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Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

4888614605

ENVIRONMENTAL MANAGEMENT **0680/23**

Paper 2 **May/June 2015**

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.

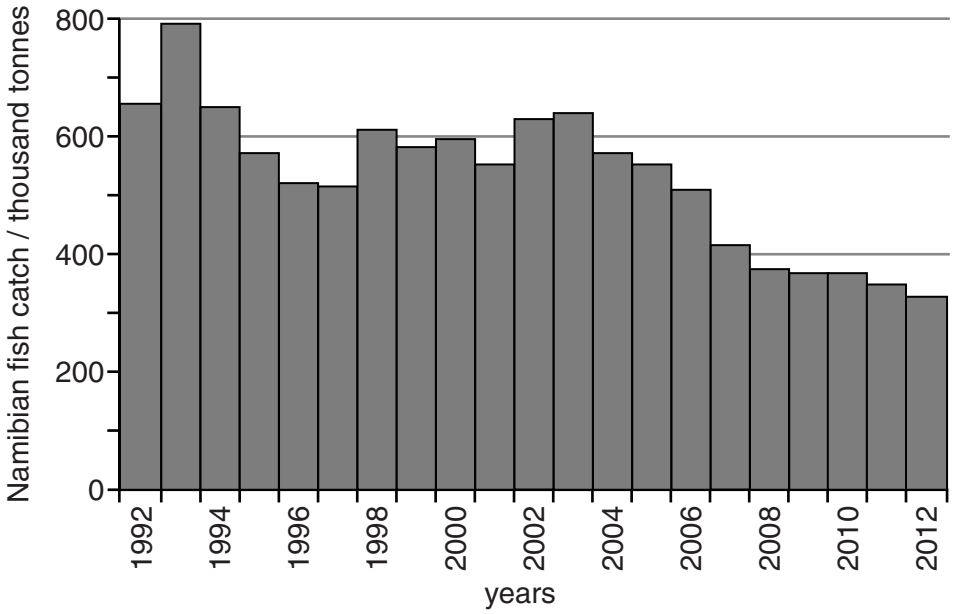
Electronic calculators may be used.
You may lose marks if you do not show your working or if you do not use appropriate units.

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.

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1 **(a)** Look at the graph, which shows the annual fish catch, excluding tuna, in Namibia, a developing country in Africa.



(i) State the year with the highest fish catch.

.....[1]

(ii) Describe the trends in the Namibian fish catch from 1992 to 2012.

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(iii) Suggest reasons for the change in the Namibian fish catch between 1992 and 2012.

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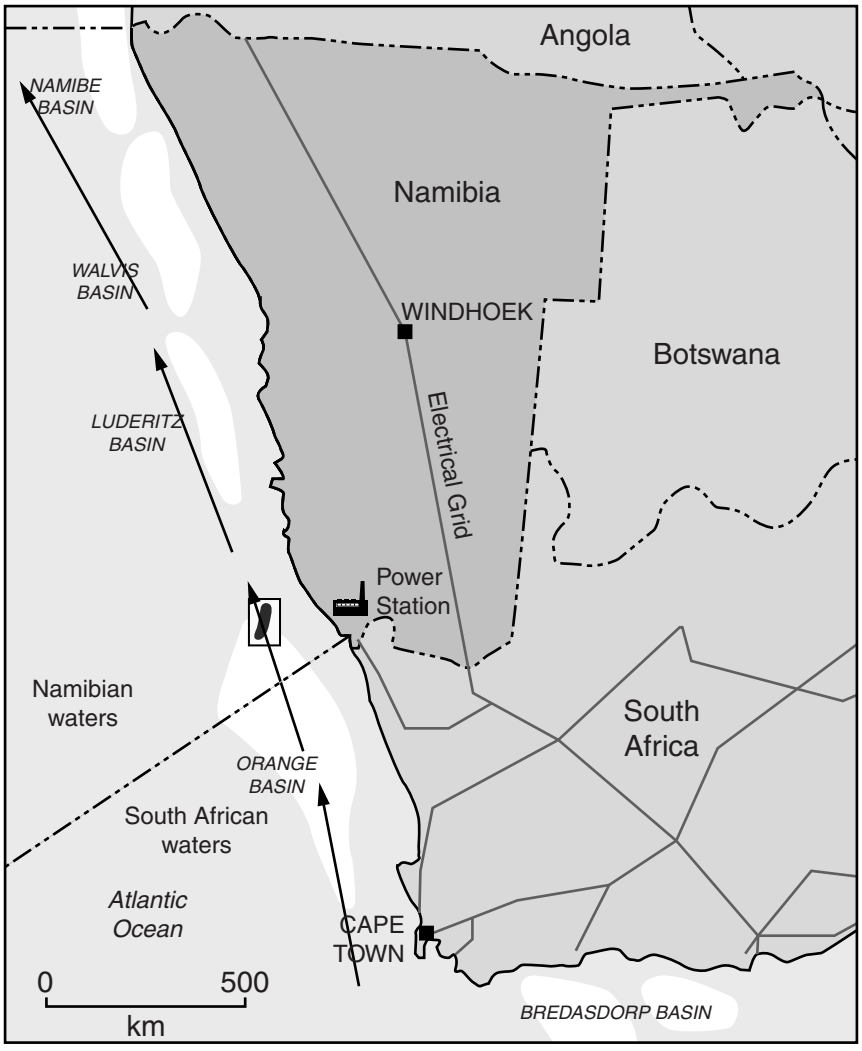
(b) Study the newspaper report and map.

Namibia: government fears tuna depletion as oil and gas exploration keep fish away

Seismic surveys for gas and oil in Namibian waters have led to a massive reduction in tuna caught from 1800 tonnes in 2012 to about 650 tonnes in 2013. This is a large decrease from 2011, which was 4000 tonnes caught. In 2011 there were 40 tuna fishing boats each with about 10 employees. Now there are only about 10 tuna fishing boats at sea. The seismic surveys are in the main tuna fishing area off the coast of southern Namibia.

Tuna swim north from South African waters to Namibian waters. Increased seismic tests near the border have led the fishing industry to believe that before the fish enter Namibian waters, they change direction and head away from the coast.

The Ministry of Fisheries has proposed that seismic surveys should only be carried out from May to November. About 70% of the tuna catch in Namibian waters occurs in March and February. All the tuna are caught using pole and line rather than nets.



Key

usual tuna migration route

oil and gas exploration areas

Kudu gas field

electricity grid

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[Turn over

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(i) Calculate the decrease in tuna catch between 2011 and 2013.

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..... tonnes [1]

(ii) Suggest possible impacts of the reduced fish catch on the people and economy of Namibia.

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.....[3]

(iii) Explain why seismic surveys should only be carried out between May and November.

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.....[1]

(iv) The tuna are caught by pole and line rather than by nets. Suggest why.

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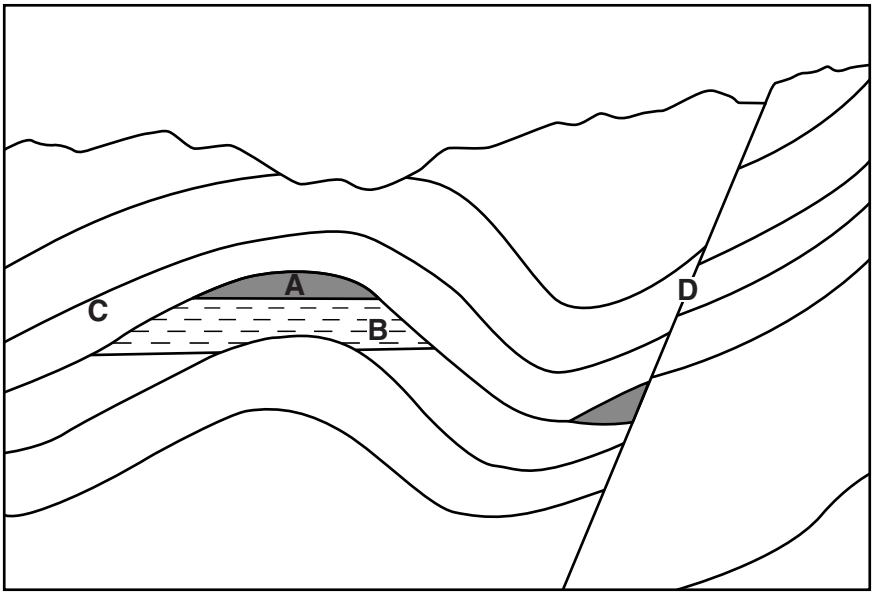
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(c) Look at the diagram of gas and oil traps.



(i) Match the letters **A**, **B**, **C** and **D** on the diagram to the labels. [3]

label	**letter**
fault	…….
gas	…….
layer of impermeable rock	…….
oil	…….

(ii) Name the type of fold at **A**.

.....[1]

(iii) Explain how gas and oil were formed.

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(iv) Briefly explain how seismic surveys are used to find possible gas and oil traps.

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(d) Look again at the map in part **(b)**. Suggest **two** methods that could be used to transport the gas from the Kudu gas field to the Namibian coast.

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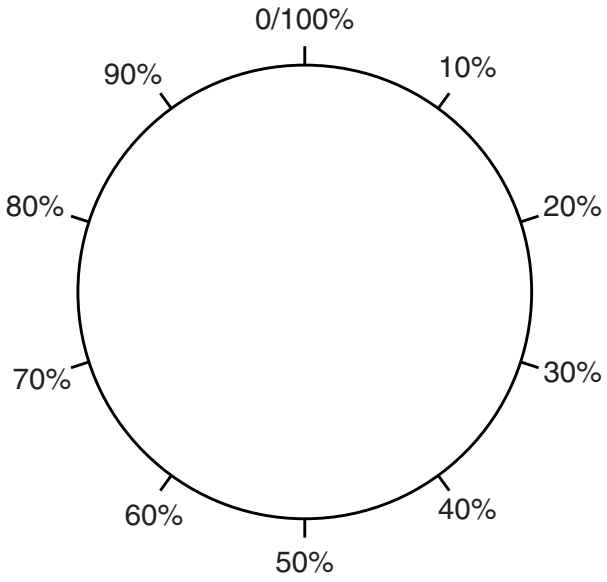
(e) Look at the table which shows world energy consumption in 2012.

energy type	percentage use
oil	33
coal	30
gas	24
HEP	7
nuclear	4
renewables other than HEP	2

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(i) Draw a pie graph in the circle below to show energy type by percentage for 2012 and complete the key.



Key

- ☐ oil
- ☐ coal
- ☐ gas
- ☐ HEP
- ☐ nuclear
- ☐ renewables other than HEP

[4]

(ii) Calculate the percentage of energy produced from fossil fuels in 2012.

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.....% [1]

(f) Much of Namibia is desert. However, the government of Namibia plans to generate electricity using gas rather than using solar power. Suggest reasons why.

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.....[2]

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(g) 'Biomass, biogas and fuel from organic waste should be used more to solve the world's energy problems.' How far do you agree with this statement? Give reasons for your answer.

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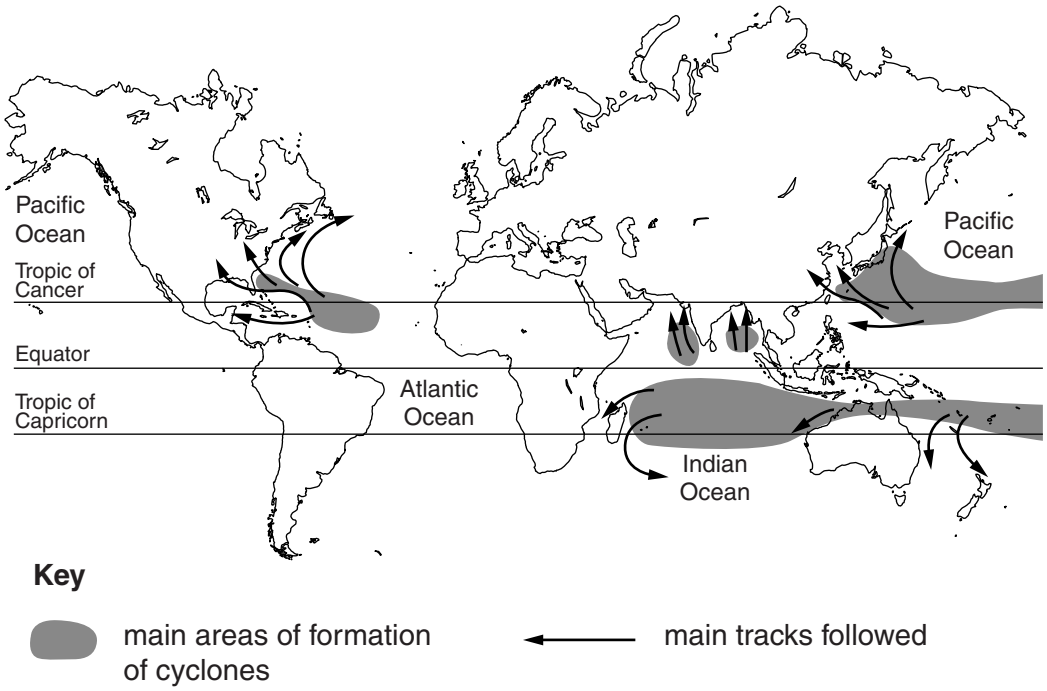
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2 **(a)** Look at the map, which shows the main source areas and tracks of cyclones.



(i) Describe the location of the main areas of cyclone formation.

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(ii) Suggest reasons why cyclones are formed in these areas.

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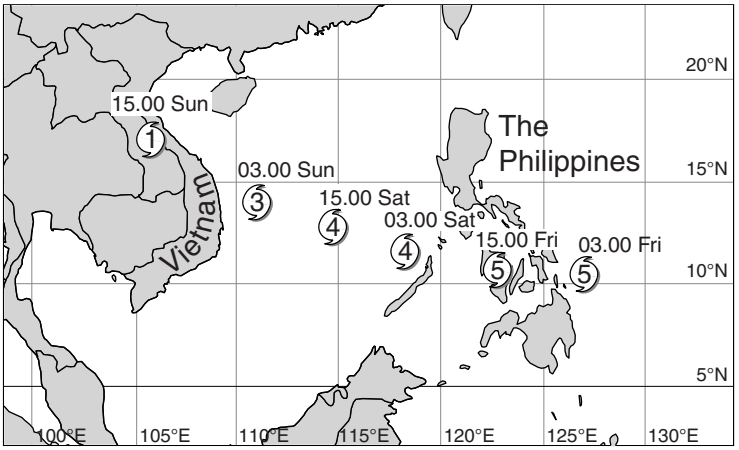
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(b) Look at the map, which shows the path of Typhoon (cyclone) Haiyan as it crossed the Philippines and Vietnam in November 2013.



Key

cyclone location and category

cyclone category	wind speed / kilometres per hour
1	119 – 153
2	154 – 177
3	178 – 208
4	209 – 251
5	over 251

(i) Describe the path of Typhoon Haiyan from 03.00 hours on Friday to 15.00 hours on Sunday.

.....

.....[1]

(ii) State the wind speed at 15.00 hours on Friday as Typhoon Haiyan passed over the Philippines.

.....[1]

(iii) How does the wind speed change after 15.00 hours on Friday?

.....[1]

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(iv) Describe the impacts of a cyclone on human communities.

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(v) Suggest how the impacts of cyclones can be reduced.

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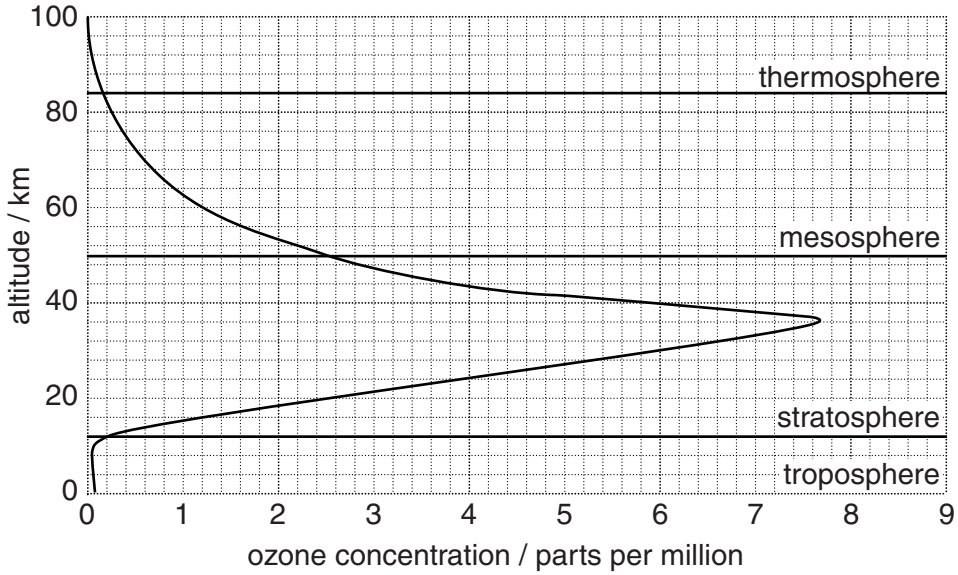
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(c) Look at the graph below, which shows ozone concentrations in the atmosphere.



Using information from the graph complete the sentence below.

The concentration of ozone is very ……. close to the Earth's surface. It reaches a maximum of …… parts per million at a height of …… km in the layer called the ……sphere. [3]

(d) Part of the atmosphere has a high concentration of ozone. Explain why this ozone layer is important to life on Earth.

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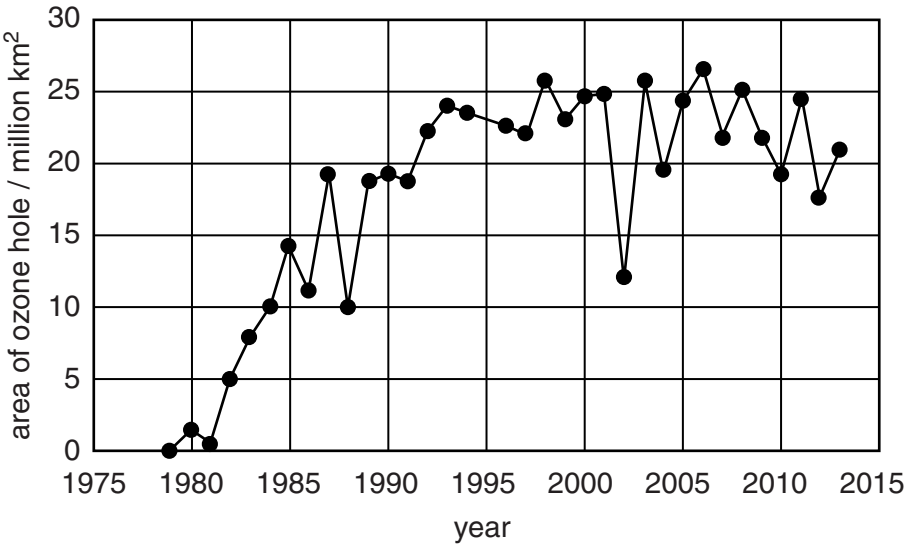
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(e) Look at the graph, which shows the size of a hole in the ozone layer above Antarctica from 1979 to 2013.



(i) Calculate the increase in size of this ozone hole from 1979 to 1993.

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..... million km^2 [1]

(ii) Describe the changes in the size of this ozone hole since 1993.

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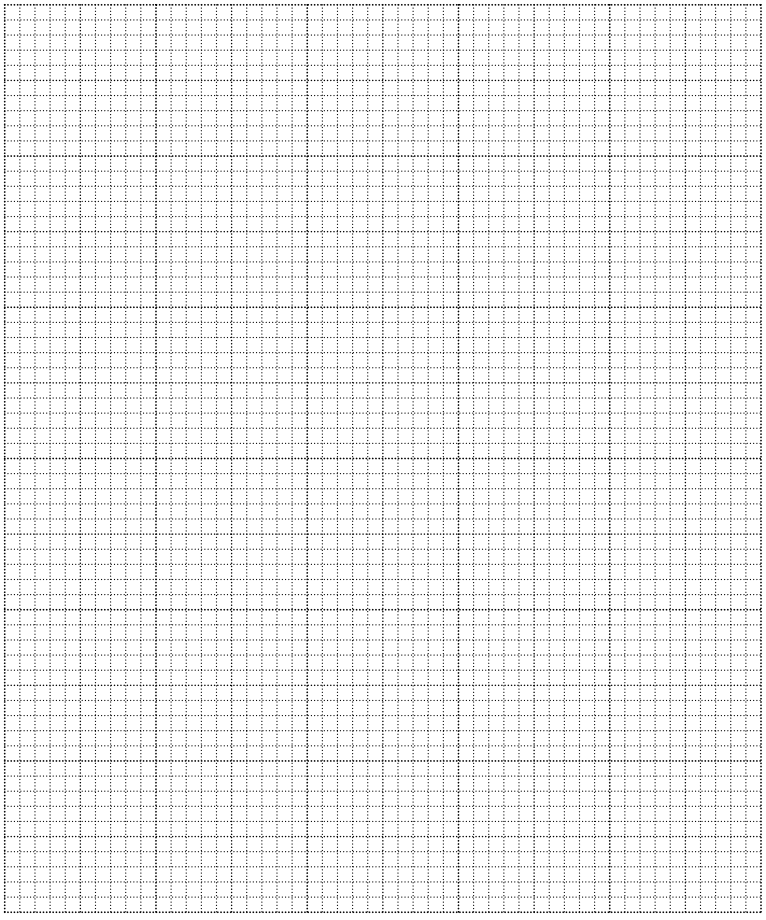
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(f) CFCs have caused the amount of ozone in the atmosphere to be reduced. Nearly all countries had stopped production of CFCs by 1995.

(i) Look at the table, which shows the amount of CFCs in the atmosphere from 1980 to its predicted value in 2030.

Use the data in the table to draw a graph of CFC concentrations from 1980 to 2030.

year	CFC concentration / parts per trillion
1980	460
1990	710
2000	870
2010	810
2020 (predicted)	720
2030 (predicted)	630



[4]

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(ii) Suggest why CFCs are still present in the atmosphere.

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.....[3]

(iii) State **one** environmental problem that CFCs cause, other than damaging the ozone layer.

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.....[1]

(g) 'Atmospheric pollution will always be a major problem.' How far do you agree with this statement? Give reasons for your answer.

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