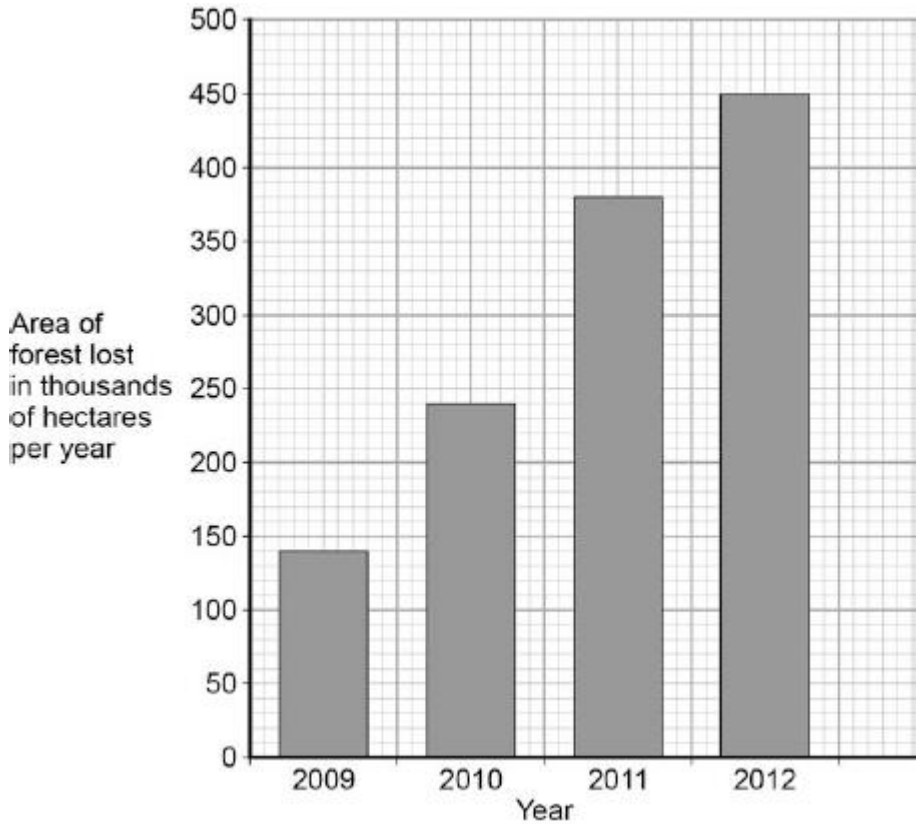
Q1. The graph below shows the area of forest lost in Madagascar from 2009 to 2012.



(a) The area of forest lost each year in Madagascar increased between 2009 and 2012.

Determine the total area of forest lost from the start of 2009 to the end of 2012.

.....

.....

Total area of forest lost = ... thousand hectares

(1)

(b) What are the possible reasons for the change in the area of forest lost per year between 2009 and 2012?

Tick **two** boxes.

The local people stop growing rice ☐

Fewer new houses are needed for the population ☐

The local people decided to farm cattle ☐

More trees have been planted ☐

A company starts growing plants for biofuels ☐

(2)

(c) More forest was lost in 2012 than in 2009.

Use words from the box to complete the sentences.

carbon dioxide	**excretion**	**nitrogen**
oxygen	**photosynthesis**	**respiration**

The increase in the area of forest lost has caused an increase in the gas .....

The increase of this gas has been caused because less of the gas is being absorbed by plants for the process of ..... .

(2)

(d) Deforestation can have negative effects on our ecosystems.

What are the negative effects of deforestation?

Tick **two** boxes.

Animals and birds migrate because there is less food ☐

More habitats are destroyed ☐

There is less acid rain ☐

There is more biodiversity ☐

The global temperature decreases ☐

(2)

(e) Scientists try to reduce the negative effects of human activity on our ecosystems.

One way is to protect rare habitats.

Give **one other** way of reducing the negative effects of human activity on our ecosystems.

.....

.....

(1)
(Total 8 marks)

Q2. The photograph shows an area where a tropical forest is being cleared.



(a) Complete the sentences.

People could use timber from the forest for
..... .

The cleared land can be used for
..... .

Clearing forests increases the concentration of
..... in the atmosphere.

This increase causes global ..... .

(4)

(b) Clearing forests causes some species to become *extinct*.

(i) What is meant by *extinct*?

.....

.....

(1)

(ii) It is important to prevent species from becoming extinct.

Give **one** reason why.

.....

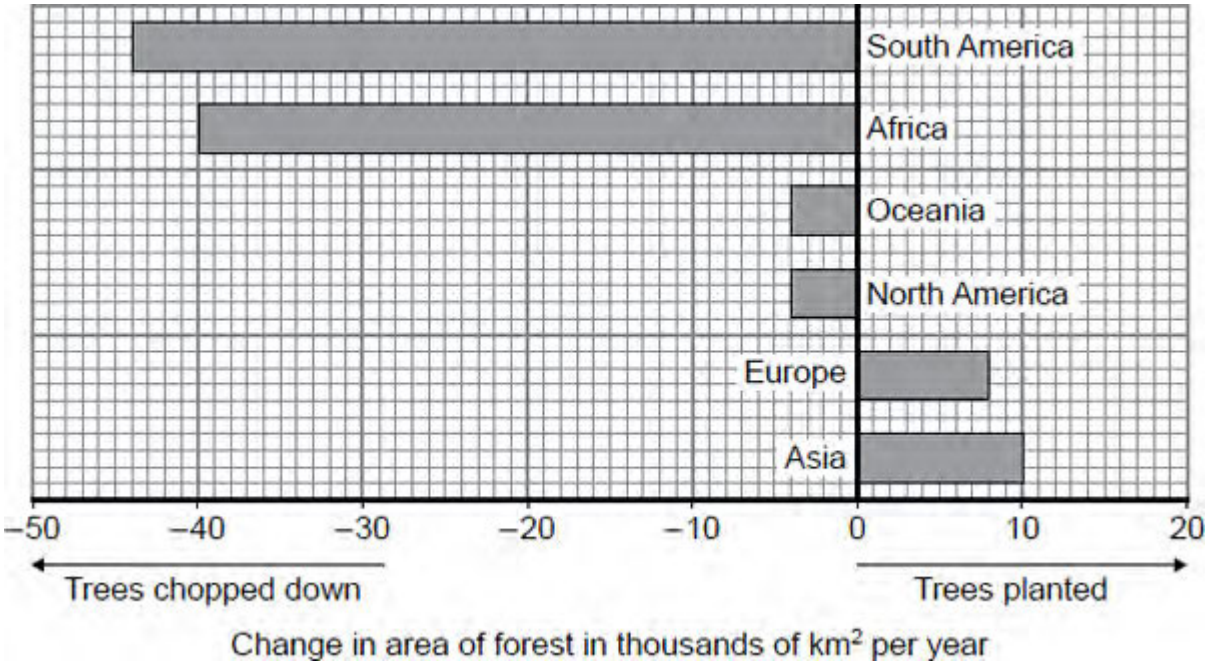
.....

(1)

(Total 6 marks)

Q3. In many parts of the world, forests are being chopped down (deforestation) so that the land can be used to grow food crops. In other parts, trees are planted to produce new forests.

The graph shows how the area of forest in each of the continents is changing each year.



(a) (i) What area of forest is being lost in Africa each year?

Area = ... thousand km²

(1)

(ii) Use **Steps 1**, **2** and **3** to calculate the total change to the area of forest each year.

Step 1 Calculate the total area of trees chopped down.

.....

Total area chopped down = ... thousand km²

Step 2 Calculate the total area of trees planted.

.....

Total area planted = ... thousand km²

Step 3 Use your answers from **Steps 1** and **2** to calculate the total change in the area of forest.

.....

Total change in area of forest ..... thousand km^2

(3)

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

(i) Large scale deforestation reduces the number of species of

- plants only.
- animals only.
- both animals and plants.

(1)

(ii) The remains of the trees are broken down into carbon dioxide by

- lichens.
- microorganisms.
- plants.

(1)

(iii) The gas released into the atmosphere when trees are burned is

- carbon dioxide.
- methane.
- oxygen.

(1)
(Total 7 marks)

Q4. Soay sheep live wild on an island off the north coast of Scotland. No people live on the island.



By Owen Jones = Jonesor [CC-BY-SA-2.5], via Wikimedia Commons

Over the last 25 years, the average height and mass of the wild Soay sheep have decreased.

The scientists think that climate change might have affected the size of the sheep.

(a) More Soay sheep are now able to survive winter than 25 years ago.

What change in the climate may have helped more Soay sheep to survive winters?

.....

.....

(1)

(b) Complete the sentences.

(i) Soay sheep show variation in size because of differences in their

.....

(1)

(ii) The change in the size of the Soay sheep over 25 years can be explained by Darwin's

theory of .....

(1)

(Total 3 marks)

Q5. 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.



By Norbert Kaiser (English: own work.) [CC-BY-SA-3.0], via W kimedia Commons

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

(i) The gas which causes global warming is

carbon dioxide.

oxygen.

sulfur dioxide.

(1)

(ii) The gas which causes acid rain is

methane.

oxygen.

sulfur dioxide.

(1)

(b) The photograph shows a quarry.



By Thomas Bjørkan (Own work) [CC-BY-SA-3.0], via W kimedia Commons

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

(i) Quarrying

releases methane into the atmosphere.

ncreases biodiversity.

reduces land available for animals and plants.

(1)

(ii) Quarrying can be reduced by recycling

metals.

paper.

plastic

(1)

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



Photograph supplied by Hemera/Thinkstock

Chemicals in the spray kill insects on the trees.

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

(i) The spray contains

fertiliser.

herbicide.

pesticide.

(1)

(ii) The chemical in the spray might also

kill other animals.

kill plants.

ncrease biodiversity.

(1)

(Total 6 marks)

Q6. 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.

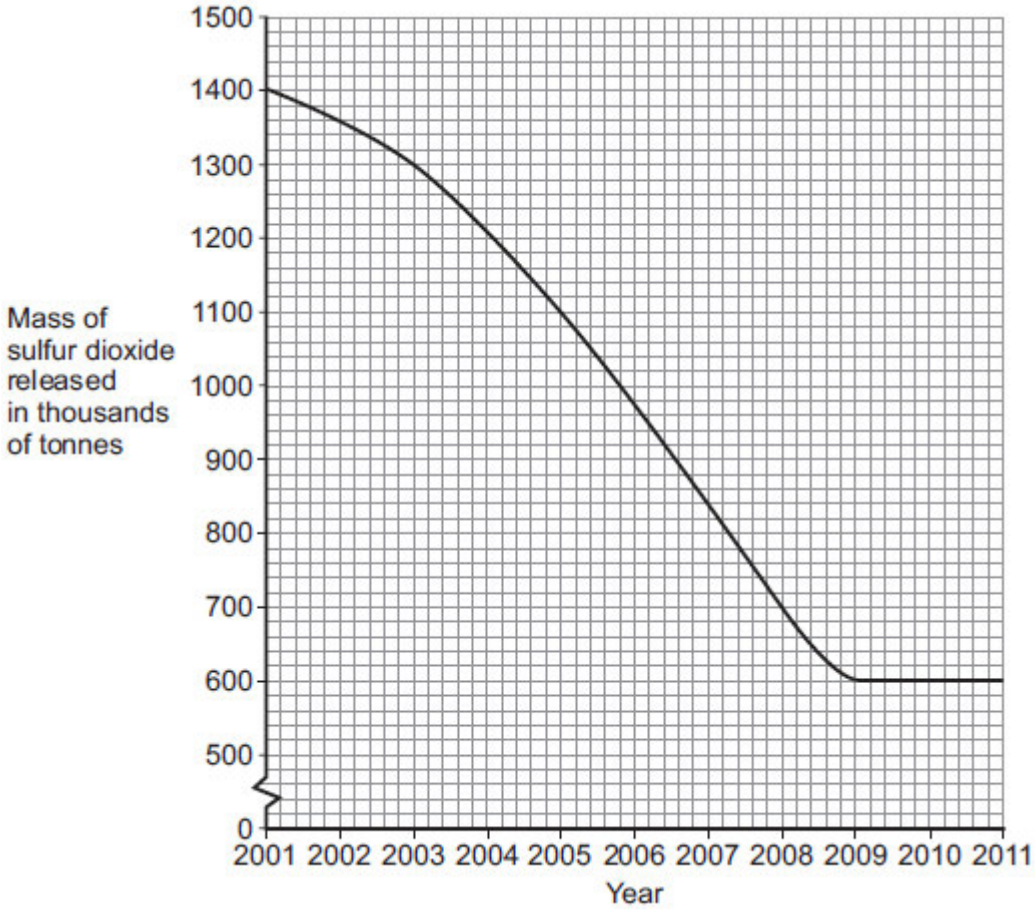
.....

.....

(1)

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

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



(i) Describe the pattern shown in the graph.

.....

.....

.....

.....

(2)

(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?

.....

.....

.....

Year = ...

(2)

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

.....

.....

(1)

(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?

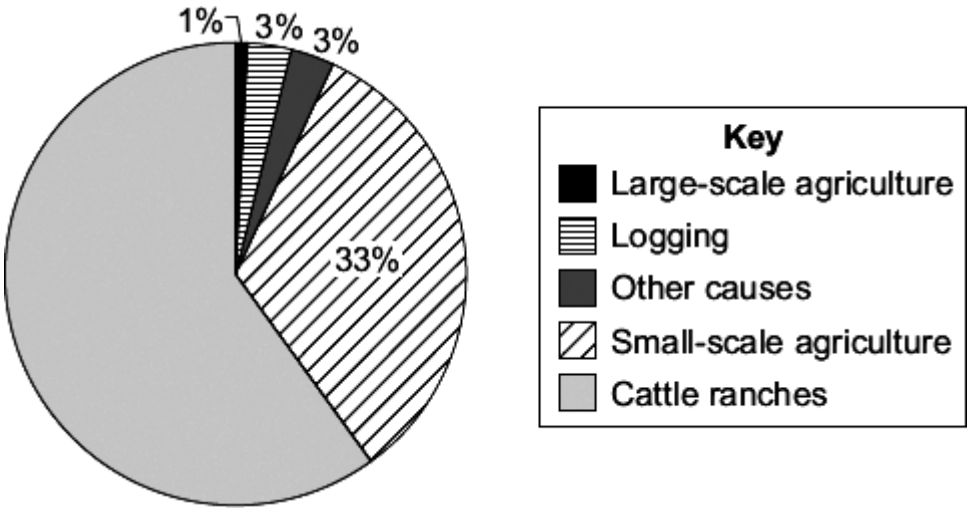
Tick (✓) **two** boxes.

Animals respiring	☐
Carbon dioxide being absorbed in oceans and lakes	☐
Photosynthesis by trees	☐
The production of biogas	☐

(2)
(Total 8 marks)

Q7. Large-scale deforestation is taking place in Brazil.

The pie chart shows the causes of deforestation in Brazil.



(a) Calculate the percentage of forest that has been destroyed for cattle ranches.

Show clearly how you work out your answer.

.....

.....

Percentage = ...

(2)

(b) Cattle give off large amounts of methane into the atmosphere.

The methane causes the Earth's temperature to increase.

Give **two** effects of the temperature increase on the environment.

1 .....

.....

2 .....

.....

(2)
(Total 4 marks)

Q8. 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)

(b) Human activities are increasing *global warming* .

Give **two** effects of *global warming* on the environment.

1.....

.....

2.....

.....

(2)
(Total 6 marks)

Q9. Scientists have produced many different types of GM (genetically modified) food crops.

(a) Use words from the box to complete the sentence about genetic engineering.

clones	chromosomes	embryos	genes

GM crops are produced by cutting ..... out of the

..... of one plant and inserting them into the cells of a crop plant.

(2)

(b) Read the information about GM food crops.

- Herbicide-resistant GM crops produce higher yields.
- Scientists are uncertain about how eating GM food affects our health.
- Insect-resistant GM crops reduce the total use of pesticides.
- GM crops might breed naturally with wild plants.
- Seeds for a GM crop can only be bought from one manufacturer.
- The numbers of bees will fall in areas where GM crops are grown.

Use this information to answer these questions.

(i) Give **two** reasons why some farmers are in favour of growing GM crops.

1 .....

.....

2 .....

.....

(2)

(ii) Give **two** reasons why many people are against the growing of GM crops.

1 .....

.....

2 .....

.....

(2)
(Total 6 marks)