READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces at the top of this page.
Write in dark blue or black pen.

Answer all questions.

The number of marks is given in brackets [  ] at the end of each question or part question.
You should show all your working in the booklet.
The total number of marks for this paper is 50.
The diagram shows the Sun and Earth.

Tick (✓) the two correct sentences.

- The Sun takes 1 year to orbit the Earth.
- The Earth takes 1 year to orbit the Sun.
- The Earth takes 24 hours to orbit the Sun.
- The Earth spins on its axis once every 24 hours.
- The Earth spins on its axis once every year.

[2]
2  (a) Some things are living things. Others have never lived. Write down each word in the correct box in the table.

<table>
<thead>
<tr>
<th>kangaroo</th>
<th>rat</th>
<th>rock</th>
<th>sand</th>
<th>seaweed</th>
</tr>
</thead>
<tbody>
<tr>
<td>living things</td>
<td>things that have never lived</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.................................</td>
<td>.................................</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.................................</td>
<td>.................................</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.................................</td>
<td>.................................</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.................................</td>
<td>.................................</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.................................</td>
<td>.................................</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Which of the following observations would help to identify a living thing?

Tick (✓) the two correct answers.

- it grows
- it feels warm
- it can get smaller
- it makes young ones

[1]
Here are some substances that are solids, liquids or gases.

<table>
<thead>
<tr>
<th>butter</th>
<th>chocolate</th>
<th>ice</th>
<th>orange juice</th>
<th>steam</th>
<th>water</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>solid</th>
<th>liquid</th>
<th>gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>.................</td>
<td>................</td>
<td>....</td>
</tr>
<tr>
<td>.................</td>
<td>................</td>
<td>....</td>
</tr>
<tr>
<td>.................</td>
<td>................</td>
<td>....</td>
</tr>
<tr>
<td>.................</td>
<td>................</td>
<td>....</td>
</tr>
<tr>
<td>.................</td>
<td>................</td>
<td>....</td>
</tr>
<tr>
<td>.................</td>
<td>................</td>
<td>....</td>
</tr>
</tbody>
</table>

(a) Write down the substances in the correct column, solid, liquid or gas. [1]

(b) When ice is warmed, it changes.

Write down the name of this process.

.......................................................................................................................... [1]

(c) If water was cooled to 0°C it changes.

Write down the name of this process.

.......................................................................................................................... [1]

(d) What will happen to water if it boils?

.......................................................................................................................... [1]
4 (a) Draw a line to connect the term to the correct meaning.

<table>
<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>

(b) What is a consumer?

Circle the correct answer.

- a plant that eats another plant
- a plant that eats an animal
- an animal that eats a plant
- a plant that eats plants and animals

[2] [1]
Here is a diagram of a puppet show.

(a) Complete this sentence.

The puppet makes an image called a \underline{\hspace{2cm}} on the screen.  \[1\]

(b) What must the girl do to the puppet to make this image smaller?

\underline{\hspace{14cm}}  \[1\]

(c) What do the audience see?

Tick (✓) one box.

\[1\]

(d) What would the audience see if the screen were opaque?

\underline{\hspace{14cm}}  \[1\]
6 The table shows the boiling points of some liquids.

<table>
<thead>
<tr>
<th>liquid</th>
<th>boiling point in °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>105</td>
</tr>
<tr>
<td>B</td>
<td>78</td>
</tr>
<tr>
<td>C</td>
<td>100</td>
</tr>
<tr>
<td>D</td>
<td>96</td>
</tr>
<tr>
<td>E</td>
<td>1064</td>
</tr>
</tbody>
</table>

(a) Which liquid has the **lowest** boiling point? 

.................................................................................................................... [1]

(b) Which liquid is pure water? 

.................................................................................................................... [1]

(c) Complete the sentences about boiling and freezing.

During boiling liquid changes into a ..........................................................

During freezing liquid changes into a ......................................................... [2]
Suzy is growing sunflower seeds.

She thinks that seeds will grow better in a bigger pot

- she puts one seed into each of four different sized pots
- she puts them in the same warm place and waters them regularly
- after four days the seeds begin to grow
- she measures the height of the shoot every day.

What does Suzy do to make it a fair test?

Tick (✓) one box.

- measure the shoots
- put the pots in the same place
- measures each shoot on a different day
- uses four different pots [1]
Seeds are dispersed from plants so they have a better chance to grow.

Here are some diagrams of fruits containing seeds.

Use these examples to answer the questions.

(a) Which two fruits from A, B, C or D dry to release the seeds?

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

(b) Which fruit A, B, C or D is dispersed by the wind?

........................................................................................................... [1]

(c) This diagram shows another fruit.

Describe how this fruit is dispersed.

........................................................................................................... [2]
Maria is investigating what happens when indigestion tablets are added to water.

- she measures 100 cm\(^3\) of water and puts this into a beaker
- she adds a 1 g indigestion tablet to the water
- she measures the change in temperature of the water.

Draw a line from each measurement to the piece of equipment needed to make the measurement.

<table>
<thead>
<tr>
<th>measurement</th>
<th>equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>mass of tablet</td>
<td>ruler</td>
</tr>
<tr>
<td>temperature of the water</td>
<td>thermometer</td>
</tr>
<tr>
<td>volume of water</td>
<td>beaker</td>
</tr>
<tr>
<td></td>
<td>measuring cylinder</td>
</tr>
<tr>
<td></td>
<td>balance</td>
</tr>
</tbody>
</table>
10 Animals survive by living in food chains.

Look at the food web below.

(a) What is the main food source for toads?  

(b) Which three animals eat seed-eating birds?  

(c) Write down one of the food chains for mice.

© UCLES 2014 0846/02/SP/14
11. A music studio is next to a quiet room in a library.

Erik practises the glockenspiel in the studio.

(a) Erik strikes the glockenspiel with a hammer.

What causes the sound?

(b) Erik makes a high pitched sound on the glockenspiel?

What does Erik do to make the pitch higher?

(c) Sometimes the sounds are too loud in the library and Aravinder complains.

He collects data, using a decibel meter, and records the loudness of the sound in decibels (dB).

<table>
<thead>
<tr>
<th>time</th>
<th>10:00</th>
<th>11:00</th>
<th>12:00</th>
<th>13:00</th>
<th>14:00</th>
<th>15:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>decibel meter reading in dB</td>
<td>22</td>
<td>24</td>
<td>67</td>
<td>87</td>
<td>43</td>
<td>22</td>
</tr>
</tbody>
</table>

At what time is the sound from the studio the loudest?
(d) Describe what happens to the sound level between 10:00 and 15:00.

................................................................................................................................................................[1]

(e) Aravinder suggests the wall between the library and the studio is lined with foam.

Why is the foam useful?

.........................................................................................................................................................[1]

12 Nara puts 2g of chalk and 3g of sugar into 30cm$^3$ of water and stirs the mixture.

She then filters the mixture.

A white solid is left on the filter paper.

She dries this solid and measures the mass of the solid.

(a) What is the white solid left on the filter paper?

........................................................................................................................................................................[1]

(b) Write down the name of the liquid that passes through the filter paper.

........................................................................................................................................................................[1]

(c) What is the mass of the solid that is left on the filter paper after Nara dries it?

................................. g [1]
13 Blood is pumped to and from parts of the body.

(a) Which two of these are correct for blood flow from the pump?
Tick (√) two boxes.

- From the body to the heart
- From the lungs to the body
- From the heart to the lungs
- From the heart to the body

(b) Name two substances that the blood carries to be used by the cells in the body.

1 .......................................................... [2]
2 .......................................................... [2]

(c) Name one substance carried by the blood to the lungs so it can be removed from the body.

.......................................................... [1]
14 Some of the properties of copper are shown in the table.

<table>
<thead>
<tr>
<th>property</th>
</tr>
</thead>
<tbody>
<tr>
<td>good conductor of electricity</td>
</tr>
<tr>
<td>good conductor of heat</td>
</tr>
<tr>
<td>high boiling point</td>
</tr>
<tr>
<td>high melting point</td>
</tr>
<tr>
<td>hard</td>
</tr>
<tr>
<td>shiny</td>
</tr>
</tbody>
</table>

(a) Why is copper used to make electrical wires?

Choose from the table.

(b) Why is copper used to make cooking pots and pans?

Choose the best two reasons from the table.
Joshi is investigating how much a spring stretches when different masses are added.

(a) What could he use to measure how much the spring stretches?  


(b) Before his experiment Joshi thinks that the spring will stretch more if he adds more masses to the spring.  
What type of statement is this?  
Circle the correct answer.

conclusion  measurement  method  prediction  

(c) When doing his investigation what must Joshi do to keep himself safe?  
