UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

3075807527

ENVIRONMENTAL MANAGEMENT **0680/11**

Paper 1 **October/November 2011**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Ruler

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

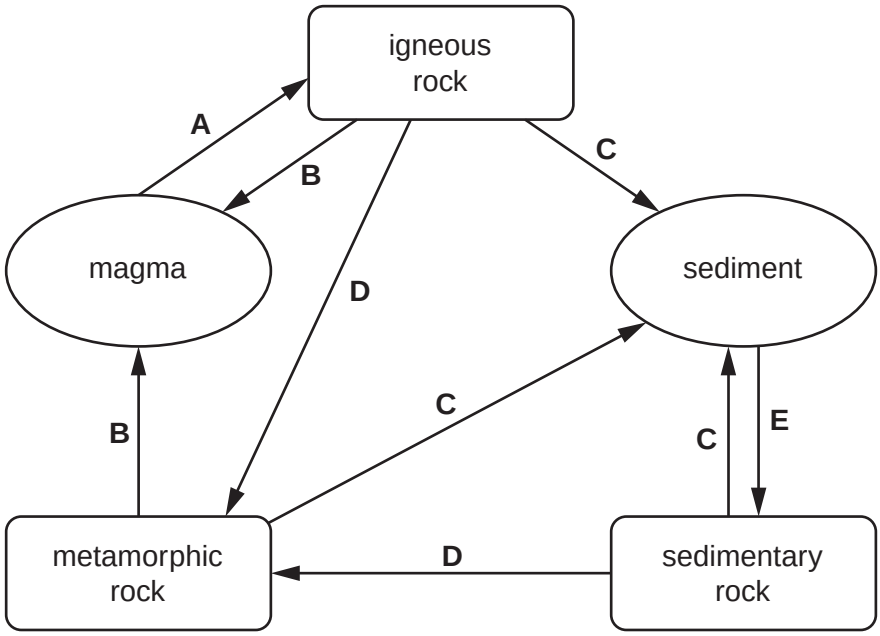
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Total	

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1 Study the diagram below showing the processes (**A**, **B**, **C**, **D** and **E**) of rock formation.

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(a) Match the letters in the diagram to the processes below.

cooling ……..

melting ……..

heat and pressure ……..

weathering and erosion ……..

compaction and cementation …….. [3]

(b) (i) Rocks can be used as building stone. Explain why buildings are usually made out of stone found locally.

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.....[2]

(ii) Name a sedimentary rock and give an industrial use, other than for building, of this rock.

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.....[2]

(iii) Open-cast mining leaves a large hole in the ground. When the mining stops the hole is filled in with overburden. Describe what would be done next to restore the environment.

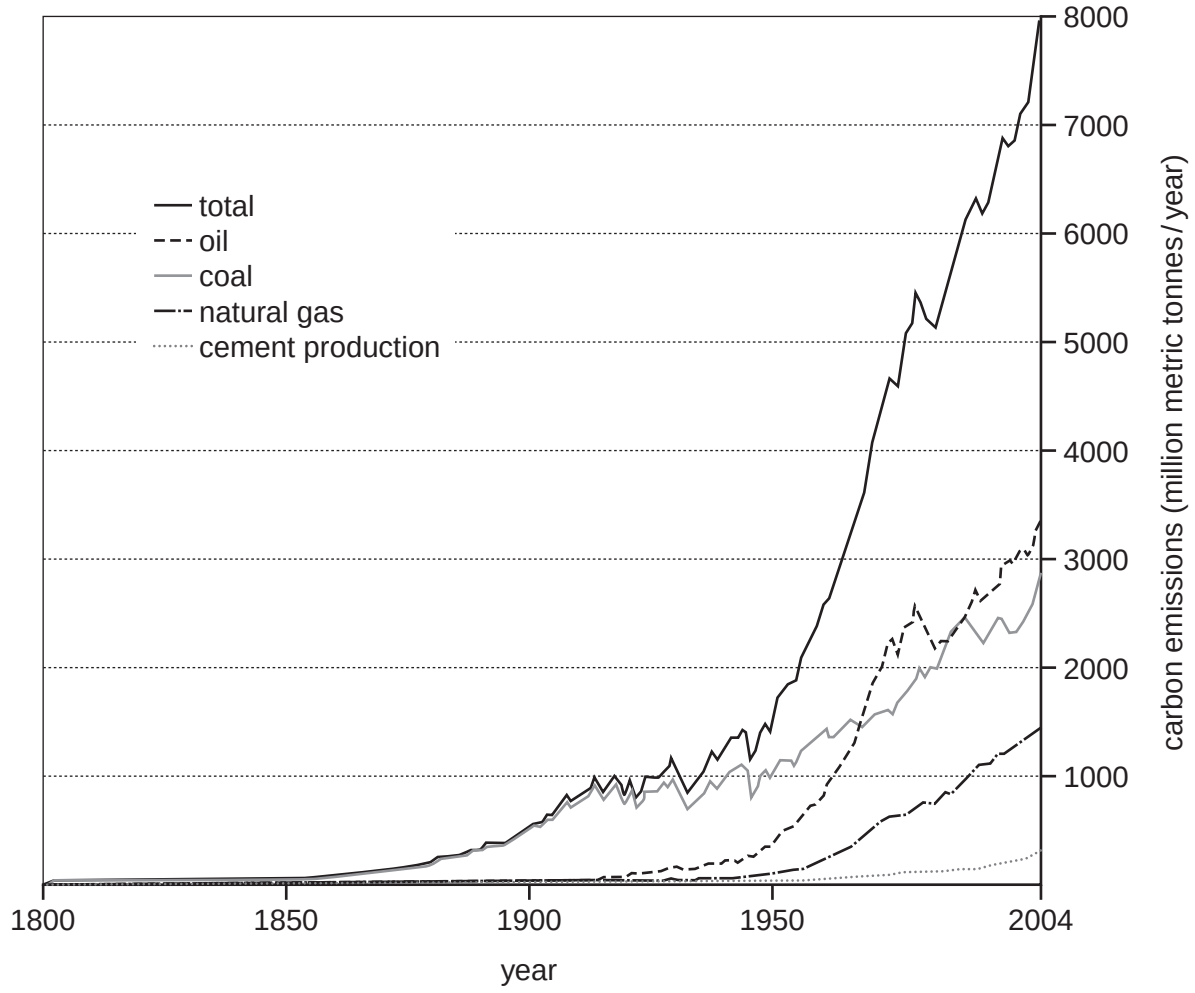
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2 The graph below shows the total global carbon emissions from non-living sources between 1800 and 2004.

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(a) (i) Cement is produced from rocks made of calcium carbonate. What was the total carbon emission in 2004 from cement production?

.....[1]

(ii) When did carbon emissions from natural gas begin?

.....[1]

(iii) Why did pollution from natural gas begin after that from coal and oil?

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.....[2]

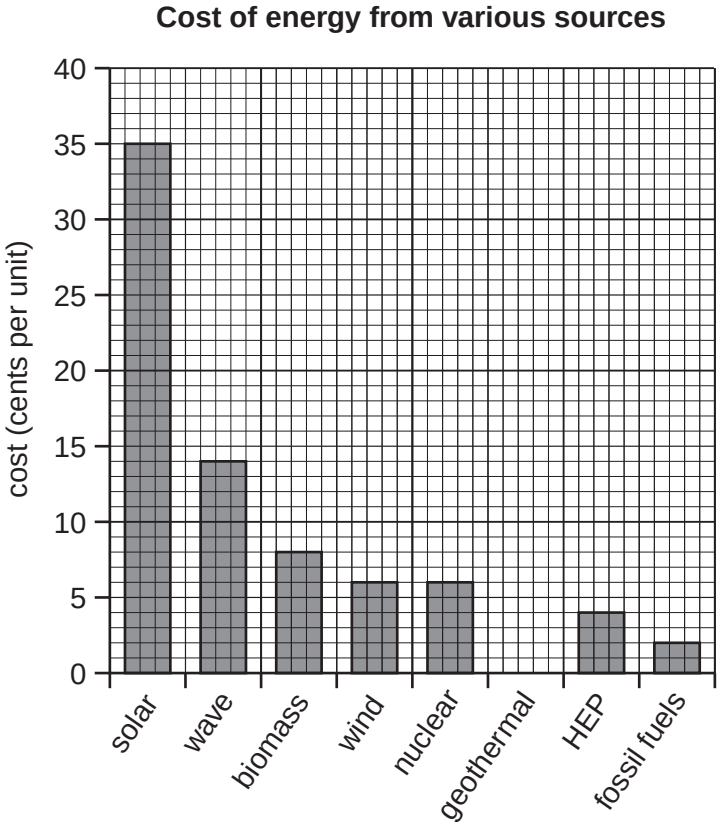
(iv) Which of the sources of carbon emissions is not a fossil fuel?

.....[1]

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(b) Carbon, in the form of carbon dioxide in the atmosphere, is a pollutant. For this reason alternatives to fossil fuels are sometimes used. The graph below shows the cost of various alternatives to fossil fuels.

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(i) Geothermal energy costs 5 cents per unit. Complete the graph for geothermal energy. [1]

(ii) Which of the alternatives to fossil fuels on the graph produces carbon dioxide?

.....[1]

(iii) Using the graph and your own knowledge state and explain the advantages and disadvantages of solar and geothermal energy as alternatives to fossil fuels in the future.

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.....[3]

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3 As well as being the source of important gases for humans, the atmosphere is also a dispersal medium for waste gases, smoke particles and exhaust fumes.

(a) (i) Name **one** atmospheric gas used by humans and a different one used by plants.

humans .....

plants ..... [1]

(ii) Some gases are greenhouse gases.

Describe how they cause the greenhouse effect.

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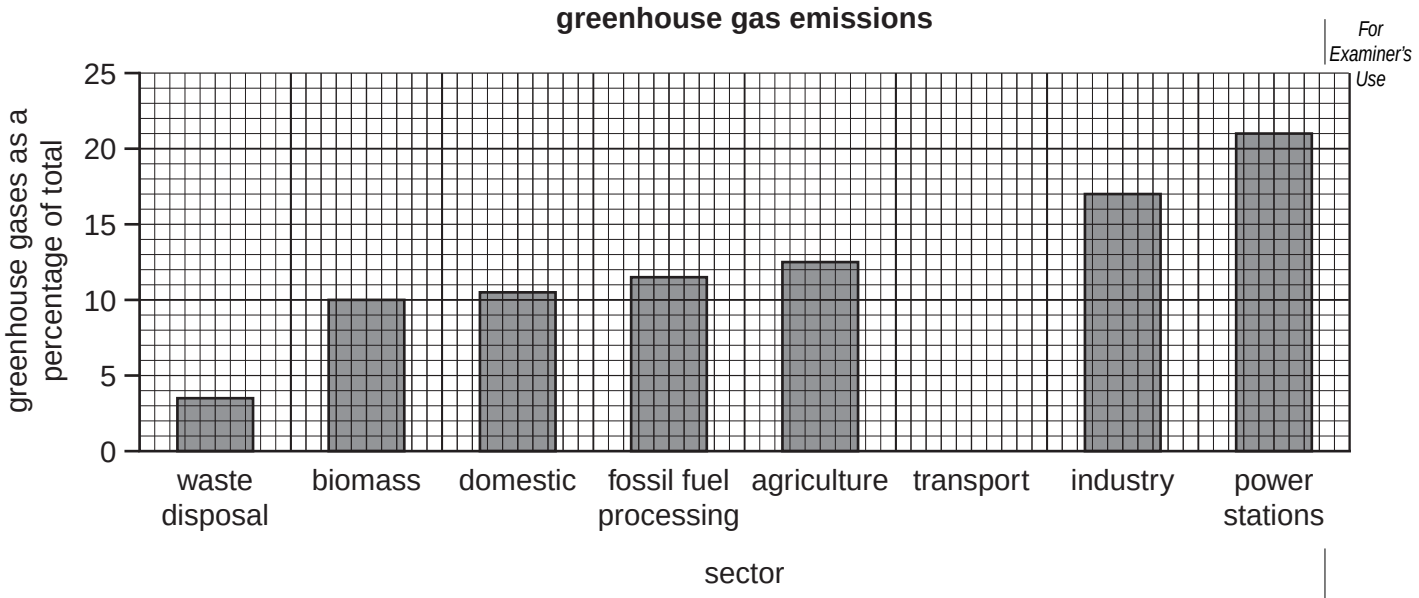
.....[2]

(iii) The following table shows the percentage of greenhouse gases emitted by the various sectors of human activity. Complete the table for transport and add the figure to the bar chart.

sector	**greenhouse gas emissions (% total)**
waste disposal	3.5
biomass	10
domestic	10.4
fossil fuel processing	11.6
agriculture	12.5
transport	
industry	17
power stations	21

[2]

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(b) (i) Many people believe that greenhouse gas emissions from human activity need to be reduced. Look at the photograph below.



The photograph shows **one** way of reducing greenhouse gas emissions. Explain why this method reduces emissions.

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.....[3]

(ii) Suggest other ways in which greenhouse gas emissions caused by humans could be reduced.

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..... [2]

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4 **(a)** In some parts of the world water is in very short supply. In other parts of the world floods occur.

(i) State **two** ways in which plants growing in naturally hot deserts are adapted to the desert climate.

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.....[2]

(ii) If people want to grow crops in hot deserts they must irrigate them. Describe **one** method of irrigation.

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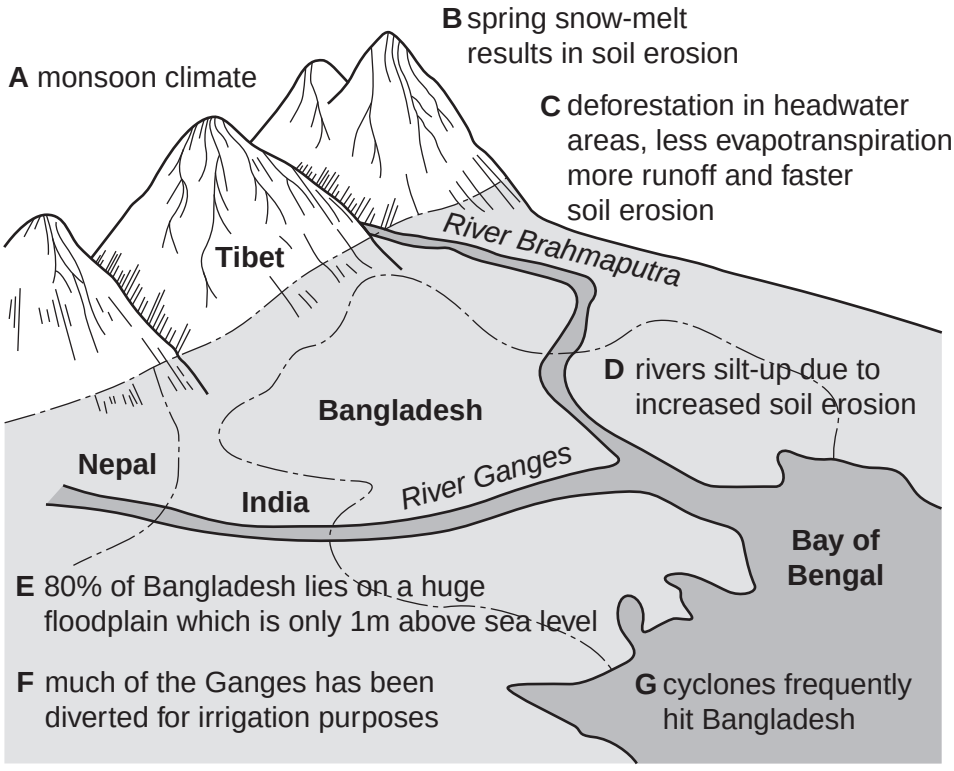
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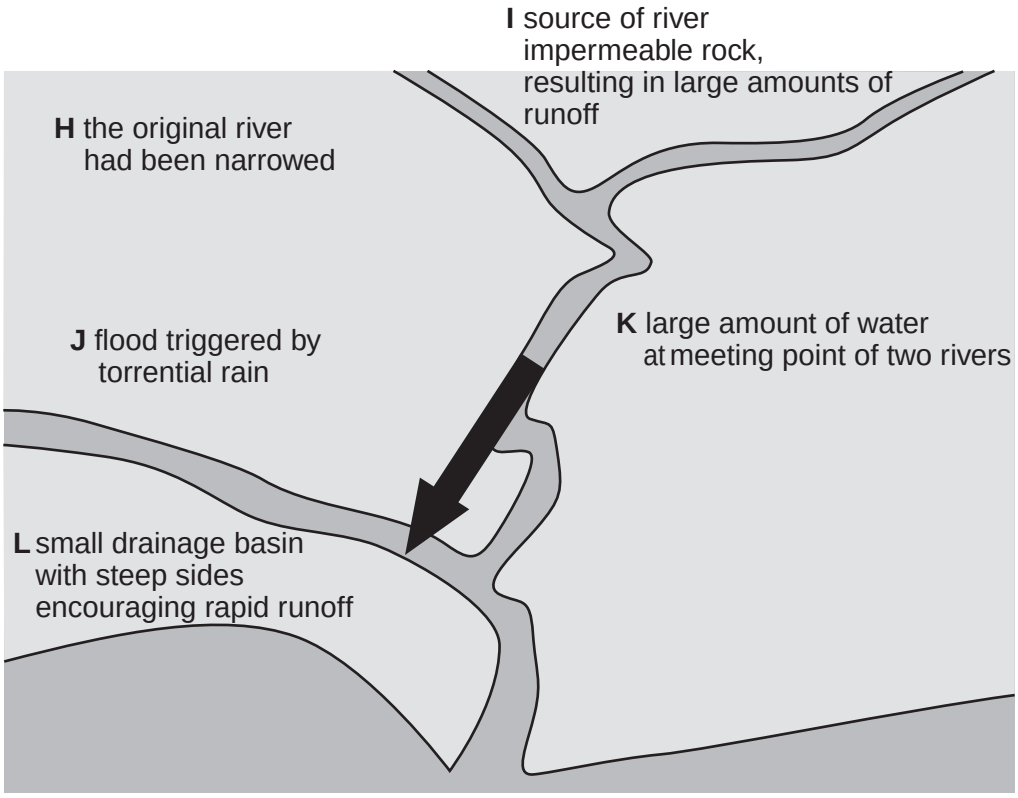
(b) Floods can be caused by natural factors and by human action. Look at the two diagrams below showing the causes of flooding in Bangladesh and in a small town in the UK.

Flooding in Bangladesh



Flooding in the UK

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(i) Using all the letters **A** to **L** from the diagrams once only, complete the table below.

caused by natural factors	caused by human action

[4]

(ii) After a flood has occurred, how can its effects be reduced?

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.....[2]

5 Water is vital for all life but even where it is plentiful it may be the source of diseases such as bilharzia, typhoid, malaria and cholera. There are three types of water-related disease.

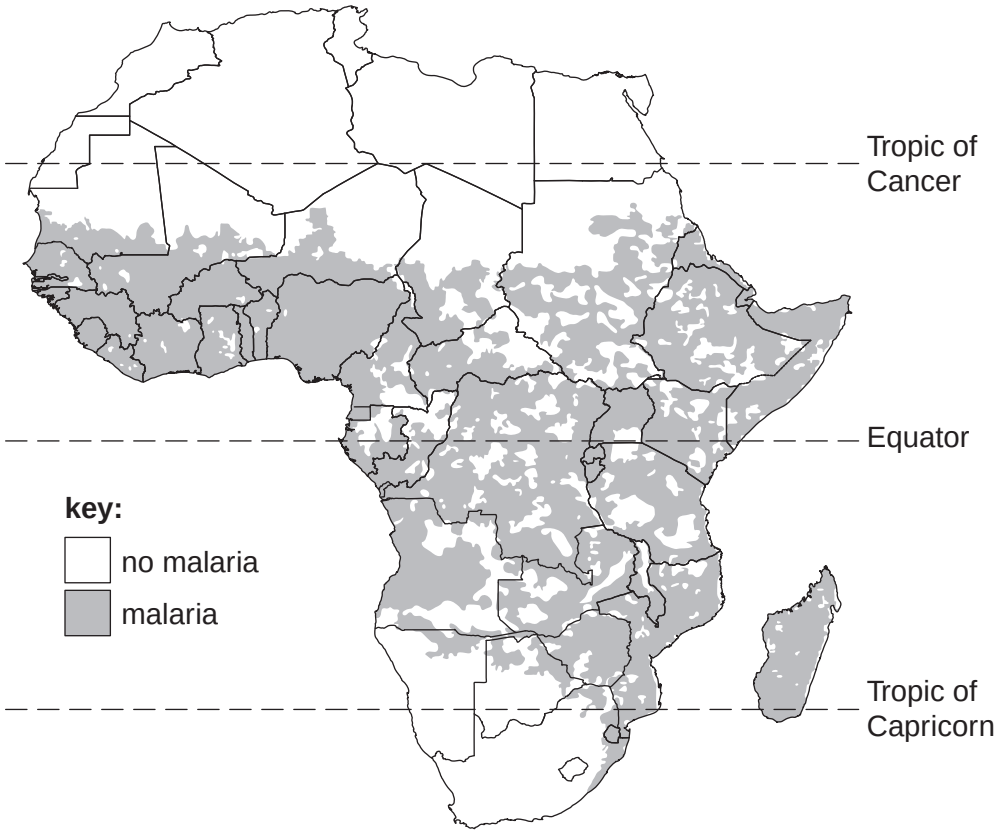
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(a) (i) Complete the table writing bilharzia, typhoid, malaria and cholera in the correct places.

water related disease type	disease(s)
water-bred	
water-borne	
water-based	

[2]

(ii) The disease which affects most people is malaria. The map of Africa shows the areas where malaria is a problem.



Describe the distribution of malaria in Africa.

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.....[2]

(iii) Five ways of dealing with water related diseases are:

drugs vector eradication improved sanitation clean water supply chlorination

State which **two** of these would be best for controlling malaria.

.....

.....[1]

(iv) Choose **one** of these ways and explain how it helps to control malaria.

.....

.....

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.....[2]

(b) In the Southern USA many wetlands have been drained for disease control.

Describe how wildlife is affected by the drainage of wetlands.

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.....[3]

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6 As well as the carbon dioxide and oxygen in the atmosphere, plants need water and minerals from the soil. Fertile soil is important for good crop growth.

(a) (i) Which **two** of the substances named above are needed for photosynthesis?

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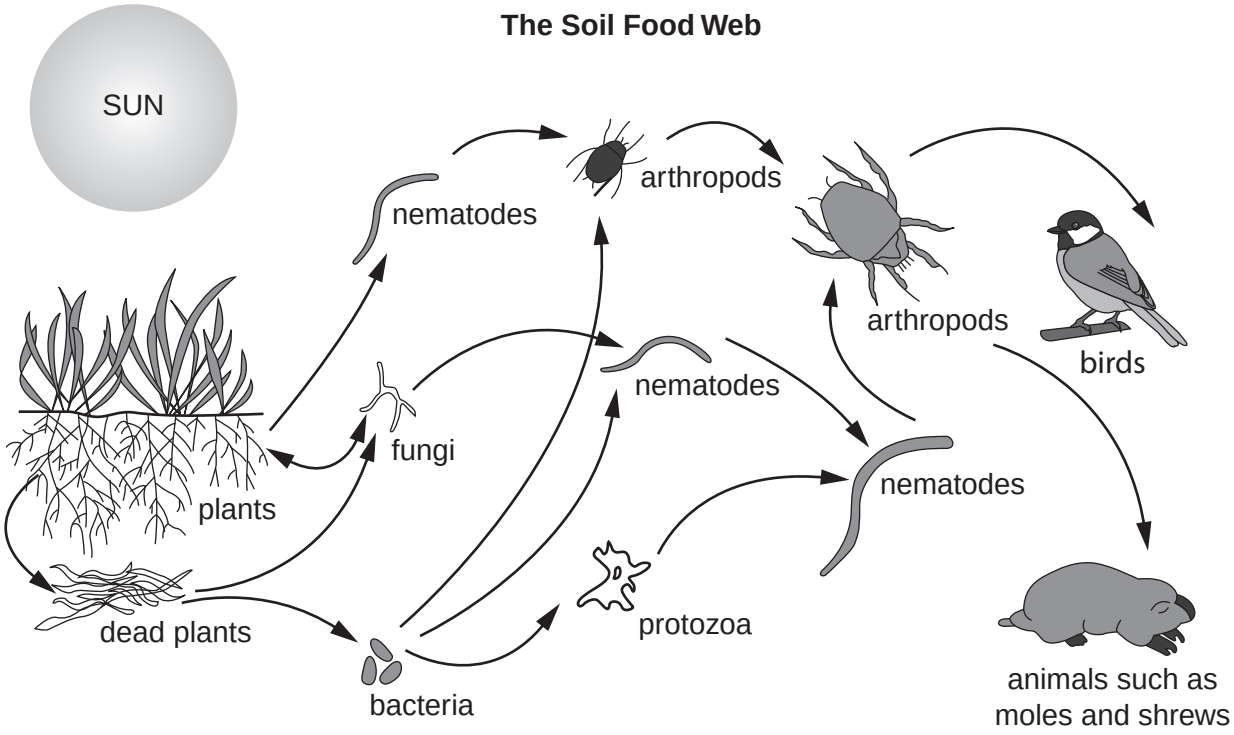
..... [2]

(ii) Soils poor in water and minerals are unsuitable for good crop growth.

State **one other** way in which a soil might be unsuitable for good growth.

..... [1]

(b) A food web which includes living organisms in the soil is shown below.



(i) From the diagram name:

a producer .....

a herbivore .....

a carnivore .....

a predator .....

[2]

(ii) Use the food web opposite to draw a food chain with five links shown by arrows.

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[2]

(c) In agriculture and forestry, soils are sometimes badly damaged. Some ways of conserving soil are terracing, contour ploughing and wind breaks.

Choose **one** of these and describe what it is and how it helps to conserve the soil.

method .....

description .....

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.....[3]

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