Cambridge IGCSE

**Cambridge International Examinations**
Cambridge International General Certificate of Secondary Education

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

*2276691207*

**ENVIRONMENTAL MANAGEMENT** **0680/22**

Paper 2 **February/March 2017**

**1 hour 45 minutes**

Candidates answer on the Question Paper.

No Additional Materials are required.

**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 an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **both** questions.

Electronic calculators may be used.
You may lose marks if you do not show your working or if you do not use appropriate units.

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.

This document consists of **14** printed pages and **2** blank pages.


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CAMBRIDGE International Examinations

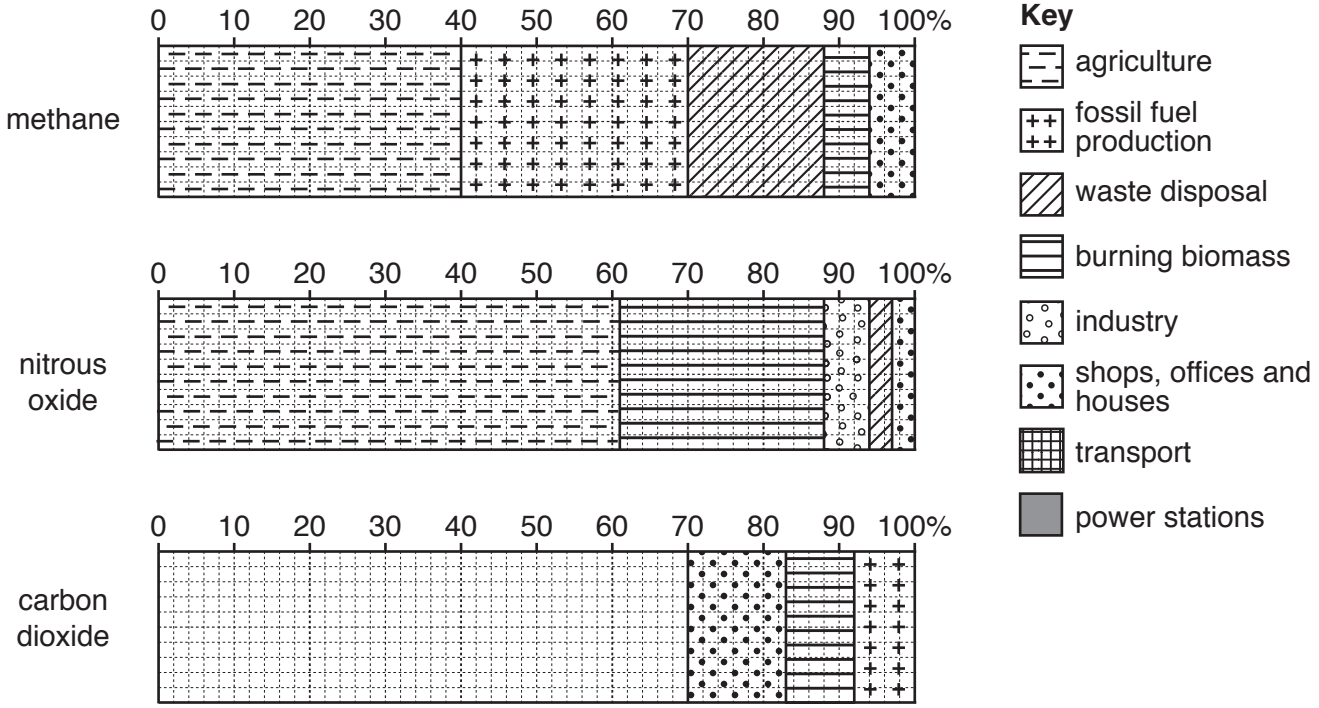
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**1** **(a)** The divided bar graphs show the sources of three greenhouse gases.

**(i)** Complete the divided bar graph for carbon dioxide using the following information and the key.

| | |
|---|---|
| power stations | 30% |
| industry | 21% |
| transport | 19% |




[3]

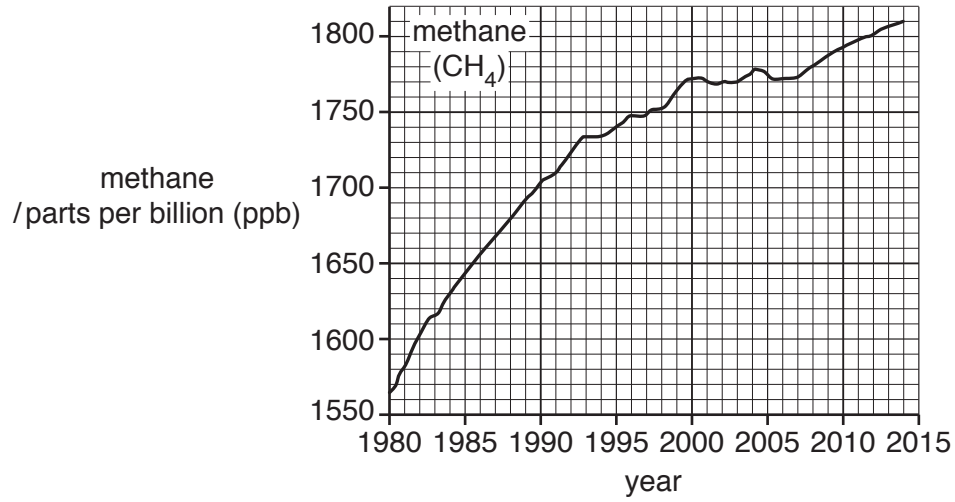
**(ii)** Use the divided bar graphs to complete the table.

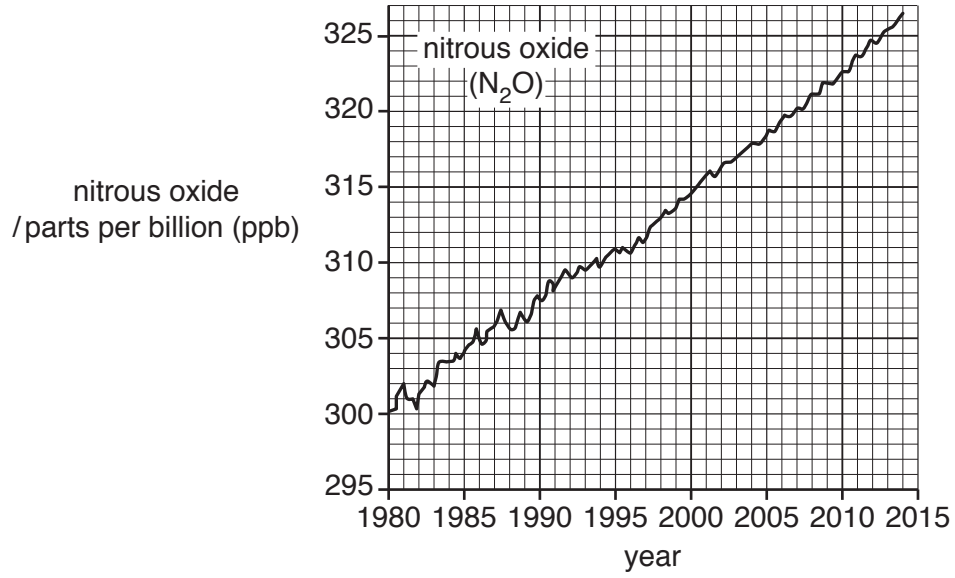
| source | methane % | nitrous oxide % |
|---|---|---|
| agriculture | 40 | ….. |
| fossil fuel production | 30 | ….. |
| waste disposal | ….. | 3 |
| burning biomass | 6 | ….. |
| industry | ….. | 6 |
| shops, offices and houses | ….. | 3 |

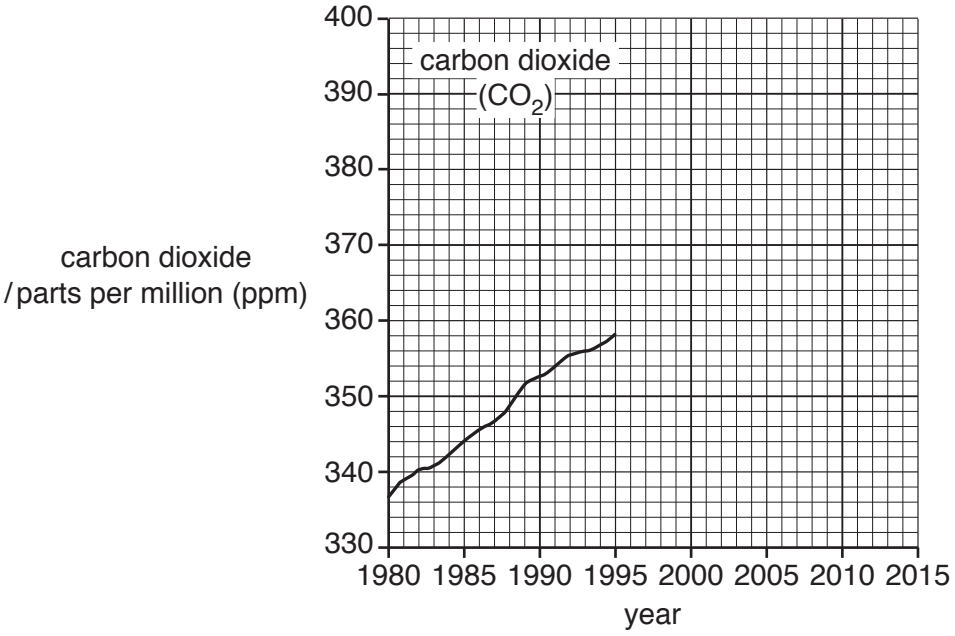
[3]

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**(b)** The graphs show changes in concentration of three greenhouse gases in the atmosphere from 1980 to 2014.




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**(i)** Calculate the increase in methane concentration from 1980 to 2014.

Show your working.

..... ppb [2]

**(ii)** Describe **one** difference between the trends of methane and nitrous oxide concentrations.

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.....[1]

**(iii)** Describe how agriculture releases methane into the atmosphere.

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.....[3]

**(iv)** Complete the graph for carbon dioxide concentration in the atmosphere using the data in the table.

| year | carbon dioxide / ppm |
|---|---|
| 2000 | 370 |
| 2005 | 380 |
| 2010 | 390 |
| 2014 | 400 |

[2]

**(v)** Explain why carbon dioxide concentration in the atmosphere has increased in recent years.

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**(c) (i)** Explain why greenhouse gases are necessary for life on Earth.

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.....[3]

**(ii)** Give reasons why many people are concerned about the increase in greenhouse gases in recent years.

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.....[4]

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**(d)** The newspaper article gives information about the country of Kiribati.

## Kiribati Evacuation Planned

The country of Kiribati consists of 33 low-lying islands in the Pacific Ocean. In the past few years a rise in sea level has caused farmland to be flooded with salt water at high tide. Some water supplies have become saline and cannot be used for drinking. Many houses close to the coast are flooded at high tide.

The government of Kiribati has bought 2000 hectares in Fiji, another Pacific country, and is planning to move the people of Kiribati there over the next few years. The land bought is too small for the whole population of 113 000, but it is not easy to find and buy land that can be farmed and is not already populated.

**(i)** Explain why people in Kiribati do not have enough food and drinking water.

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.....[3]

**(ii)** The land in Fiji can only support 80 000 people.

Calculate how many people will need to remain in Kiribati.

.....[1]

**(iii)** Suggest why the government of Kiribati thinks that the whole population will have to leave their country in the near future.

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.....[3]

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**[Turn over**

**(iv)** In Bangladesh, 50 million people in the south of the country are at possible risk of rising sea levels.

Suggest why the government of Bangladesh cannot move all these people.

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**(e)** Suggest why international agreements have **not** prevented an increase in greenhouse gases.

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**2** **(a)** The table shows information about the world population at the end of 2013.

| continent | population / millions | annual growth rate / % |
|---|---|---|
| Asia | 4300 | 1.0 |
| Africa | 1112 | 2.5 |
| Europe | 745 | 0.1 |
| South America | 616 | 1.1 |
| North America | 355 | 0.8 |
| Oceania | 38 | 1.4 |
| world | …… | 1.1 |

**(i)** Complete the table by calculating the world population in 2013. [1]

**(ii)** State the continent with the lowest annual growth rate.

…….. [1]

**(iii)** Using information from the table, calculate the population of Asia at the end of 2014.

Show your working.

..... million [2]

**(iv)** Explain why the annual growth rate of population is much greater in some continents than in others.

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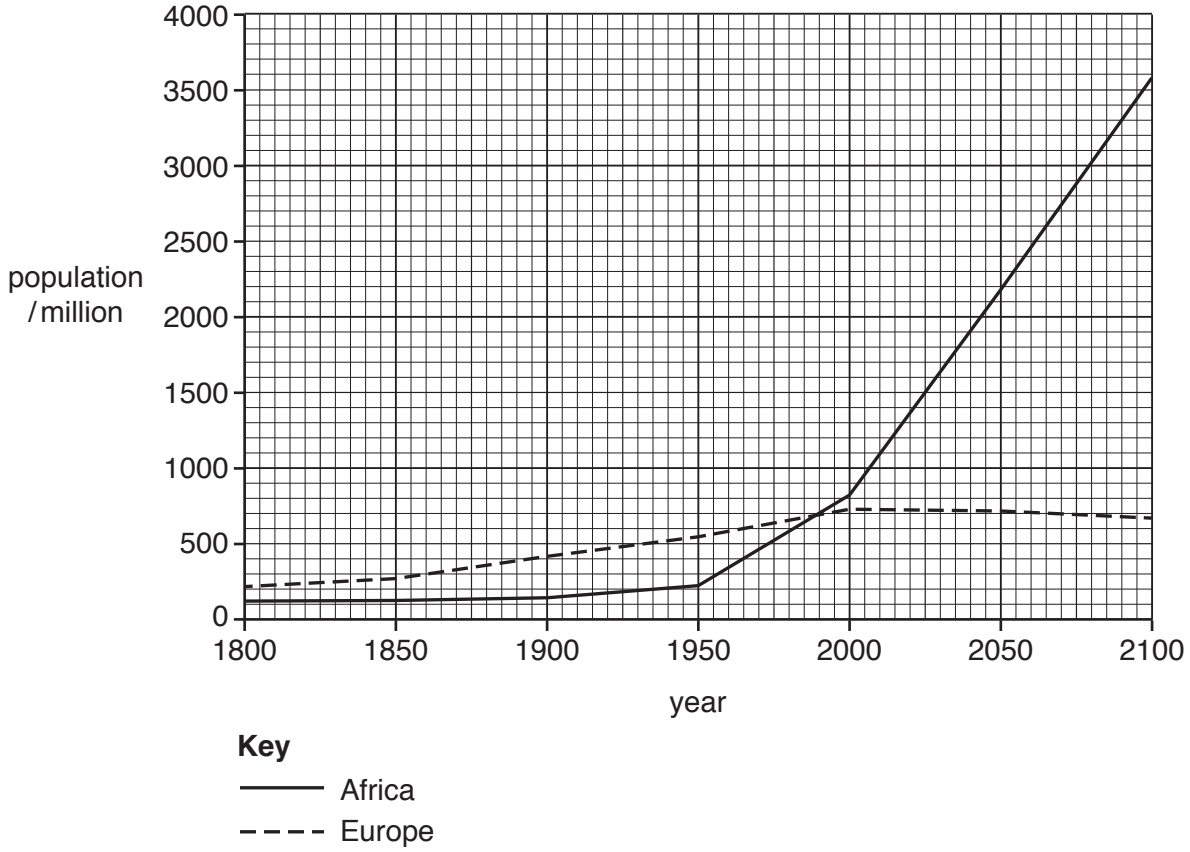
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**(b)** The graph shows the populations of Africa and Europe from 1800 and predicted to 2100.




**(i)** State the year when the populations of Africa and Europe were the same.

.....[1]

**(ii)** Compare the changes in the populations of Africa and Europe from 1800 to 1950.

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.....[2]

**(iii)** Describe the trends in the populations of Africa and Europe from 1950, as shown on the graph.

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**(iv)** Suggest reasons why some countries have a decreasing population.

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.....[3]

**(c)** Explain why an increase in world population causes a loss of natural habitats.

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**(d)** The photograph shows an area of land.



**(i)** Explain why the area shown in the photograph has a very low population density.

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.....[3]

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**(ii)** There are a few plants growing in the area shown on the photograph.

Explain how some plants are able to live in such an area.

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.....[4]

**(e)** The photograph shows a settlement on the edge of a city in a developing country.



**(i)** Describe the settlement shown in the photograph.

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.....[3]

**(ii)** Suggest reasons why this settlement has developed on the edge of a city.

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**(iii)** 'The best way to improve the settlement shown in the photograph is through community participation.' How far do you agree with this statement? Give reasons for your answer.

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.....[6]

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