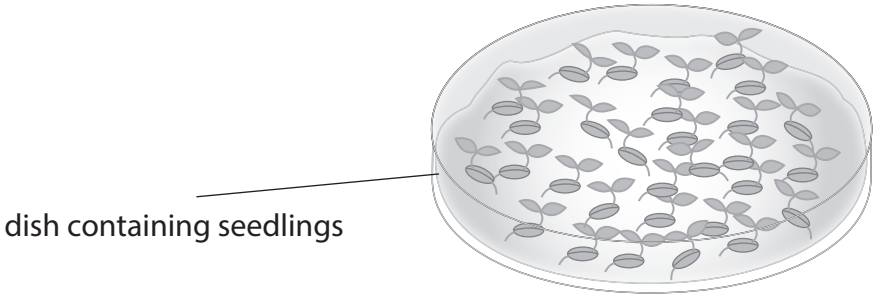
**34** A scientist investigates the question

*How does the temperature affect how fast seeds germinate and grow?*

The scientist places three identical dishes of seeds in three different places, in a refrigerator with a light, on a windowsill and on a heat mat near a window.

Each dish contains 30 seeds and has the same amount of water added to it each day.

After eight days the scientist measures the height of all the seedlings.




(a) The table shows a list of variables in this investigation.

Place **one** tick (✓) in **each row** to show if the variable has been changed or controlled.

**(1)**

| Variable | Variable changed | Variable controlled |
|---|---|---|
| the temperature the dishes are kept at | | |
| the time the seedlings grow for | | |
| the number of seeds in a dish | | |

(b) The scientist puts a thermometer beside each of the dishes.

Why does the scientist put a thermometer beside each dish?

**(1)**

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(c) The scientist measures the height of each seedling that has grown.

The scientist has a choice of three rulers, A, B and C.

**Ruler A**


**Ruler B**


**Ruler C**


Explain which ruler, A, B or C, is the best to use.

**(2)**

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**(Total for Question 34 = 4 marks)**

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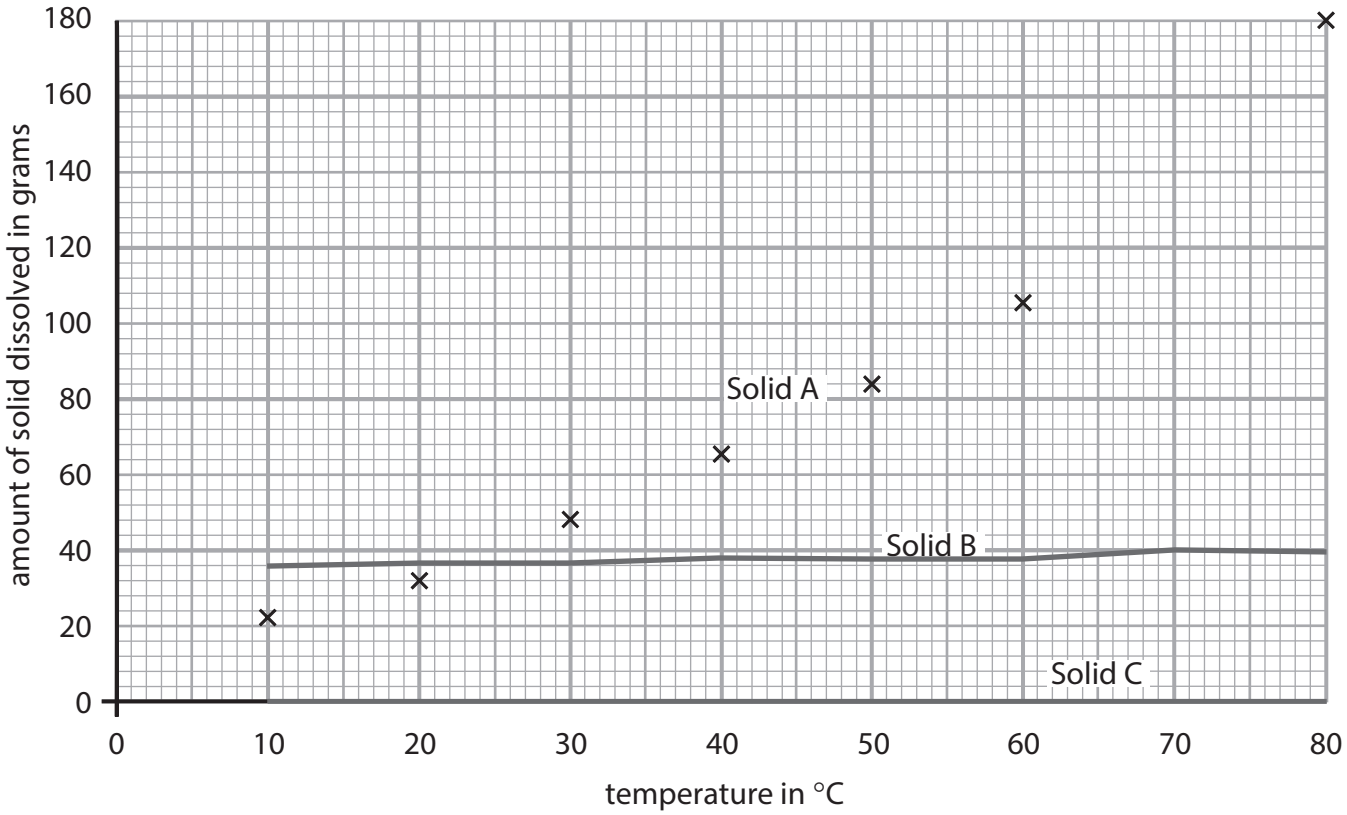
**35** A student investigates how temperature affects the amount of three different solids, A, B and C, that dissolve in water.

They use the same volume of water each time.

They make a prediction.

*The number of grams of each solid that dissolves will always be the same at any temperature.*

This is a graph of their results for solids A, B and C.




(a) What conclusion can be made about the solubility of solid C?

**(1)**

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(b) At 70 °C the student dissolves 140 g of solid **A**.

(i) Plot this result on the graph.

**(1)**

(ii) Draw a curved line of best fit on the graph for solid **A**.

**(1)**

(iii) Use the graph to predict how much of solid **A** would dissolve at 25 °C.

**(1)**

(c) The student says

*My results do not support my prediction*.

How do the student's results **not** support their prediction?

**(2)**

**(Total for Question 35 = 6 marks)**

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

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Question 18 Ocean – © PAL
Question 18 Grassland – © PAL
Question 18 Fallen tree trunk – © PAL
Question 20a Daffodil – © ULKASTUDIO/Shutterstock
Question 20a Moss – © thor Hvozdetskyi/Shutterstock
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