Candidates answer on the Question Paper.

Additional Materials: Pen
Pencil
Ruler
Calculator

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.

DO NOT WRITE IN ANY BARCODES.

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.

For Examiner's Use

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Total

This document consists of 18 printed pages and 2 blank pages.
1 Each body system contains organs.

Here is a table.

It shows the body system and an organ found in the body system.

Complete the table.

Two have been done for you.

<table>
<thead>
<tr>
<th>system</th>
<th>organ</th>
</tr>
</thead>
<tbody>
<tr>
<td>circulatory</td>
<td></td>
</tr>
<tr>
<td>digestive</td>
<td>stomach</td>
</tr>
<tr>
<td>respiratory</td>
<td></td>
</tr>
<tr>
<td>nervous</td>
<td>brain</td>
</tr>
<tr>
<td>excretory</td>
<td></td>
</tr>
</tbody>
</table>
2 Electrical cables contain wires.

(a) Complete these sentences.

Part A needs to be a good ........................................ of electricity.

The best material to use is ........................................... [2]

(b) What material is used to make the parts labelled B?

.................................................................................. [1]
3 Different materials have different properties.

The table gives the properties of some materials.

<table>
<thead>
<tr>
<th>material</th>
<th>Is it hard or soft?</th>
<th>Is it shiny or dull?</th>
<th>Does it dissolve in water?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>hard</td>
<td>shiny</td>
<td>no</td>
</tr>
<tr>
<td>B</td>
<td>soft</td>
<td>dull</td>
<td>no</td>
</tr>
<tr>
<td>C</td>
<td>hard</td>
<td>shiny</td>
<td>no</td>
</tr>
<tr>
<td>D</td>
<td>hard</td>
<td>shiny</td>
<td>no</td>
</tr>
<tr>
<td>E</td>
<td>soft</td>
<td>dull</td>
<td>yes</td>
</tr>
<tr>
<td>F</td>
<td>soft</td>
<td>dull</td>
<td>no</td>
</tr>
</tbody>
</table>

(a) Which material dissolves in water?

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

(b) Scientists often sort materials using their properties.

Sort the materials A to F in the table into two groups.

Two materials have been done for you.

<table>
<thead>
<tr>
<th>first group</th>
<th>second group</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
</tr>
</tbody>
</table>

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

(c) Material A is attracted to a magnet.

Write down the name of a material that is attracted to a magnet.

........................................................................................................................................... [1]
There are hundreds of different species in the world.

This is why scientists need to be able to group them.

We do this by looking at their features.

Complete the table to show which features the following animals have.

Tick (✓) the correct box for each feature.

<table>
<thead>
<tr>
<th></th>
<th>scales</th>
<th>feathers</th>
<th>backbone</th>
<th>hairy skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>mammal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fish</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bird</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>reptile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5 Class 6 investigate electric circuits.

(a) Hania builds a complete circuit to turn one lamp on and off.

Draw the circuit diagram using these symbols.

```
\[ \text{cell} \quad \text{wire} \quad \text{switch} \quad \text{lamp} \]
```

(b) Hania adds another lamp to the circuit.

What happens to the brightness of the lamps?

Circle the correct answer.

- decreases
- increases
- stays the same
(c) Hania removes the switch from her circuit.

She replaces the switch with an object shown in the table.

Tick (✓) the box if the lamps work.

<table>
<thead>
<tr>
<th>object to replace switch</th>
<th>lamps work</th>
</tr>
</thead>
<tbody>
<tr>
<td>a piece of chalk</td>
<td></td>
</tr>
<tr>
<td>plastic pen</td>
<td></td>
</tr>
<tr>
<td>an iron nail</td>
<td></td>
</tr>
<tr>
<td>a coin</td>
<td></td>
</tr>
<tr>
<td>wooden ruler</td>
<td></td>
</tr>
</tbody>
</table>
6 (a) Nadine and Gita are discussing the movement of the Earth. They are discussing five ideas.

Tick (✓) the two correct statements.

- The Earth orbits the Sun every 24 hours. [ ]
- The Earth spins on its axis once every 24 hours. [ ]
- The Sun spins on its axis every 24 hours. [ ]
- The Earth orbits the Sun once every 365 days. [ ]
- The Sun orbits the Earth once every 365 days. [ ]

(b) The diagram shows the positions of the Sun and the Earth in December.

Where will the Earth be in June?

Draw a cross (X) on the diagram.
7 Here is a diagram of a flower.

(a) To make seeds, pollen and ova join together.

What is this process called? 

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

(b) Why is it important that seeds are dispersed away from the parent plant?

............................................................................................................................................. [1]
8 A torch has a covering on the end to make shapes on a screen.

(a) Why does the covering make a shadow on the screen?

(b) The torch is moved to make a smaller shape on the screen. Which letter shows the direction the torch is moved?

(c) What word is used to describe materials that do not let light through?
9 Animals and plants are found in different habitats.

(a) Draw a line from each picture to the habitat it is found in.

<table>
<thead>
<tr>
<th>picture</th>
<th>habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>frog</td>
<td>desert</td>
</tr>
<tr>
<td>cactus</td>
<td>sea</td>
</tr>
<tr>
<td></td>
<td>pond</td>
</tr>
<tr>
<td></td>
<td>volcano</td>
</tr>
</tbody>
</table>

(b) Frogs need oxygen from their habitat.

What two other things does the frog need from its habitat?

1. ____________________________
2. ____________________________
Roberto and Jill are exploring the effect of heat on melting ice. They warm the ice and measure the temperature every minute. Here are their results:

<table>
<thead>
<tr>
<th>time in minutes</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>temperature in °C</td>
<td>0</td>
<td>4</td>
<td>15</td>
<td>26</td>
<td>38</td>
<td>50</td>
<td>62</td>
<td>75</td>
<td>88</td>
<td>94</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

(a) Use the graph to find the temperature at 2 ½ minutes.

................................................................. °C

(b) At 11 minutes, what is the process happening in the container?

.................................................................
11 Units are useful when you measure things.

(a) Complete the table.

The first two have been done for you.

<table>
<thead>
<tr>
<th>quantity</th>
<th>unit</th>
<th>symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>distance</td>
<td>metre</td>
<td>m</td>
</tr>
<tr>
<td>time</td>
<td>second</td>
<td>s</td>
</tr>
<tr>
<td>force</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>weight</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Different equipment are used to measure things.

Which piece of equipment can be used to measure the volume of sound?

........................................................................................................... [1]
Janey and Danni plot their results on a graph.

(b) They find one result does not fit the pattern.

How can they make their results more reliable?

(c) Janey had said 'I think the heavier seeds roll further'.
Danni had said 'I think the lighter seeds roll further'.

Which girl, Janey or Danni, had made the correct prediction?

Explain your answer.
13 Sergio wants to purify some water.

The water contains some of the following:

- small sticks of wood
- sand
- salt

(a) First Sergio removes the small sticks of wood.

Which piece of equipment does he use?

Circle the correct answer.

conical flask evaporating dish magnet sieve

(b) Sergio then filters the water.

Complete the sentences about filtering.

Choose words from the list.

colourless insoluble soluble solution white

Sand is removed by filtering because sand is .......................... in water.

Salt passes through the filter paper because salt is .......................... in water.

Next Sergio heats salt solution to form steam.

The steam is then condensed.
(c) What is the name of the process that makes steam from salt solution?  
[1]  

(d) What happens to the steam during condensation?  
[1]  

14 Erik and Xavier investigate how high a rubber ball bounces on different surfaces. They drop a ball onto different surfaces.

(a) What equipment do they use to measure how high the ball bounces?  
[1]  

(b) Eric and Xavier drop the ball from the same height. What else did they do to make their investigation fair?  
[1]  

(c) Here are their results.

<table>
<thead>
<tr>
<th>surface</th>
<th>height ball bounces in cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>concrete</td>
<td>74</td>
</tr>
<tr>
<td>grass</td>
<td>60</td>
</tr>
<tr>
<td>mud</td>
<td>53</td>
</tr>
<tr>
<td>tarmac</td>
<td>64</td>
</tr>
</tbody>
</table>

Write down the surfaces in order of how high the ball bounces. Start with the highest first.

highest  
[1]  

lowest  
[1]
Hina and Amina investigate where different animals live on plants.

They look at the leaves on plants.

(a) Complete the food chain for this picture.

\[ \ldots \rightarrow \text{aphid} \rightarrow \ldots \]  \[1\]  

(b) Hina predicts there will be more aphids than ladybirds.

Why does she make this prediction?

\[ \ldots \]  \[1\]  

(c) Amina predicts there will be more aphids on the bottom of the leaves than the top of the leaves.

Why does she make this prediction?

\[ \ldots \]  \[1\]  

(d) Some time later Hina notices the leaves do not have ladybirds on them anymore.

Why do you think this has happened?

\[ \ldots \]  \[1\]