1. Jonathan went in a restaurant for a meal. He ordered bacon, eggs and a fizzy drink.

   a) From the picture above, name ONE food that is:
      i) rich in fibre ................................................................. (1 mark)
      ii) rich in proteins .......................................................... (1 mark)

   b) Why is fibre needed in our diet? .................................................................
      ............................................................................................................(1 mark)

   At the restaurant Jonathan met his friend Joanne. She told Jonathan she wants to reduce
weight and stop smoking.

   c) Why should Joanne avoid eating bacon, eggs and fizzy drinks?
      ............................................................................................................. (1 mark)

   d) Underline ONE chemical in cigarette smoke that is harmful to Joanne. (1 mark)
e) Which organ in our body is harmed by cigarette smoke?
______________________________________________________________ (1 mark)

f) Jonathan and Joanne had to run fast to catch the bus. What happened to their pulse rate after the run?
______________________________________________________________ (1 mark)

2. Philip had influenza. He played in the school ground with Clayton and Chloe. After some days, Clayton also had influenza but Chloe did not.

a) What type of microbe causes influenza?
______________________________________________________________ (1 mark)

b) Why is it important that Philip washes his hands after sneezing?
______________________________________________________________ (1 mark)

c) Complete the sentence:
Chloe did not catch the influenza as Clayton did because ________________________
______________________________________________________________ (2 marks)

d) Use some words in the box to fill in the spaces:

<table>
<thead>
<tr>
<th>microscope</th>
<th>virus</th>
<th>yeast</th>
<th>bacteria</th>
<th>microbe</th>
</tr>
</thead>
</table>

i) This is another word for micro-organism: ________________________ (1 mark)

ii) We use this to make wine and bread: ________________________ (1 mark)

iii) Sore throat and Tuberculosis (TB) are caused by: ________________________ (1 mark)
3. The object shown below shows a gold mask from a tomb in Egypt. The gold is still shiny after thousands of years.

![Gold Mask](image)

a) Tick (✓) the box which describes gold: (1 mark)

- Compound
- Mixture
- Element
- Solution

b) The list below shows some of the properties of gold:

1. It conducts electricity
2. It stays shiny
3. It conducts heat
4. It is yellow
5. It is easily scratched
6. It melts at 1064°C.

i) Choose any TWO of these properties which show that gold is a metal?

________________________________________________

________________________________________________

(2 marks)

ii) Underline a non-metal from the list below:

-aluminium  carbon  silver  magnesium (1 mark)

c) Iron objects thrown away in a field were found covered with rust. Iron reacts with oxygen when it rusts. Underline the correct word in each sentence below:

i) For iron to rust, it needs oxygen and (nitrogen, carbon dioxide, water).

ii) Rusting is a (physical, chemical, reversible) reaction.

(2 marks)

d) The chemical name for rust is iron oxide. Tick (✓) the correct box. Iron oxide is a:

- Element
- Compound
- Mixture

(1 mark)

e) Give ONE reason for your answer in (d).

____________________________________________________________________

(2 marks)
f) A box contains a collection of metal objects. What piece of apparatus would you use to separate iron objects from the other metal objects?

__________________________________________________________________________ (1 mark)

4. Matthew fell from his bike and spilled the bag of salt he was carrying. He collected the salt off the ground together with stones and sand, and put the mixture in a paper bag.

a) Fill in the spaces in the table below to complete Matthew’s plan to separate the salt from the mixture.

(4 marks)

<table>
<thead>
<tr>
<th>Step</th>
<th>Description of the step</th>
<th>Reason for carrying out the step</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>To collect the large stones.</td>
</tr>
<tr>
<td>2</td>
<td>Add water</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>To remove the sand.</td>
</tr>
<tr>
<td>4</td>
<td>Heat the water</td>
<td></td>
</tr>
</tbody>
</table>

b) Matthew used this apparatus for step 3.

i) Which letter in the diagram shows the residue? ________

ii) Name the apparatus labelled D: ____________________

(2 marks)
c) At home Matthew’s mum painted the window frame. Some of the paint got on the glass. Mum could not get the paint off using water, but when she used white spirit the paint came off.

i) Underline the correct word:

White spirit was a suitable (solute, solvent, solution) for the paint. (1 mark)

ii) Why was Matthew’s mum unable to remove the paint with water?

_______________________________________________________________ (1 mark)

5. Fossil fuels are used to generate electricity.

a) The following statements show how a power station works. Put them in the correct order. The first one has been done for you.

Water changes into steam.  
The turbine generates electricity.  
Fossil fuels are burnt.  
Steam turns the turbine.

b) When a fuel burns, a chemical reaction takes place. Complete the word equation to show this reaction.

Fuel + ____________________ ➔ Carbon dioxide + ____________________ + Energy

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c) A science student used this apparatus to test for the presence of carbon dioxide while burning a candle.

![Diagram of apparatus](image)

i) Name chemical A used in this experiment. _______________________ (1 mark)

ii) What happens to chemical A when carbon dioxide is produced?

_________________________________________________________ (1 mark)

d) The sugar cane is a plant. The sugar from the cane is used to make alcohol. Alcohol is a fuel.

i) Which energy source do plants use to produce sugar?

_________________________________________________________ (1 mark)

ii) Tick (✓) the correct box. Sugar cane is a:

- Renewable source of energy [ ]
- Non-renewable source of energy [ ] (1 mark)

e) Some scientists suggested using alcohol in the power station instead of fossil fuels. Name ONE advantage and ONE disadvantage for this suggestion.

Advantage: ____________________________________________________ (1 mark)

Disadvantage: __________________________________________________ (1 mark)
f) The Local Council put this poster on the village notice board. Explain the message of this poster.  

_______________________________________________  
_______________________________________________  
_______________________________________________  

(1 mark)

g) This poster produced by WWF (World Wildlife Fund) is aimed to increase awareness on deforestation. Name ONE problem caused by deforestation.

____________________________________________________________  

(1 mark)

6. Francis found a lady lying on the ground in the park. The police found a knife with red sticky stains 10 m away from the lady. The lady had a bite with purple lipstick stains on her arm. When forensic scientists arrived, they enclosed the crime scene, wore gloves, photographed the scene and collected evidence in new plastic bags.

a) Name TWO types of evidence, forensic scientists can collect from this crime scene.  

________________________  
________________________  

(2 marks)
b) Why is wearing gloves important for forensic scientists?

__________________________________________________________________________

(1 mark)

c) Why did forensic scientists take photos of the crime scene?

__________________________________________________________________________

(1 mark)

d) The forensic scientists used chromatography to find out information about the lipstick on the lady’s arm. Study the chromatograms below. Circle the type of purple lipstick that matches the one found on the lady’s arm.

(1 mark)

![Chromatograms](image)

```
Purple Lipstick on Victim’s arm
Purple Lipstick A
Purple Lipstick B
Purple Lipstick C
```

e) The bite mark on the lady’s arm showed a missing incisor. The diagram shows a full set of human teeth.

i) On the diagram, label an incisor. (1 mark)

ii) Name ONE function of the tooth labelled X.

__________________________________________________________________________

(1 mark)

iii) On the bite mark, the canine teeth look deeper than the others. Explain why.

__________________________________________________________________________

(1 mark)
7. The diagram below shows a food web.

- Blackbird
- Ladybird
- Worm
- Hedgehog
- Greenfly
- Snail
- Sunflower
- Blackbird

a) Write a food chain including the worm.

___________________________________________________

(1 mark)

b) What would happen to the population of snails, if all the worms died?

___________________________________________________

Give a reason for your answer.

___________________________________________________

(2 marks)

c) Name ONE habitat where this food web can be found

___________________________________________________

(1 mark)

d) From the food web above, write a food chain containing 4 living things.

blackbird

(1 mark)

e) The farmer sprayed a chemical and killed many ladybirds. What happened to the population of blackbirds?

___________________________________________________

(1 mark)

f) The diagram shows the pyramid of numbers for this food chain. Shade the area on the diagram that represents the population of blackbirds.

(1 mark)
8. The table below shows information about four planets.

<table>
<thead>
<tr>
<th>Planet</th>
<th>Time taken to orbit the Sun (Earth years)</th>
<th>Distance from the Sun (million km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury</td>
<td>0.25</td>
<td>60</td>
</tr>
<tr>
<td>Venus</td>
<td>0.5</td>
<td>108</td>
</tr>
<tr>
<td>Earth</td>
<td>1.0</td>
<td>150</td>
</tr>
<tr>
<td>Mars</td>
<td>2.0</td>
<td>228</td>
</tr>
</tbody>
</table>

a) Underline the statements that are TRUE for these planets:

i) They are made of rocks.

ii) They are the inner planets.

iii) They have water on them.

iv) They are smaller than Jupiter. (3 marks)

b) Match the facts in Column A with the planets in Column B. (4 marks)

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is the hottest planet</td>
<td>Mars</td>
</tr>
<tr>
<td>Living things are found here</td>
<td>Mercury</td>
</tr>
<tr>
<td>This is called the red planet</td>
<td>Earth</td>
</tr>
<tr>
<td>The planet nearest to the Sun</td>
<td>Venus</td>
</tr>
</tbody>
</table>

c) It takes one year for the Earth to orbit the Sun but Mars takes two years. Explain why.

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

(1 mark)
9. The diagram below shows the positions of the Sun, Moon and Earth during an eclipse.

![Diagram showing Sun, Moon and Earth during an eclipse]

a) Fill the boxes in the diagram with the words: Earth, Sun and Moon. (3 marks)

b) Underline the correct word: The diagram shows a (solar, lunar) eclipse. (1 mark)

c) Did the temperature at point A increase or decrease during this eclipse?

__________________________________________________________ (1 mark)

Give a reason for your answer.

__________________________________________________________ (1 mark)

d) Kim drew a picture of herself holding a ball on a string while standing at position A on Earth.

i) Draw an arrow to show the direction of the force of gravity on Kim at position A.

ii) Draw the ball and string at position B. (2 marks)

iii) Kim’s mass on Earth is 55kg.

What is her weight on Earth?

__________________________________________________________ (1 mark)
10. This question is about the human eye.

a) Name the parts A: ____________ B: ____________ (2 marks)

b) Write down the functions of these parts of the eye:
   i) Iris: _____________________________________________________________________ (2 marks)
   ii) Lens: ____________________________________________________________________ (2 marks)

Dora is deaf. She blows up a balloon and holds it near Darren’s mouth. She cannot hear Darren’s voice but she can tell that he is speaking by feeling the balloon.

c) How can Dora tell that Darren is speaking by feeling the balloon?
   __________________________________________________________________________ (1 mark)

d) Sound can be measured in units called decibels. The table below shows the loudness of some sounds.

<table>
<thead>
<tr>
<th>Sound</th>
<th>Loudness in Decibels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whispering</td>
<td>20</td>
</tr>
<tr>
<td>Talking</td>
<td>60</td>
</tr>
<tr>
<td>Disco music</td>
<td>110</td>
</tr>
<tr>
<td>Rocket taking off</td>
<td>190</td>
</tr>
</tbody>
</table>

If Dora’s balloon bursts, estimate the loudness in decibels of the bursting balloon.

_________________________________________________________________________ (1 mark)

e) Very loud sounds can damage a person’s ears. What damage to the ear can be caused by loud sounds?

_________________________________________________________________________ (2 marks)