UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

2711781152 9

ENVIRONMENTAL MANAGEMENT **0680/13**

Paper 1 **October/November 2010**

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.

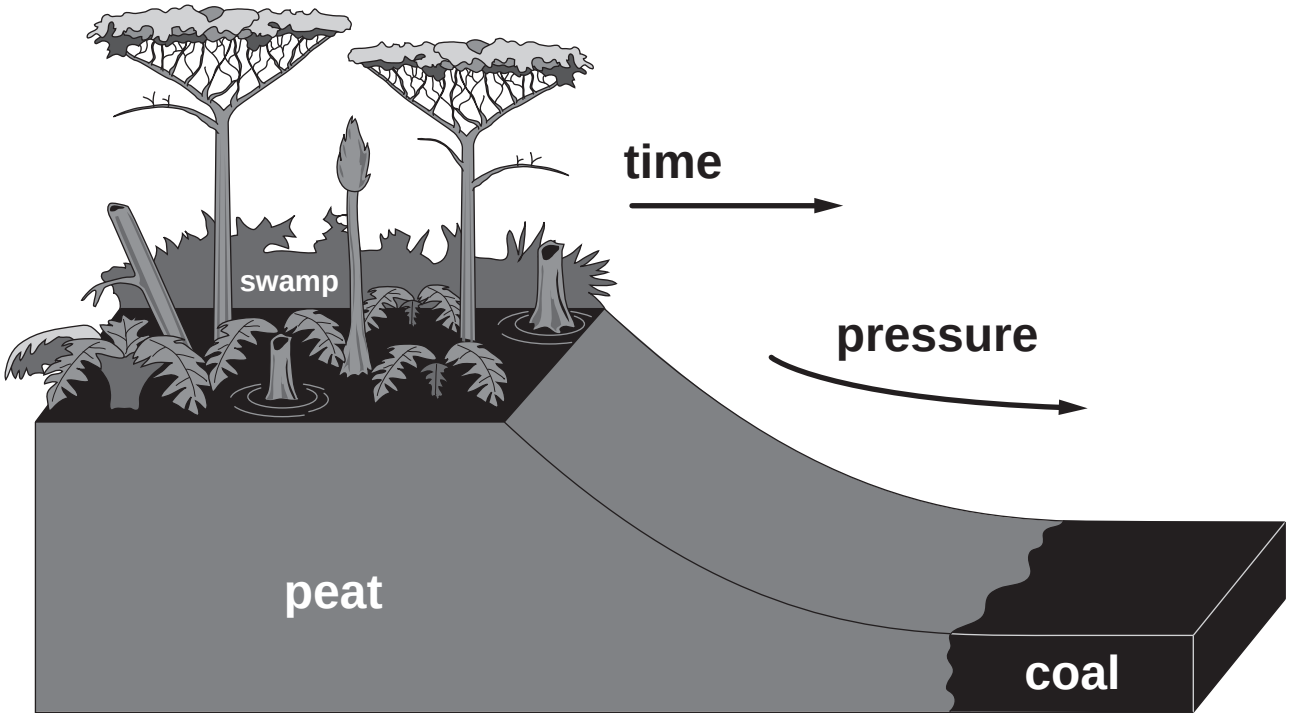
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1	
2	
3	
4	
5	
6	
Total	

This document consists of **13** printed pages and **3** blank pages.

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1 Look at the diagram below which shows the formation of coal from trees.

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(a) (i) How many years ago did the trees that formed coal live?

Choose one:

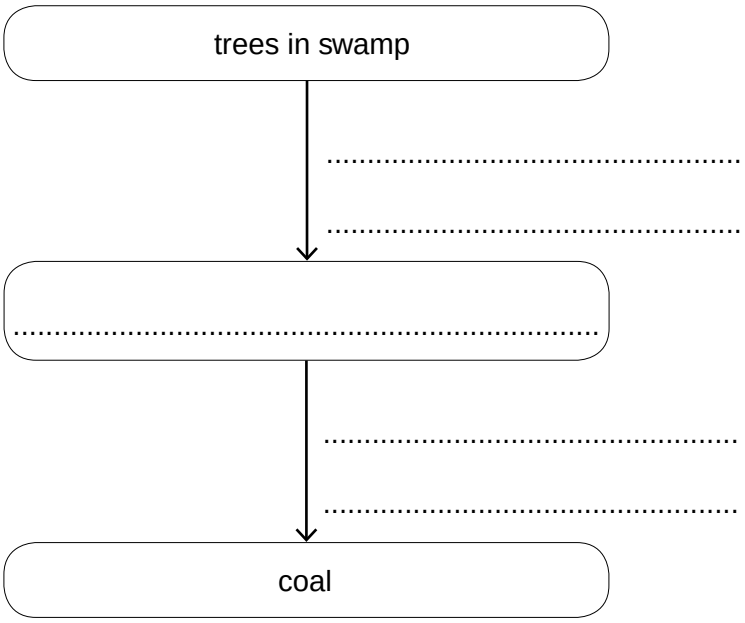
A Hundreds of years

B Thousands of years

C Millions of years

Letter ..... [1]

(ii) Use information from the diagram above to complete the chart below to show the formation of coal from trees in a swamp.



[3]

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(b) (i) Explain why coal mining is dangerous for miners and damages the environment.

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dangerous for miners .....

.....

.....

damages the environment .....

.....

.....[4]

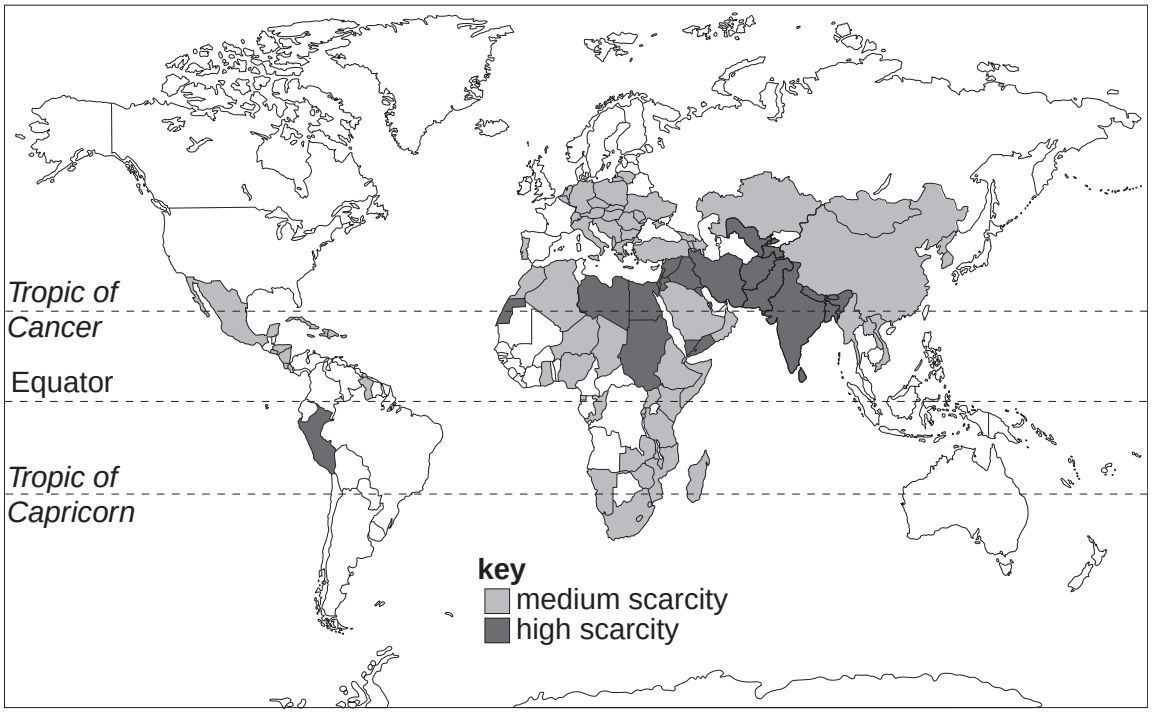
(ii) Name **two** alternative sources of energy that do not cause the same environmental problems as those caused by coal.

1 .....

2 .....[2]

2 Look at the map below showing the distribution of water scarcity around the world.

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(a) (i) Describe where there is high and medium scarcity of water in the world.

.....

.....

..... [2]

(ii) In places with low water scarcity, there will be high precipitation, a process which is part of the water cycle. The following paragraph describes the water cycle. Fill in the gaps using the words below. The words may be used once, more than once or not at all.

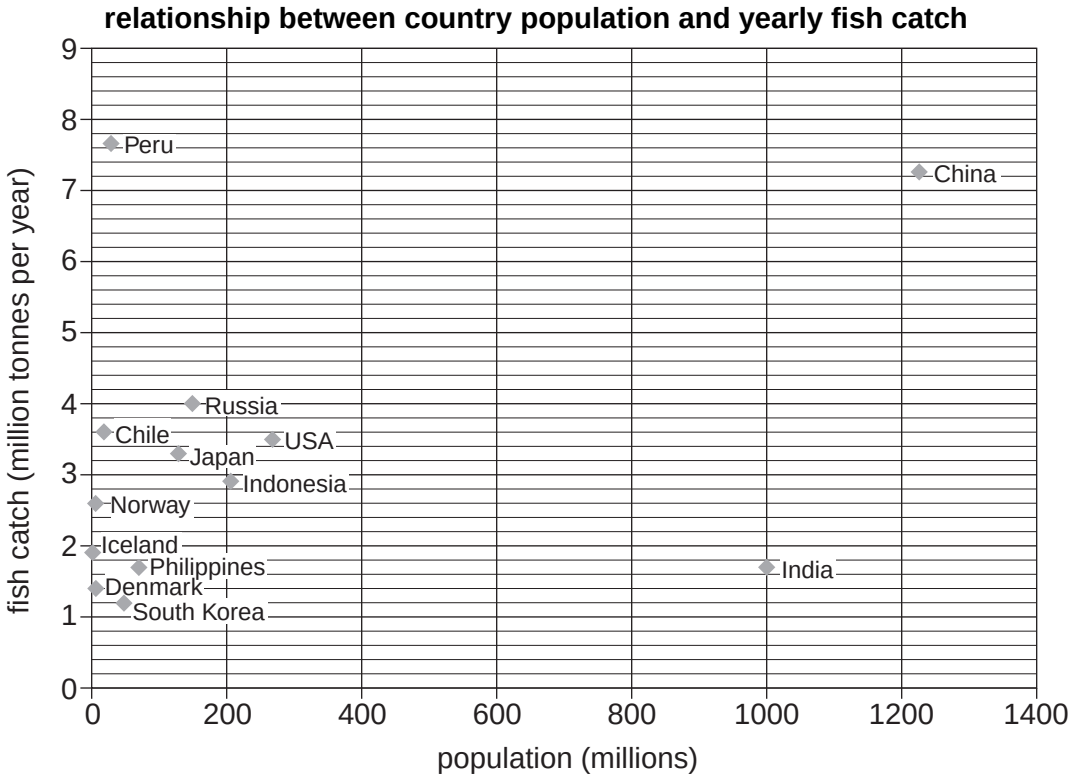
clouds condenses evaporation fog precipitation rain sea/ocean snow Sun vapour

When the ..... shines on the sea, warm air rises. The warm air carries the gas water ..... that was formed by the process called ..... . The water in the air ..... into lots of drops of water, so small that we cannot see them. These form bigger drops that we can see as ..... . When the drops join together to become big and heavy they fall as ..... , hail or ..... . These fall on to the land and into the rivers. The surface rivers flow into the ..... and the cycle is completed. [4]

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(b) As well as being the main reservoir of water in the world, the oceans are also a source of food. The graph below shows the top 13 countries for fish catch and their population.

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(i) Which country has the highest ratio of fish catch to total population?

.....[1]

(ii) Suggest which country is likely to be the biggest exporter of fish.

.....[1]

(iii) State **one** strategy for reducing the problem of overfishing and explain how it works.

.....

.....

.....

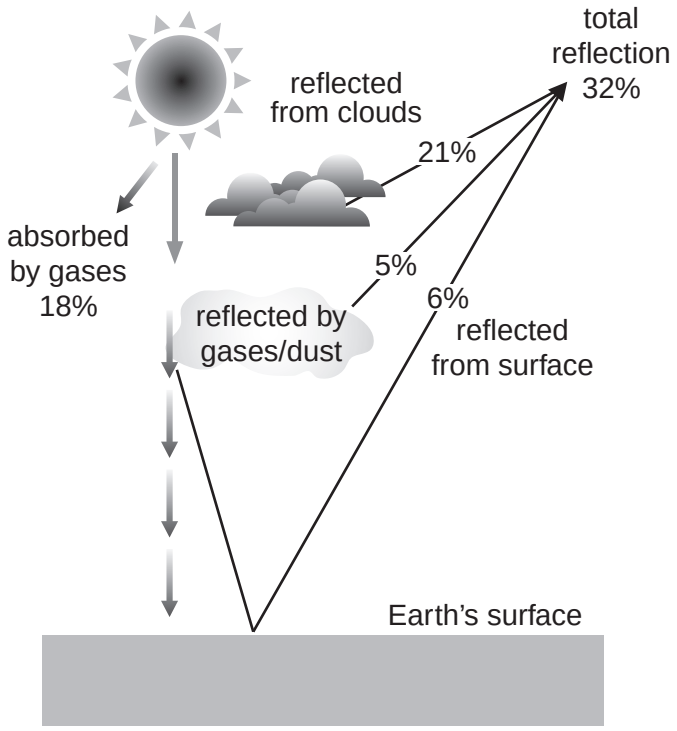
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.....[2]

3 Look at the diagram below showing the input of energy from the Sun to the Earth.

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(a) (i) All the energy from the Sun, which is not absorbed by gases or reflected, is absorbed by the Earth's surface. Calculate the percentage of the Sun's energy that is absorbed by the Earth. Show your working.

[2]

(ii) The energy which is absorbed by the surface can then be radiated back into space. Without greenhouse gases, radiation from the surface would make the Earth too cold for life. Name **two** of these greenhouse gases.

1. .....

2. .....[2]

(b) Over the last two hundred years human activities have led to a decrease in the amount of radiated heat from the Earth's surface being lost to space resulting in the warming of the atmosphere.

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(i) Draw a labelled diagram to show how this warming of the atmosphere occurs.

[2]

(ii) One major source of greenhouse gases is the motor car. Suggest **two** ways of reducing the amount of gases from this source.

.....

.....

.....

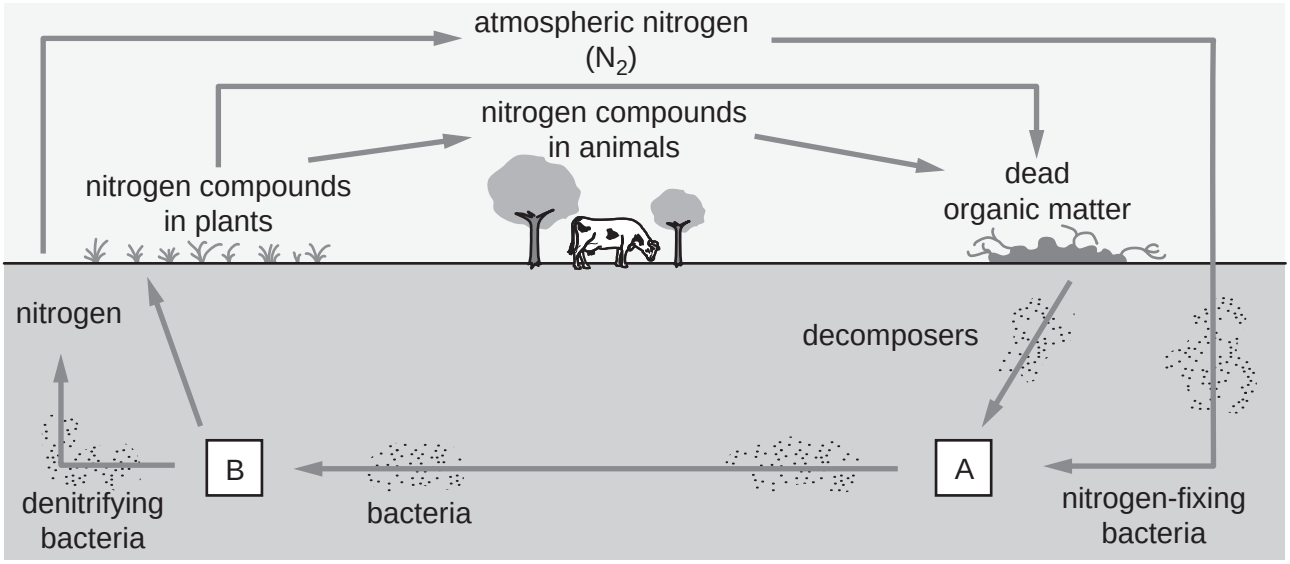
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.....[4]

4 Look at the diagram below showing the nitrogen cycle.

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(a) **(i)** Name the substances at **A** and **B**.

A .....

B ..... [2]

(ii) Plants use substance B as a source of the nitrogen that they need to grow. Name **two** other substances that plants need for good growth.

.....

.....[2]

(b) In order to help crops to grow better and produce a greater yield, farmers often use fertilisers and pesticides.

(i) Describe and explain **one** problem arising from the use of fertilisers and **one** from the use of pesticides.

fertiliser problem .....

.....

.....

pesticide problem .....

.....

.....[4]

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(ii) To avoid the problems pesticide use can cause, farmers can use alternatives. Describe some of these alternatives.

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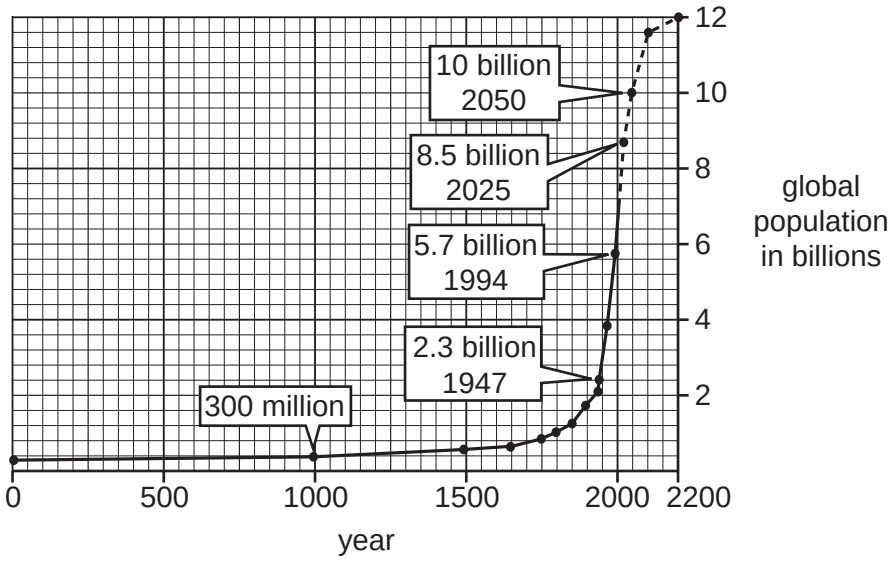
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.....[2]

5 Look at the graph below which shows human population over the last 2000 years and what is expected in the next two hundred years.

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(a) (i) What was the approximate population in the year 1500?

.....[1]

(ii) How many times larger than in the year 1000 does this graph show that the population is expected to be in 2200? Show your working.

[2]

(b) An increasing population causes many problems, especially for the environment.

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(i) List **three** ways, using the headings below, in which the environment might be damaged by population growth on a large scale.

soil .....

.....

water .....

.....

vegetation .....

..... [3]

(ii) The most obvious solution to limit environmental damage is to slow, stop and then reverse population growth. This has been achieved in many European and other more developed countries.

Apart from family planning, describe and explain **two** reasons why population growth rates have slowed down in more developed countries.

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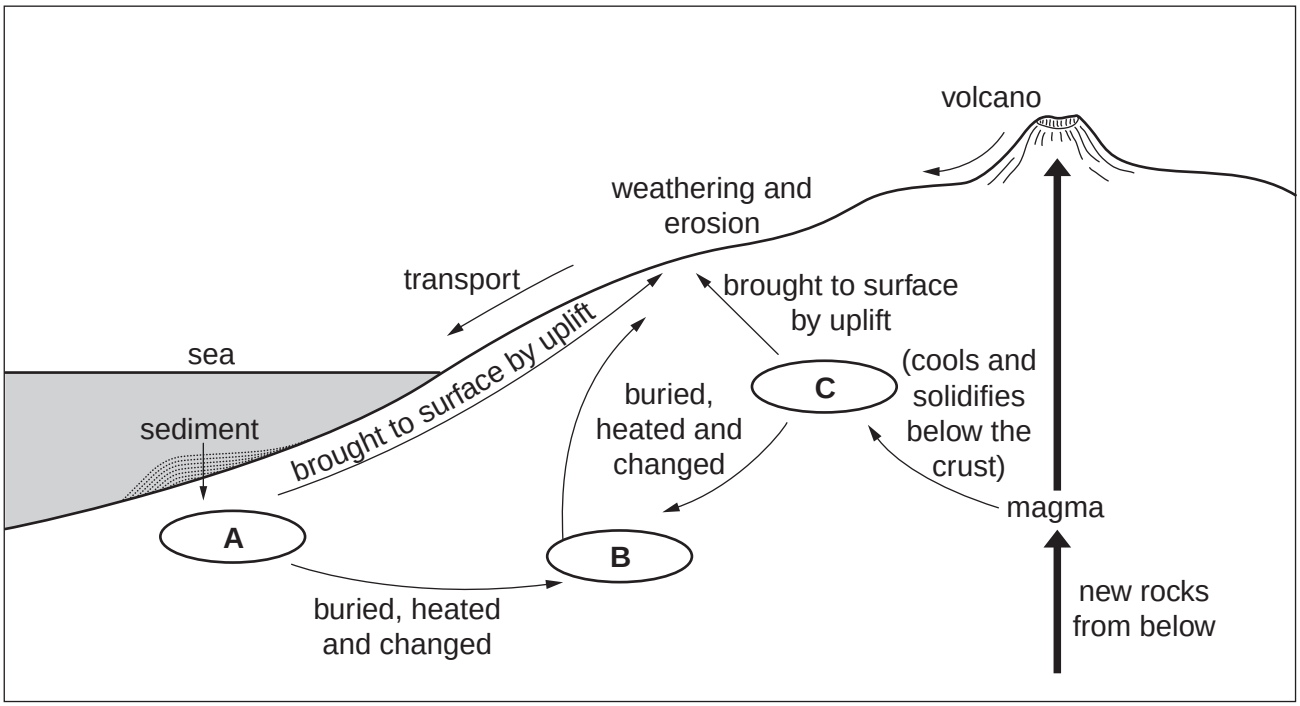
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..... [4]

6 **(a)** Look at the diagram below showing the three main types of rock found on Earth: igneous, sedimentary and metamorphic.

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(i) Match the letters in the diagram with the rock types below.

igneous .....

sedimentary .....

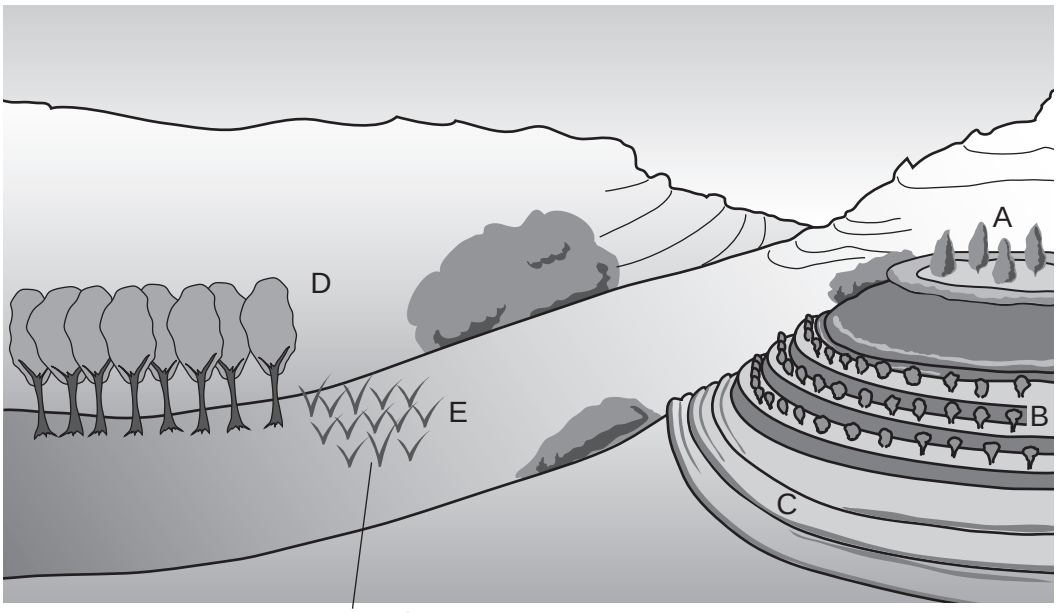
metamorphic ..... [3]

(ii) In the diagram above, which process accounts for the formation of soil?

..... [1]

(b) The diagram below shows some of the ways in which loss of soil can be reduced when growing crops on a hillside.

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(i) Name the process which causes soil loss.

.....[1]

(ii) On the diagram, **A**, **B**, **C** and **D** are all methods which protect against soil loss. Name these methods.

A .....

B .....

C .....

D .....[2]

(iii) In the valley bottom at **E**, forest has been cleared to grow crops. Describe how deforestation and growing crops might lead to increasing levels of carbon dioxide in the atmosphere.

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.....[3]

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