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**SCIENCE**

Paper 2

SPECIMEN MARK SCHEME

**0846/02**

**For Examination from 2014**

**45 minutes**

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**MAXIMUM MARK: 50**

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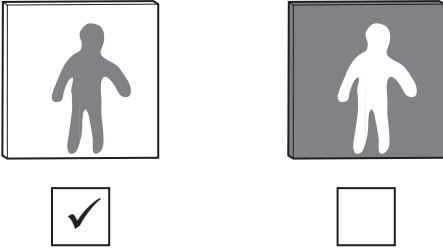
This document consists of **10** printed pages.

| Question     | 1        |  |  |
|--------------|----------|--|--|
| Part         | Mark     | Answer   | Further Information  |
|              | 2        | <p>The Sun takes 1 year to orbit the Earth. <input type="checkbox"/></p> <p>The Earth takes 1 year to orbit the Sun. <input checked="" type="checkbox"/></p> <p>The Earth takes 24 hours to orbit the Sun. <input type="checkbox"/></p> <p>The Earth spins on its axis once every 24 hours. <input checked="" type="checkbox"/></p> <p>The Earth spins on its axis once every year. <input type="checkbox"/></p> | <p>2 ticks, both correct = 2 marks</p> <p>2 ticks, 1 correct = 1 mark</p> <p>3 ticks, 2 correct = 1 mark</p> <p>3 ticks, 1 correct = 0 mark</p> <p>4 or 5 ticks = 0 mark</p> |
| <b>Total</b> | <b>2</b> |  |  |

| Question      | 2                            |  |  |                              |          |      |     |      |         |  |  |  |  |  |                               |
|---------------|------------------------------|--|--|------------------------------|----------|------|-----|------|---------|--|--|--|--|--|-------------------------------|
| Part          | Mark                         | Answer   | Further Information  |                              |          |      |     |      |         |  |  |  |  |  |                               |
| (a)           | 1                            | <table border="1"> <thead> <tr> <th>living things</th> <th>things that have never lived</th> </tr> </thead> <tbody> <tr> <td>kangaroo</td> <td>rock</td> </tr> <tr> <td>rat</td> <td>sand</td> </tr> <tr> <td>seaweed</td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table> | living things  | things that have never lived | kangaroo | rock | rat | sand | seaweed |  |  |  |  |  | Both columns correct = 1 mark |
| living things | things that have never lived |  |  |                              |          |      |     |      |         |  |  |  |  |  |                               |
| kangaroo      | rock                         |  |  |                              |          |      |     |      |         |  |  |  |  |  |                               |
| rat           | sand                         |  |  |                              |          |      |     |      |         |  |  |  |  |  |                               |
| seaweed       |                              |  |  |                              |          |      |     |      |         |  |  |  |  |  |                               |
|               |                              |  |  |                              |          |      |     |      |         |  |  |  |  |  |                               |
|               |                              |  |  |                              |          |      |     |      |         |  |  |  |  |  |                               |
| (b)           | 1                            | <p>it grows <input checked="" type="checkbox"/></p> <p>it feels warm <input type="checkbox"/></p> <p>it can get smaller <input type="checkbox"/></p> <p>it makes young ones <input checked="" type="checkbox"/></p>  | <p>2 ticks, both correct = 1 mark</p> <p>2 ticks, 1 correct = 0 marks</p> <p>3 ticks, 2 correct = 0 marks</p> <p>4 ticks = 0 marks</p> |                              |          |      |     |      |         |  |  |  |  |  |                               |
| <b>Total</b>  | <b>2</b>                     |  |  |                              |          |      |     |      |         |  |  |  |  |  |                               |

| Question     | 3            |   |                                  |        |     |        |              |       |           |       |  |     |  |  |                      |
|--------------|--------------|---|----------------------------------|--------|-----|--------|--------------|-------|-----------|-------|--|-----|--|--|----------------------|
| Part         | Mark         | Answer  | Further Information              |        |     |        |              |       |           |       |  |     |  |  |                      |
| (a)          | 1            | <table border="1"> <thead> <tr> <th>solid</th> <th>liquid</th> <th>gas</th> </tr> </thead> <tbody> <tr> <td>butter</td> <td>orange juice</td> <td>steam</td> </tr> <tr> <td>chocolate</td> <td>water</td> <td></td> </tr> <tr> <td>ice</td> <td></td> <td></td> </tr> </tbody> </table> | solid                            | liquid | gas | butter | orange juice | steam | chocolate | water |  | ice |  |  | All correct = 1 mark |
| solid        | liquid       | gas   |                                  |        |     |        |              |       |           |       |  |     |  |  |                      |
| butter       | orange juice | steam   |                                  |        |     |        |              |       |           |       |  |     |  |  |                      |
| chocolate    | water        |   |                                  |        |     |        |              |       |           |       |  |     |  |  |                      |
| ice          |              |   |                                  |        |     |        |              |       |           |       |  |     |  |  |                      |
| (b)          | 1            | melting   |                                  |        |     |        |              |       |           |       |  |     |  |  |                      |
| (c)          | 1            | freezing  |                                  |        |     |        |              |       |           |       |  |     |  |  |                      |
| (d)          | 1            | (turns to) steam / water vapour / a gas / evaporates  | <b>Do not accept</b> it gets hot |        |     |        |              |       |           |       |  |     |  |  |                      |
| <b>Total</b> | <b>4</b>     |   |                                  |        |     |        |              |       |           |       |  |     |  |  |                      |

| Question     | 4                                     |  |                              |         |          |                                    |          |                                       |      |                         |  |
|--------------|---------------------------------------|--|------------------------------|---------|----------|------------------------------------|----------|---------------------------------------|------|-------------------------|--|
| Part         | Mark                                  | Answer   | Further Information          |         |          |                                    |          |                                       |      |                         |  |
| (a)          | 2                                     | <table border="0"> <thead> <tr> <th>term</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>producer</td> <td>an animal that eats another animal</td> </tr> <tr> <td>predator</td> <td>a green plant that makes its own food</td> </tr> <tr> <td>prey</td> <td>an animal that is eaten</td> </tr> </tbody> </table> | term                         | meaning | producer | an animal that eats another animal | predator | a green plant that makes its own food | prey | an animal that is eaten | 3 correct = 2 marks<br>1 or 2 correct = 1 mark |
| term         | meaning                               |  |                              |         |          |                                    |          |                                       |      |                         |  |
| producer     | an animal that eats another animal    |  |                              |         |          |                                    |          |                                       |      |                         |  |
| predator     | a green plant that makes its own food |  |                              |         |          |                                    |          |                                       |      |                         |  |
| prey         | an animal that is eaten               |  |                              |         |          |                                    |          |                                       |      |                         |  |
| (b)          | 1                                     | <p>a plant that eats another plant</p> <p>a plant that eats an animal</p> <p><b>an animal that eats a plant</b></p> <p>a plant that eats plants and animals</p>  | More than 1 circle = 0 marks |         |          |                                    |          |                                       |      |                         |  |
| <b>Total</b> | <b>3</b>                              |  |                              |         |          |                                    |          |                                       |      |                         |  |

| Question     | 5        |   |   |
|--------------|----------|---|---|
| Part         | Mark     | Answer  | Further Information   |
| (a)          | 1        | The puppet makes an image called a <b>shadow</b> on the screen.                   |   |
| (b)          | 1        | move the puppet away from the light / move puppet towards screen                  |   |
| (c)          | 1        |  | Both boxes ticked = 0 marks   |
| (d)          | 1        | no image / no shadow  | <b>Accept</b> the word nothing or no 'light coming through' or blank screen |
| <b>Total</b> | <b>4</b> |   |   |

| Question     | 6        |   |  |
|--------------|----------|---|--|
| Part         | Mark     | Answer  | Further Information                              |
| (a)          | 1        | <b>B</b>  | <b>Accept 78</b><br>2 or more answers = 0 marks  |
| (b)          | 1        | <b>C</b>  | <b>Accept 100</b><br>2 or more answers = 0 marks |
| (c)          | 2        | During boiling liquid changes into a <b>gas</b> .<br>During freezing liquid changes into a <b>solid</b> . | Each correct sentence = 1 mark                   |
| <b>Total</b> | <b>4</b> |   |  |

| Question     | 7        |  |   |
|--------------|----------|--|---|
| Part         | Mark     | Answer   | Further Information   |
|              | 1        | measure the shoots <input type="checkbox"/><br><br>put the pots in the same place <input checked="" type="checkbox"/><br><br>measures each shoot on a different day <input type="checkbox"/><br><br>uses 4 different pots <input type="checkbox"/> | 1 tick, correct = 1 mark<br><br>2 ticks, 1 correct = 0 marks<br><br>3 ticks, 1 correct = 0 marks<br><br>4 ticks = 0 marks |
| <b>Total</b> | <b>1</b> |  |   |

| Question     | 8        |  |                                 |
|--------------|----------|--|---------------------------------|
| Part         | Mark     | Answer   | Further Information             |
| (a)          | 1        | <b>B and C</b>                                     |                                 |
| (b)          | 1        | <b>D</b>   |                                 |
| (c)          | 2        | animals<br>hooks to fur / they stick to the animal | Each correct answer<br>= 1 mark |
| <b>Total</b> | <b>4</b> |  |                                 |

| Question     | 9        |  |  |
|--------------|----------|--|--|
| Part         | Mark     | Answer   | Further Information  |
|              | 3        | <p><b>measurement</b></p> <p>mass of tablet</p> <p>temperature of the water</p> <p>volume of water</p> | <p><b>equipment</b></p> <p>ruler</p> <p>thermometer</p> <p>beaker</p> <p>measuring cylinder</p> <p>balance</p> |
|              |          | <p>Each correct answer = 1 mark</p> <p>Each measurement must only have one line coming from it</p>     |  |
| <b>Total</b> | <b>3</b> |  |  |

| Question     | 10       |   |   |
|--------------|----------|---|---|
| Part         | Mark     | Answer  | Further Information   |
| (a)          | 1        | predaceous insects  | <b>Do not accept</b> insects  |
| (b)          | 2        | foxes, owls, snakes   | Any order<br>3 correct = 2 marks<br>2 correct = 1 mark<br>1 correct = 0 marks |
| (c)          | 1        | <b>Any one from:</b><br>plants → mice → foxes<br>plants → mice → owls<br>plants → mice → snakes |   |
| <b>Total</b> | <b>4</b> |   |   |

| Question     | 11       |  |   |
|--------------|----------|--|---|
| Part         | Mark     | Answer                                     | Further Information   |
| (a)          | 1        | vibration(s)                               |   |
| (b)          | 1        | hits a smaller key                         |   |
| (c)          | 1        | 13:00                                      | <b>Accept</b> 1 pm  |
| (d)          | 1        | gets louder <b>and</b> then softer/quieter | <b>Accept</b> goes up <b>and</b> then goes down   |
| (e)          | 1        | insulates from sound                       | <b>Accept</b> absorbs / muffles sound<br><b>or</b><br>does not let sound through / foam is sound proof / foam stops sound |
| <b>Total</b> | <b>5</b> |  |   |

| Question     | 12       |                |                               |
|--------------|----------|----------------|-------------------------------|
| Part         | Mark     | Answer         | Further Information           |
| (a)          | 1        | chalk          |                               |
| (b)          | 1        | sugar solution | <b>Do not accept</b> solution |
| (c)          | 1        | 2 (g)          |                               |
| <b>Total</b> | <b>3</b> |                |                               |



| Question     | 13       |   |  |  |    |  |          |   |           |                          |           |   |          |                          |           |   |           |                                     |           |   |          |                                     |                 |
|--------------|----------|---|--|--|----|--|----------|---|-----------|--------------------------|-----------|---|----------|--------------------------|-----------|---|-----------|-------------------------------------|-----------|---|----------|-------------------------------------|-----------------|
| Part         | Mark     | Answer  | Further Information  |  |    |  |          |   |           |                          |           |   |          |                          |           |   |           |                                     |           |   |          |                                     |                 |
| (a)          | 2        | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 30%;">from</th> <th style="width: 10%;"></th> <th style="text-align: right; width: 30%;">to</th> <th style="width: 30%;"></th> </tr> </thead> <tbody> <tr> <td>the body</td> <td style="text-align: center;">→</td> <td>the heart</td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td>the lungs</td> <td style="text-align: center;">→</td> <td>the body</td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td>the heart</td> <td style="text-align: center;">→</td> <td>the lungs</td> <td style="text-align: right;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>the heart</td> <td style="text-align: center;">→</td> <td>the body</td> <td style="text-align: right;"><input checked="" type="checkbox"/></td> </tr> </tbody> </table> | from   |  | to |  | the body | → | the heart | <input type="checkbox"/> | the lungs | → | the body | <input type="checkbox"/> | the heart | → | the lungs | <input checked="" type="checkbox"/> | the heart | → | the body | <input checked="" type="checkbox"/> | 1 mark for each |
| from         |          | to  |  |  |    |  |          |   |           |                          |           |   |          |                          |           |   |           |                                     |           |   |          |                                     |                 |
| the body     | →        | the heart   | <input type="checkbox"/>   |  |    |  |          |   |           |                          |           |   |          |                          |           |   |           |                                     |           |   |          |                                     |                 |
| the lungs    | →        | the body  | <input type="checkbox"/>   |  |    |  |          |   |           |                          |           |   |          |                          |           |   |           |                                     |           |   |          |                                     |                 |
| the heart    | →        | the lungs   | <input checked="" type="checkbox"/>  |  |    |  |          |   |           |                          |           |   |          |                          |           |   |           |                                     |           |   |          |                                     |                 |
| the heart    | →        | the body  | <input checked="" type="checkbox"/>  |  |    |  |          |   |           |                          |           |   |          |                          |           |   |           |                                     |           |   |          |                                     |                 |
| (b)          | 2        | oxygen<br>nutrients / food  | Either order<br>Allow O <sub>2</sub> for oxygen<br><b>Accept</b> hormones,<br>water,<br>enzymes,<br>sugar,<br>proteins,<br>glucose |  |    |  |          |   |           |                          |           |   |          |                          |           |   |           |                                     |           |   |          |                                     |                 |
| (c)          | 1        | carbon dioxide  | <b>Accept</b> CO <sub>2</sub>  |  |    |  |          |   |           |                          |           |   |          |                          |           |   |           |                                     |           |   |          |                                     |                 |
| <b>Total</b> | <b>5</b> |   |  |  |    |  |          |   |           |                          |           |   |          |                          |           |   |           |                                     |           |   |          |                                     |                 |

| Question     | 14       |  |   |
|--------------|----------|--|---|
| Part         | Mark     | Answer                                       | Further Information   |
| (a)          | 1        | good conductor of electricity                | <b>Do not accept</b> 'good conductor' unqualified   |
| (b)          | 2        | good conductor of heat<br>high melting point | <b>Do not accept</b> 'good conductor' unqualified<br><br>Each correct answer = 1 mark<br><br>3 reasons, and 2 correct = 1 mark<br><br>3 reasons, and 1 correct = 0 marks<br><br>4 reasons = 0 marks |
| <b>Total</b> | <b>3</b> |  |   |

| Question     | 15       |   |   |
|--------------|----------|---|---|
| Part         | Mark     | Answer  | Further Information   |
| (a)          | 1        | ruler / rule  |   |
| (b)          | 1        | conclusion measurement method <b>prediction</b>                     | More than 1 circled = 0 marks   |
| (c)          | 1        | clamp base to bench / wear goggles (or eye protection / spectacles) | <b>Accept</b> any suitable safety precaution relevant to this investigation |
| <b>Total</b> | <b>3</b> |   |   |