Biodiversity and Efffect of humans on Ecosystem

Q:1 Human activities affect the environment.

(a) List A gives four human activities.

List B gives the effect of the activities on the environment.

Draw one line from each human activity in List A to its effect on the environment in List B.

List A Human activity	List B Effect on the environment
	Adds methane to the atmosphere
Digging a new quarry	
	Pollutes hedges around fields
Spraying pesticides on crops	
	Reduces the land available for wild animals
Growing rice	
	Produces lots of litter
Driving cars that release sulfur dioxide	
	Produces acid rain

(4 marks)

(b) Human activities are increasing global warming.

Give two effects of global warming on the environment.

1 .....

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2 .....

..... **(2 marks)**

Q:2 The human population is increasing and more household waste is being produced.

(a) Give one way in which an increase in household waste affects our environment.

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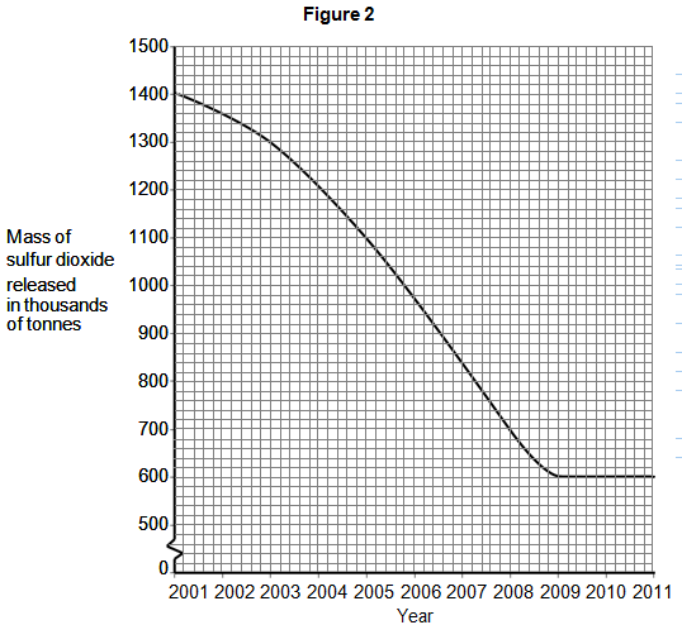
[1 mark]

(b) The release of sulfur dioxide affects our environment.

Figure 2 shows how the mass of sulfur dioxide released in the UK has changed from 2001 to 2011.

Figure 2



(b) (i) Describe the pattern shown in Figure 2.

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[2 marks]

(b) (ii) In 2001, 1400 thousand tonnes of sulfur dioxide were released.

By which year had the amount of sulfur dioxide released reduced to half of this amount?

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Year = ...

[2 marks]

(b) (iii) Give one problem caused when sulfur dioxide gas is in the air.

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[1 mark]

(c) Carbon dioxide is another gas that affects the environment.

Which two of the following help to reduce the levels of carbon dioxide in the atmosphere by storing carbon dioxide?

Tick (☒) two boxes.

Animals respiring ☐

Carbon dioxide being absorbed in oceans and lakes ☐

Photosynthesis by trees ☐

The production of biogas ☐

[2 marks]

Q:3 In many areas of the world the mass of household waste produced each year is increasing.

(a) Give two reasons why the mass of household waste is increasing each year.

1 .....

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2 .....

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[2 marks]

(b) Table 1 shows how the mass of household waste in the UK has changed from 2004 to 2012.

Table 1

Year	Total mass of household waste in thousands of tonnes (including total household recycling)	Total mass of household recycling in thousands of tonnes	Percentage of household waste recycled
2004	25 658	5785	22.5
2006	25 775	7976	30.9
2008	24 334	9398	38.6
2010	23 454	9733	
2012	22 643	9782	43.2

(b) (i) Calculate the percentage of household waste recycled in 2010.

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..... %

[2 marks]

(b) (ii) The UK government has been encouraging a 'zero waste economy'.

In a 'zero waste economy', we reduce, reuse and recycle as much waste as possible.

A newspaper concluded that: 'The government's 'zero waste economy' has been successful.'

Use information from Table 1 to describe the reasons for and against the newspaper's conclusion.

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[4 marks]

(c) (i) Some waste releases carbon dioxide and methane into the atmosphere.

An increase in carbon dioxide and methane contributes to global warming.

Global warming can cause sea levels to rise.

Describe two other possible effects of global warming on our environment.

1 .....

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2 .....

.....

[2 marks]

(c) (ii) Storing the carbon dioxide helps to prevent more global warming.

Carbon dioxide can be stored (sequestered) in trees when they photosynthesise.

Give one different way in which carbon dioxide is sequestered in our environment.

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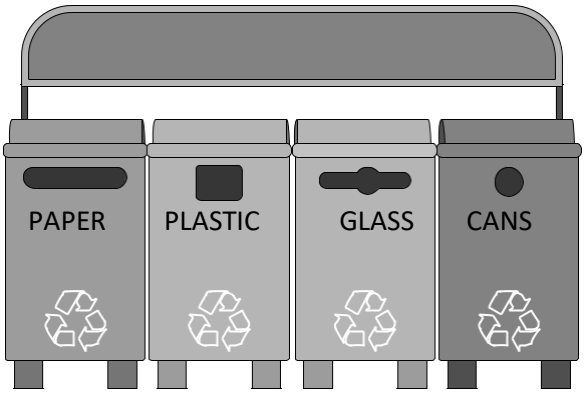
[1 mark]

Q:3 There are many ways in which we can help to protect the environment. The drawing shows recycling bins.



(a) **(i)** Give one way in which recycling paper helps to protect the environment.

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(1 mark)

(ii) Give one way in which recycling cans helps to protect the environment.

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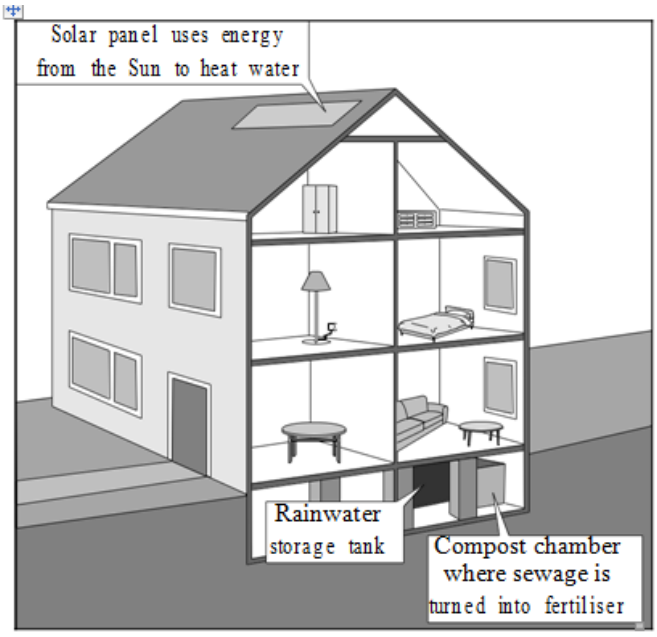
(1 mark)

(b) The drawing shows an 'ecohouse'. This house has been designed to help to protect the environment.



How do the following features of the 'ecohouse' help to protect the environment?

(i) The solar panel

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(1 mark)

(ii) The rainwater storage tank

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(1 mark)

(iii) The compost chamber

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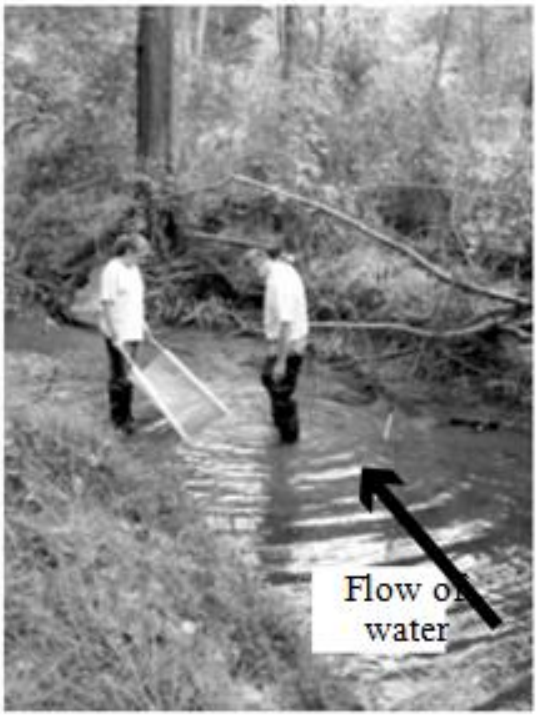
(1 mark)

Q:4 Invertebrate animals are used to monitor pollution in streams. The photograph shows scientists collecting a sample of invertebrates from a stream.



This is the method that they use.

- A 1 m2 area of the bed of the stream is marked out.
- A net 1 m wide is held by one person on the downstream side of the marked-out area.
- The other person uses their boots to gently move stones in this area of the stream bed. They do thisfor three minutes. This dislodges invertebrates which are then caught in the net.
- The invertebrates are then identified and counted.

(a) Name two control variables (variables which must be kept the same) in this investigation.

1 .....

2 .....

(2 marks)

(b) Suggest two reasons why the results from a sample might not be accurate.

1 .....

.....

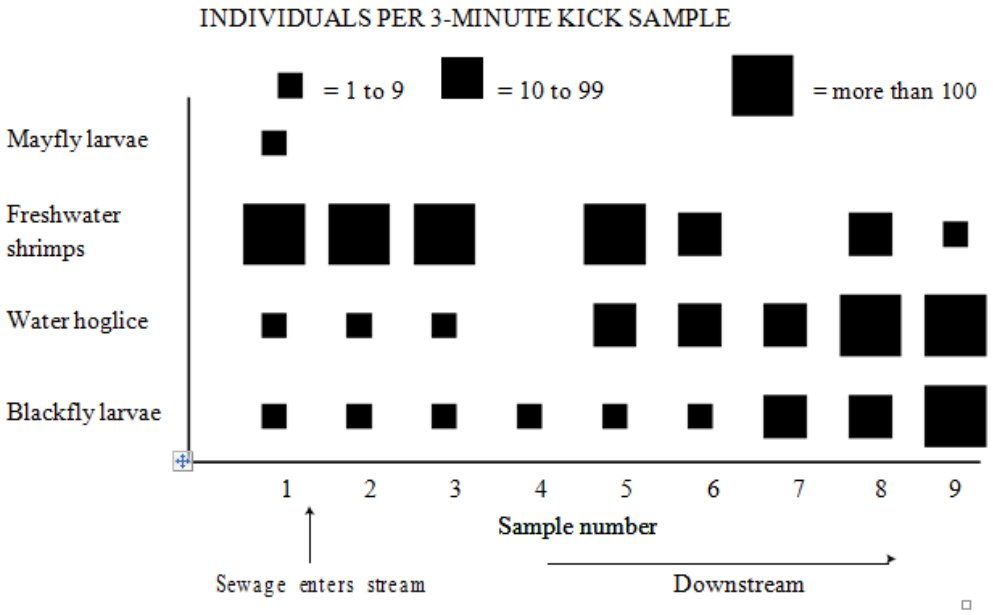
2 .....

.....

(2 marks)

The technique described on the previous page was used to investigate the effect of sewage on stream invertebrates.

- Sample 1 was taken upstream of the point where the sewage entered the stream.
- Samples 2–9 were taken at regular intervals downstream of the sewage inflow. The graph shows the results.



(c) What was the range of the number of blackfly larvae that could be found in sample 7?

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(1 mark)

(d) Describe, as fully as you can, how the number of water hoglice changed downstream from where sewage entered the stream.

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(2 marks)

(e) Which of the four invertebrates is the best indicator species for water which is not polluted by sewage?

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Give the reason for your answer.

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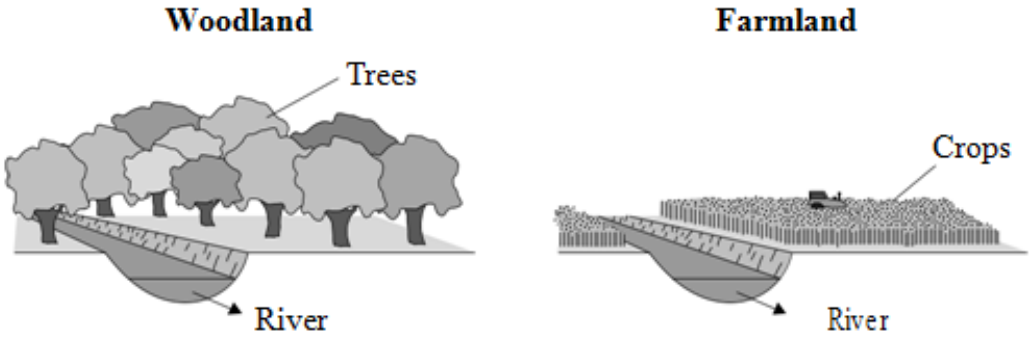
(2 marks)

Q:5 The drawings show some woodland and some farmland. Both have a river flowing through.



(a)(i) There is a wider variety of wildlife in the woodland than in the farmland.

Give one reason why.

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(Extra space) .....

(1 mark)

(a)(ii) Farmers remove woodland to provide space for growing crops.

Give two other reasons why humans remove woodland.

Do not include the uses of wood in your answers.

1 .....

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2 .....

.....

(2 marks)

(b) Many farmers spray chemicals on their fields.

Draw a ring around the correct word to complete each sentence.

(b)(i) To make crops grow larger, farmers use

fertilisers
herbicides
pesticides

.

(1 mark)

(b)(ii) To kill insects that feed on the crop, farmers use

fertilisers
herbicides
pesticides

.

(1 mark)

(b)(iii) There is a wider variety of wildlife in the river flowing through the

woodland than in the river flowing through the farmland.

Give one reason why.

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.....

(1 mark)

(c) The population of the UK has increased over the last two hundred years. This increase in population has resulted in damage to the environment.

Apart from farming methods, give two ways in which humans damage the environment.

1.....

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2.....

.....

(2 marks)

Q:6 The photographs show some ways in which humans affect the environment.

(a) Coal-burning power stations give off smoke. The smoke contains many different gases.

Draw a ring around the correct answer to complete each sentence.

(a) (i) The gas which causes global warming is

carbon dioxide.
oxygen.
sulfur dioxide.

(1 mark)

(**a) (ii)** The gas which causes acid rain is

methane.
oxygen.
sulfur dioxide.

(1 mark)

(b) The photograph shows a quarry.

Draw a ring around the correct answer to complete each sentence.

(b) (i) Quarrying

releases methane into the atmosphere.
increases biodiversity.
reduces land available for animals and plants.

(1 mark)

(b) (ii) Quarrying can be reduced by recycling

metals.
paper.
plastic

(1 mark)

(c) The photograph shows a farmer spraying fruit trees.

Chemicals in the spray kill insects on the trees.

Draw a ring around the correct answer to complete each sentence.

(c) (i) The spray contains

fertiliser.
herbicide.
pesticide.

(1 mark)

(c) (ii) The chemical in the spray might also

kill other animals.
kill plants.
increase biodiversity.

(1 mark)