UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

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| CANDIDATE NAME | | | | | | | | | |
| CENTRE NUMBER | | | | | | CANDIDATE NUMBER | | | | |

**ENVIRONMENTAL MANAGEMENT** **0680/11**

Paper 1 **October/November 2012**

**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.

| For Examiner's Use | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| Total | |

This document consists of **15** printed pages and **1** blank page.




UNIVERSITY of CAMBRIDGE International Examinations

**1** In Bristol Bay, Alaska, salmon have been fished for centuries. The fishery income is about $100 million per year. Gold and copper have been discovered in the area recently and people are worried that pollution from mining will destroy the fishery. The mine is thought to have about $100 000 million worth of gold and copper in it.

**(a) (i)** How many years of 'fishery income' will the mine yield? Show your working.

..... years [2]

**(ii)** One person living in Bristol Bay objecting to the mining development said:

"*The fishing we are doing now is sustainable*. *The mining operation is going to be very profitable but unsustainable.*"

Using the information above and your own knowledge, explain what the person meant.

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.....[3]

**(b)** One of the problems from mining in the Bristol Bay area is acidic drainage from the mine going into rivers and lakes.

**(i)** State **one** way, other than by discharge, that lakes and rivers can become more acidified.

.....[1]

**(ii)** Describe how acidification affects ecosystems in rivers and lakes.

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.....[3]

**(iii)** Why is acidification of rivers and lakes an international problem?

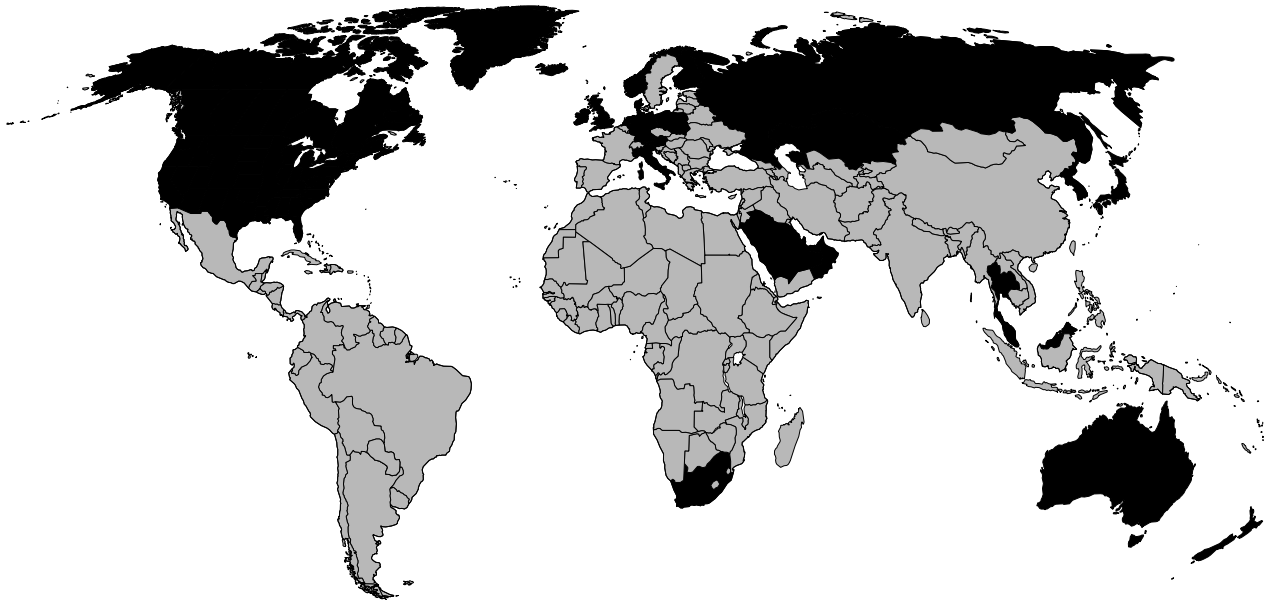
*For Examiner's Use*

.....

.....[1]

**2** The world map below shows carbon dioxide emissions per head of population.

*For Examiner's Use*



**Key:**
$CO_2$ emissions per person per year (arbitrary units)

more than 7.0

7.0 or less

**(a) (i)** Describe how the information on this map gives evidence for the existence of a 'North-South divide'.

.....

.....

.....

**(ii)** How strong is the evidence on the map supporting a North-South divide?

.....

.....

.....

.....[3]

**(iii)** Name **four** other measures of world poverty or wealth used to show differences between countries in the North and the South.

1. .....

2. .....

3. .....

4. .....[2]

**(b)** Carbon dioxide emissions are thought to be a major cause of increased global warming.

*For Examiner's Use*

**(i)** What is global warming?

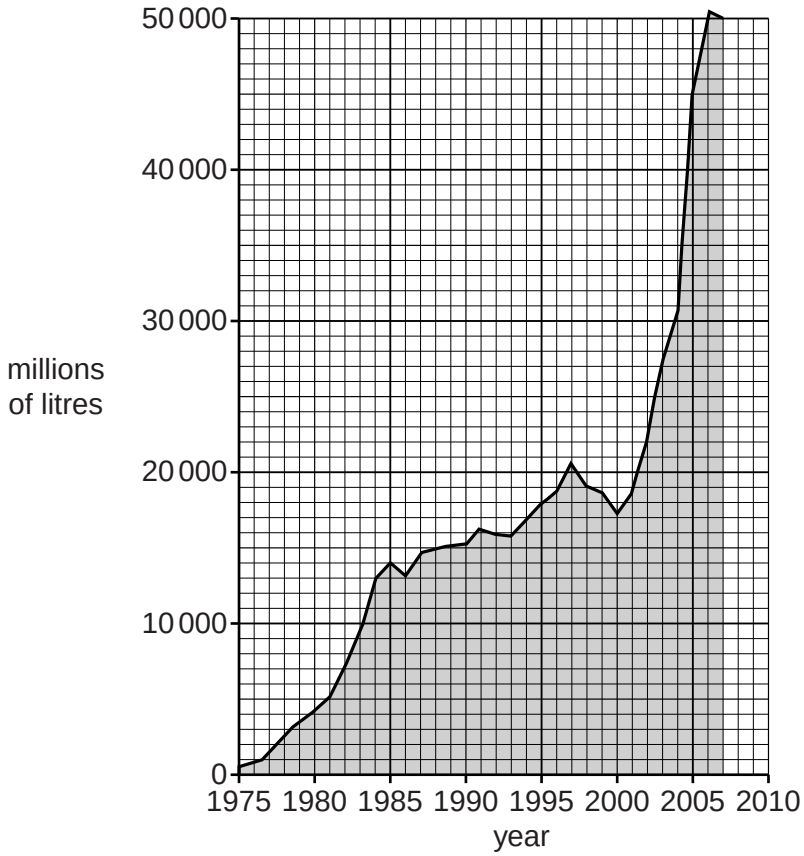
.....

.....

.....[2]

**(ii)** The graph below shows how world production of the biofuel ethanol changed between 1975 and 2007.

**world ethanol production 1975–2007**




Describe how the trend since 2001 might help to reduce global warming.

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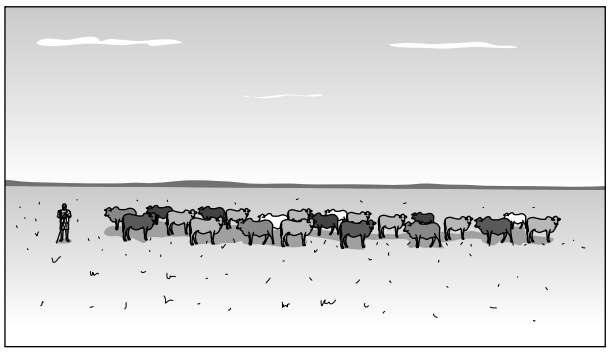
.....[3]

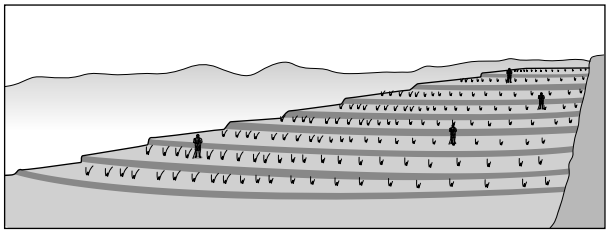
**3** The sketches below show two ways in which people use their natural environment.

*For Examiner's Use*

**A**



**B**



**(a) (i)** Write down the letter that shows each of the following types of farming:

crop farming .....

pastoralism ..... [1]

**(ii)** The sketches show extensive and intensive farming. Using what you can see in the sketches, and your own knowledge, describe differences between extensive and intensive farming.

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.....[4]

**(b) (i)** Land used for farming is one of the main causes of deforestation. Explain how farming and other human activities lead to deforestation.

*For Examiner's Use*

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.....[3]

**(ii)** State **two** consequences of deforestation.

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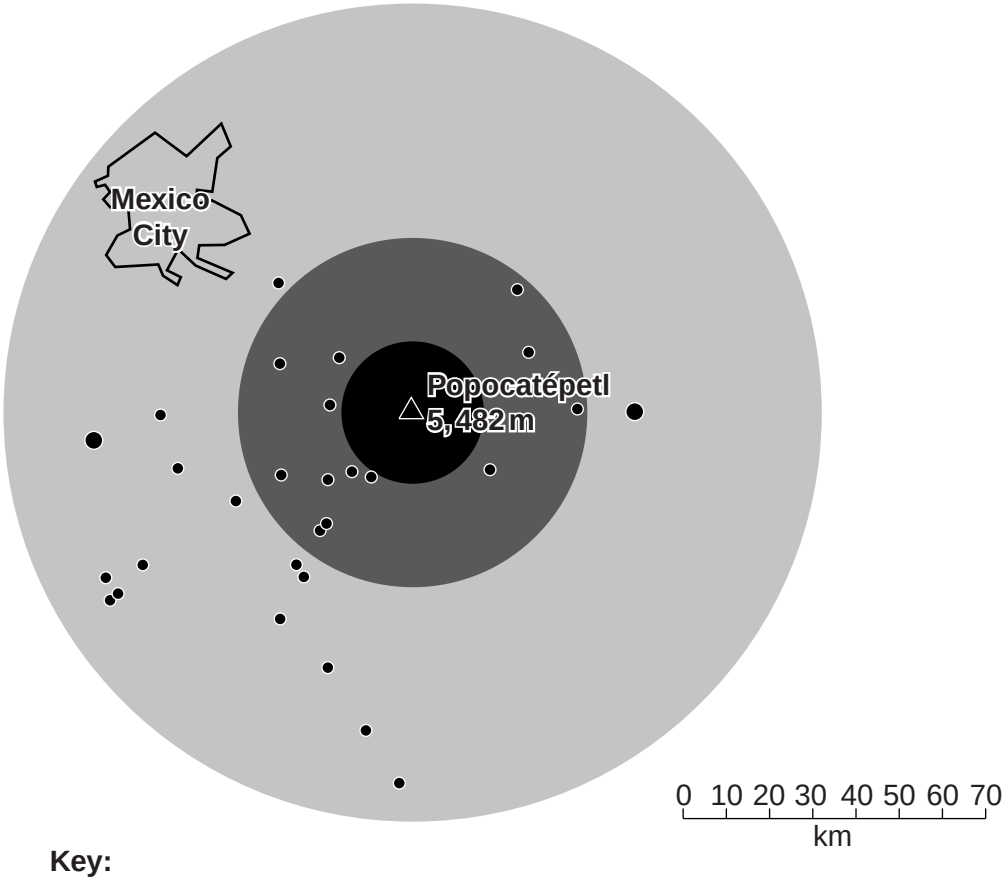
.....[2]

**4** Popocatépetl is a volcano. The map shows Mexico City and the area to its South-East, where over 20 million people live.

*For Examiner's Use*




**Key:**

**Areas threatened by volcano**

- more than one metre of ash after a large eruption
- 11 cm to 99 cm of ash after a large eruption
- 1 cm to 10 cm of ash after a large eruption
- towns and cities

**(a) (i)** What is a volcano?

.....

.....

.....[2]

**(ii)** What is the furthest from Popocatépetl where more than 10 cm of ash would fall after a large eruption?

..... km [1]

**(iii)** How many towns and cities would be affected by a fall of more than 10 cm of ash after such an eruption?

.....[1]

**(iv)** Suggest reasons why people live close to Popocatépetl.

For Examiner's Use

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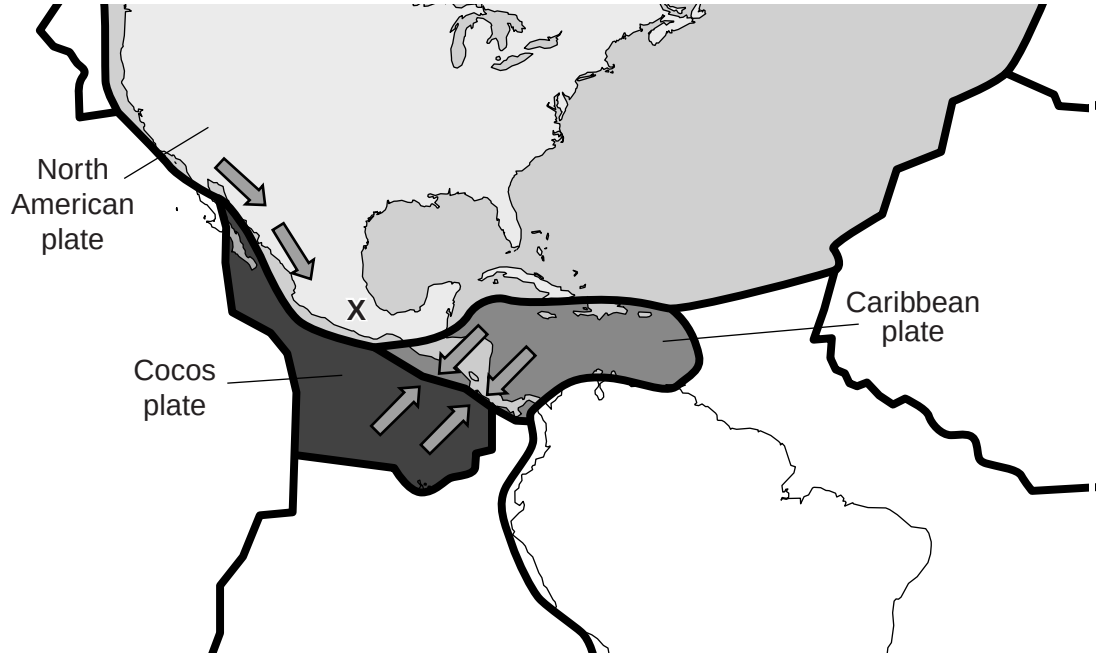
.....[3]

**(b)** Using the map below and your own knowledge suggest why there are volcanoes at location **X**.

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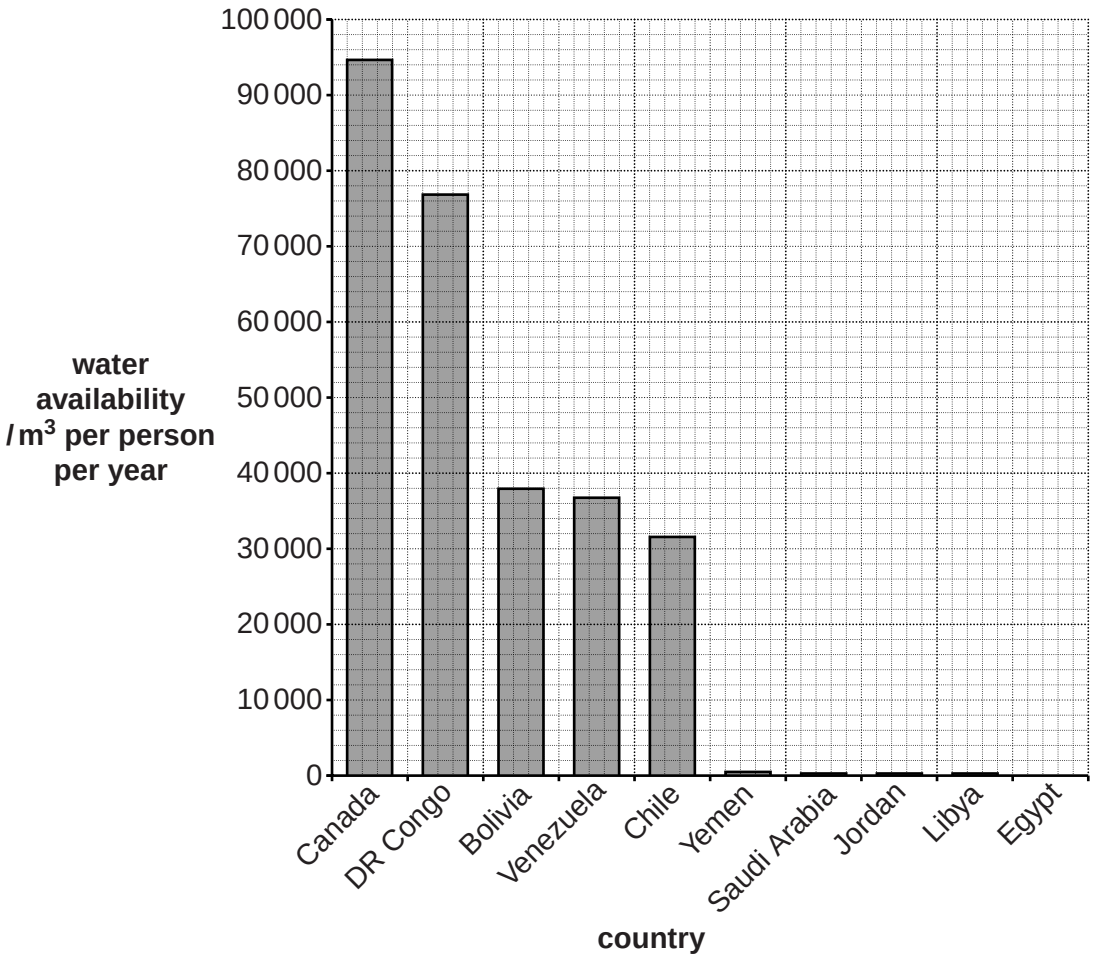
**5** The world average fresh water availability is 7000 $m^3$/person/year. This would be enough for all the world's people if it were evenly distributed. The graph shows the water wealth of ten countries.

*For Examiner's Use*

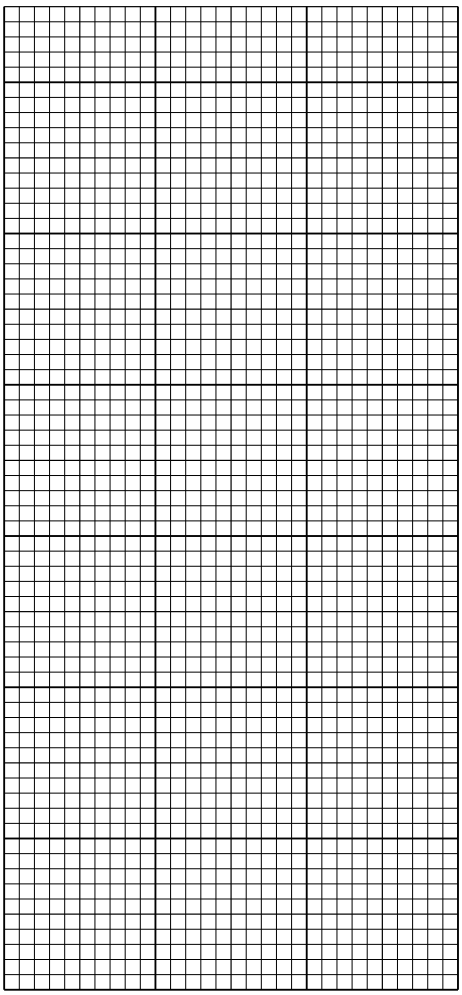



The water wealth of the five countries with the lowest water wealth (water poor) is shown below:

| water poor countries | water availability / $m^3$ per person per year |
|---|---|
| Yemen | 240 |
| Saudi Arabia | 120 |
| Jordan | 115 |
| Libya | 100 |
| Egypt | 45 |

**(a) (i)** Plot the values for the five water poor countries on the grid below, choosing an appropriate scale so that the differences between them are clearer than on the graph on the previous page.

*For Examiner's Use*



[3]

**(ii)** There are a number of ways in which water poor countries can increase their supplies of fresh water. One is desalination. Suggest why the world's largest users of desalinated water are the countries around the Gulf in the Middle East.

.....

.....

.....

.....[2]

**(iii)** Apart from desalination describe how water poor countries can increase their water supplies.

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.....[2]

**(b)** Give reasons why there is often better access to safe (clean) water in urban areas than in rural areas.

*For Examiner's Use*

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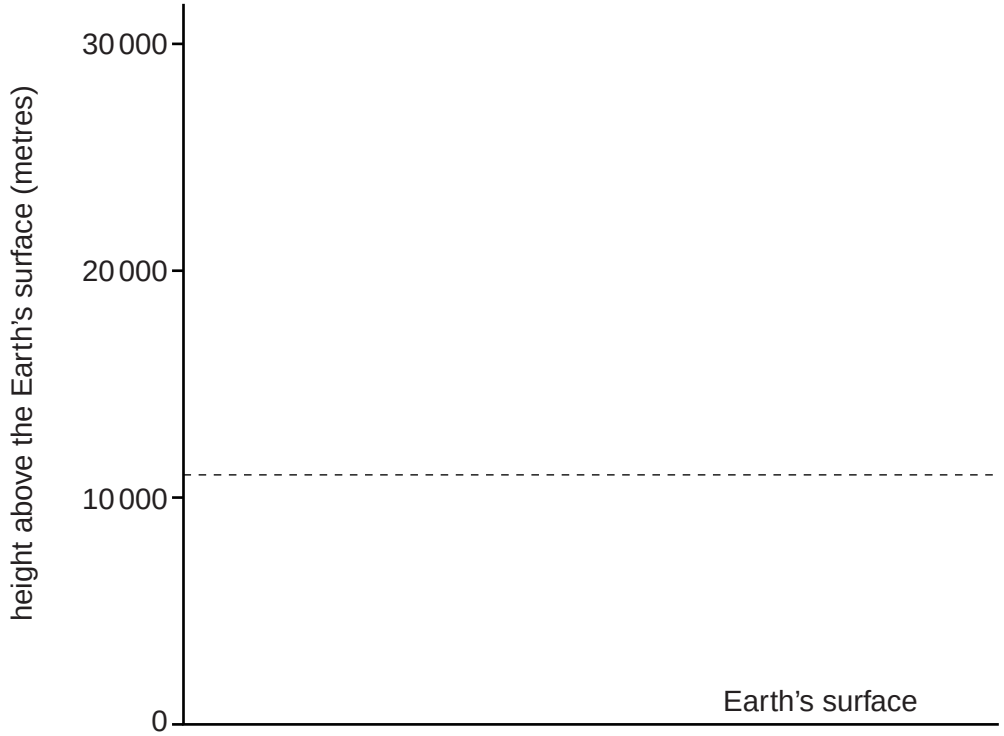
.....[3]

**QUESTION 6 BEGINS ON PAGE 14**

**6** The diagram shows the structure of the atmosphere in temperate latitudes.

*For Examiner's Use*




Four gases found in the atmosphere are ozone, carbon dioxide, oxygen and water vapour.

**(a) (i)** Write on the diagram where the majority of each of these gases is found. [2]

**(ii)** These gases are all important for life on Earth. The following passage gives some of the reasons why. Complete it **using the names of the gases above**.

Of the four gases in the atmosphere, two are used by plants. For photosynthesis ..... is used and for respiration ..... is used. Animals also use ..... in respiration. Of these gases, two, ..... and ..... are greenhouse gases. One of the four gases, ..... protects all life on Earth from harmful ultra-violet light from the Sun. [3]

**(b)** Over human history the atmosphere has been changing. These changes have consequences for human health and global temperature.

**(i)** Explain how changes in carbon dioxide concentration can affect global temperature.

.....

.....

**(ii)** Explain how changes in ozone concentration can affect human health.

.....

.....[3]

**(iii)** Describe strategies for dealing with the problems caused by changes in the amount of ozone.

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.....[2]

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