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
Total
1 The picture shows the inside of a dog. A dog has different organs.

(a) Draw a line to connect the letter to the position of the organ.

<table>
<thead>
<tr>
<th>letter</th>
<th>organ</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>lung</td>
</tr>
<tr>
<td>B</td>
<td>kidney</td>
</tr>
<tr>
<td>C</td>
<td>brain</td>
</tr>
<tr>
<td>D</td>
<td>tongue</td>
</tr>
</tbody>
</table>

Each organ in the dog has a job to do.

Here are some organs.

brain heart kidney lung stomach

(b) Which organ pumps blood around the circulatory system?

................................................................................................................................................

[1]

(c) Which organ produces acid and digests food?

................................................................................................................................................

[1]
2 (a) The Earth orbits the Sun.

How long does the Earth take to orbit the Sun?

Tick (✓) one box.

- 1 hour
- 1 day
- 1 week
- 1 month
- 1 year

[1]
Other planets also orbit the Sun.

(b) Name one planet that takes less time to orbit the Sun.

(c) Suggest why this planet takes less time to orbit the Sun.
3 On a very humid day the air contains lots of water vapour.

Here is a diagram showing how some of the water vapour gets into the air.

![Diagram of water vapour cycle]

- **Process A**: Boiling
- **Process B**: Condensation

Draw a line between the **process** and the **name** of the process.

**Process**

- A
- B

**Name**

- Boiling
- Condensation
- Evaporation
- Melting
4 (a) Humans care for the environment.

One way they do this is by **not** dropping litter.

Give **two** other ways humans can care for the environment.

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

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

(b) Humans should **not** drop litter.

Write down what humans should do with their litter.

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

5 Giannni has a tuning fork.

(a) When he hits the tuning fork, he hears a sound.
What is happening to the fork?

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

(b) He hits the fork and puts it in a cupboard.
What will happen to the sound **he** hears?

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

(c) Now he hits a larger tuning fork, with longer prongs.
What does he notice about the sound?

.................................................................................................................................................. [1]
6 Sea water contains salts dissolved in water.

(a) Complete the sentences about sea water.

Choose words from the list.

gas  higher  liquid  lower  solid

The freezing point of sea water is -7 °C.

The freezing point of pure water is ........................................... than the freezing point of sea water.

When sea water freezes it changes from a ...................................... to a ............................................

The boiling point of sea water is 106 °C.

The boiling point of pure water is ........................................... than the boiling point of sea water.

When sea water boils it changes from a ...................................... to a ............................................

(b) Feng leaves a dish of salt water in the hot sun.

He returns after five hours, to see that there is a white solid left in the dish.

What process has happened to the water during the five hours?

.................................................................
Maja and Ivan investigate seeds growing.

Here are the six different **types** of seed they use.

(a) Maja and Ivan give the seeds $8\text{cm}^3$ of water.

Circle the equipment they use.

- beaker  
- cup  
- measuring cylinder  
- test tube  

(b) Maja and Ivan want to make their investigation fair.

They give all the seeds the **same** amount of water.

Write one other fair test they can make when growing the seeds.
Here are their results.

(c) Maja and Ivan start to draw a bar chart.

Complete their bar chart.
(d) Maja and Ivan are not sure their results are correct.

What can they do to check this?

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

(e) Complete the sentence to write a conclusion for this investigation.

The seeds that started to grow the best were seed type ....................... [1]

(f) Circle the word that describes seeds starting to grow.

fertilisation germination pollination production [1]
8 Here is a diagram of a puppet show.

(a) Complete this sentence.
   The puppet makes an image called a ........................................... on the screen.  [1]

(b) What must the girl do to the puppet to make this image smaller?
   ........................................................................................................ [1]

(c) What do the audience see?
   Tick (✓) one box.

   [ ]
   [ ]  [1]

(d) What would the audience see if the screen were opaque?
   ........................................................................................................ [1]
Here are some seeds in a pod.

(b) What is the dispersal method for these seeds?

Tick (✓) one answer.

- animal dispersal
- rain dispersal
- explosive dispersal
- vegetable dispersal

(c) Complete the sentence to show how this method works.

After the seed pod dries out, the pod ........................................... open.
Lee is given a mixture to separate.

The mixture contains:

- iron filings
- salt
- sand
- small lumps of rock

(a) He removes the small lumps of rock by sieving.

Why does he use a sieve? [1]

(b) Next he uses a magnet.

Which substance is attracted to the magnet? [1]

(c) Lee uses three more stages to complete the separation.

**Stage A** – Evaporation

**Stage B** – Filtration

**Stage C** – Mix and stir with water

Put these stages in the correct order.

First stage .......... Second stage .......... Third stage .......... [1]
(d) Here is a diagram of the filtration stage.

Complete the diagram by writing in the missing names of equipment.

```
residue

---

beaker

filtrate
```

[2]
11 The picture shows an aeroplane flying.

(a) Draw a line to connect each letter to the correct force.

<table>
<thead>
<tr>
<th>letter</th>
<th>force</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>air resistance</td>
</tr>
<tr>
<td>B</td>
<td>moving aeroplane upwards</td>
</tr>
<tr>
<td>C</td>
<td>moving aeroplane forwards</td>
</tr>
<tr>
<td>D</td>
<td>gravity</td>
</tr>
</tbody>
</table>

(b) The force moving the aeroplane forward is increased more than the air resistance.

What happens to the aeroplane?

Tick (✓) one box.

- moves up in the air
- moves down in the air
- speeds up
- slows down
- stops moving

(c) Write down one way air resistance can be reduced.

.........................................................................................................................

[1]
12 Jessica and Tom investigate sound from a CD player.

- The volume control on the CD player goes from 0 to 6. Jessica sets the volume control on 1.

- Tom walks away from the CD player until he can no longer hear the music. He measures how far he is from the CD player.

- Jessica and Tom repeat the test and increase the volume each time.

Here are their results.

<table>
<thead>
<tr>
<th>volume control of CD player</th>
<th>distance sound heard in m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>6</td>
<td>20</td>
</tr>
</tbody>
</table>

(a) Write down the factor they are changing.

.......................................................................................................................... [1]
Jessica and Tom plotted their results.

(b) Which of their results does not fit the pattern?

(c) This was their conclusion. Fill in the missing word.

The higher the volume of the CD player, the __________ the distance it can be heard.
Cheetan investigates what happens when solids are added to water.

He wants to find out if the solids dissolve in water.

In one experiment he adds 1.0 g of solid to 10 cm³ of water in a boiling tube.

(a) What piece of apparatus does he use to measure out the solid?

(b) Cheetan uses 10 cm³ of water.

What piece of apparatus does he use to measure out the water?

(c) He then stirs the mixture for one minute.

Why is it important that he stirs the mixture before recording his results?
(d) Cheetan repeats the experiment four more times.

Each time he uses a different solid.

Here are his results.

<table>
<thead>
<tr>
<th>solid</th>
<th>baking powder</th>
<th>chalk</th>
<th>copper sulfate</th>
<th>salt</th>
<th>sugar</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>observation</strong></td>
<td>colourless solution</td>
<td>white mixture</td>
<td>blue solution</td>
<td>colourless solution</td>
<td>colourless solution</td>
</tr>
</tbody>
</table>

Which solid did **not** dissolve in water?

________________________________________________________________________________________________________________________ [1]