UNIVERSITY OF CAMBRIDGE INTERNATIONAL EX
International General Certificate of Secondary Educati

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CAN NUMBER

8258350877

ENVIRONMENTAL MANAGEMENT **0680/23**

Paper 2 **October/November 2013**

1 hour 45 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 **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.

For Examiner's Use	
1	
2	
Total	

This document consists of **16** printed pages.

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1 **(a)** **(i)** The numbers show the percentages by volume of four g

78.09 **20.95** **0.039** **0.000**

Circle the number for the percentage of carbon dioxide i

(ii) State two different reasons why carbon dioxide is very i

1 .....

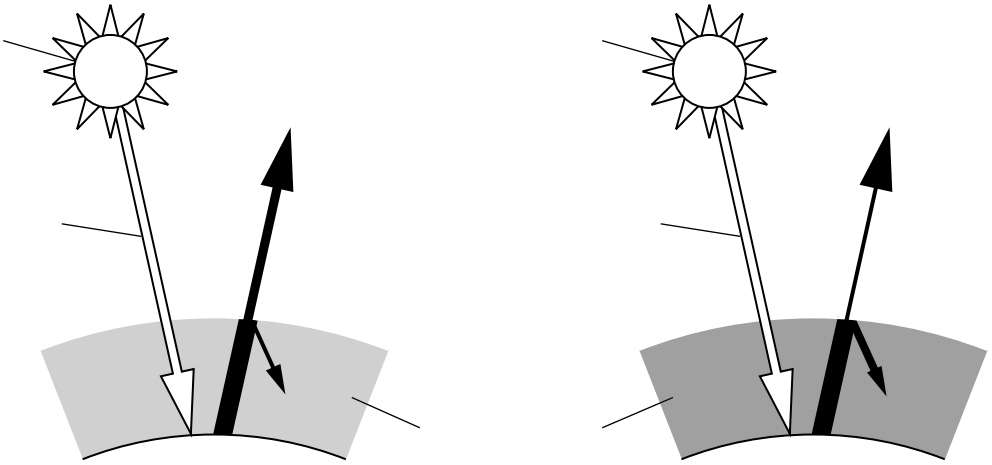
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2 .....

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[3]

(b) Carbon dioxide (CO_2) is one of the greenhouse gases. Look at the diagrams showing the greenhouse effect in 1900 and the increased (enhanced) greenhouse effect in 2010.



State any differences shown between 1900 and 2010 from,

(i) heat gain to the Earth from sunlight

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(ii) heat loss from the Earth into space

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(iii) amount of CO_2 present in the atmosphere.

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[2]

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(iv) Explain how the greenhouse effect works.

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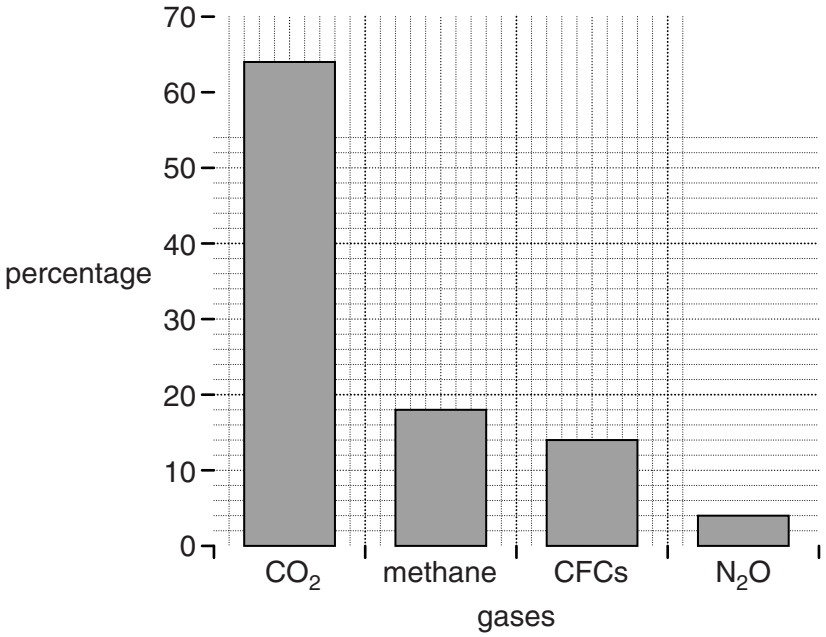
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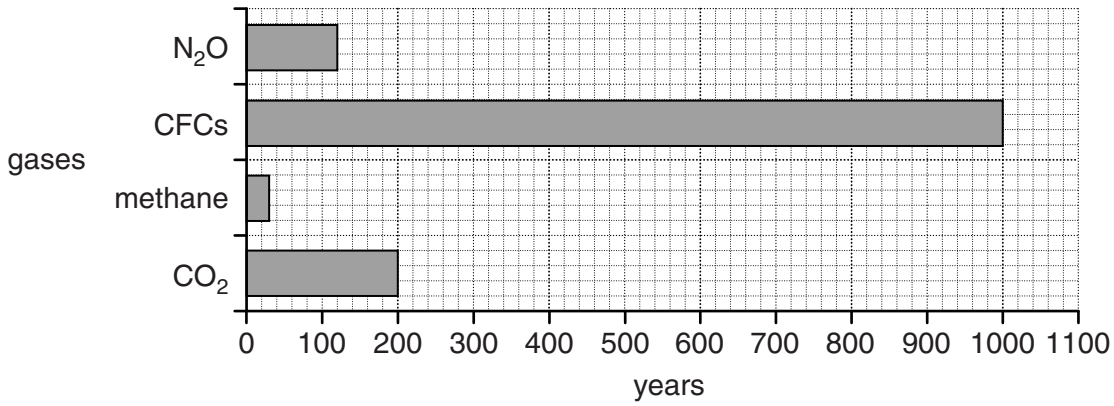
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(c) The graphs below show information from a textbook. Look at the percentage contributions of the four main greenhouse shows estimates from one source for the number of years th atmosphere.

percentage contributions to the greenhouse e



number of years gases remain in the atmosphere



(i) According to this data, how many times longer do CFCs remain in the atmosphere than CO_2?

.....[1]

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(ii) Use values from these graphs to explain why

1 CO_2 is considered to be the main greenhouse gas;

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2 the importance of CFCs to the greenhouse effect might be greater than their percentage contribution would suggest.

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[4]

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(d) (i) Some of the human sources of greenhouse gases in t
below.

factories burning fossil fuels **crop farming using ch**

car engines running on petrol

livestoc

refrigeration and air conditioning ***decomposition of wast***

exhaust emissions from old trucks and buses use of ae

Fill in the table to show sources for the different greenhouse gases. Use each source once only.

greenhouse gas	human source
CO_2	....
methane	....
CFCs	....
N_2O	....

[3]

(ii) Another human source of greenhouse gas emissions can be described as follows,

- results in the release of CO_2, some methane and N_2O,
- associated with change from natural to urban or agricultural land use.

Suggest the name of this source of greenhouse gas emissions.

source .....[1]

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(iii) Looking at all of these sources suggests that people in whether rich or poor, contribute to the release of greenh

How true is this statement? Explain your view as fully as

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.....[4]

(iv) CFCs are the main cause of the ozone hole in the upper atmosphere over Antarctica.

Explain why the hole in the ozone layer does not increase global warming.

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(v) Why are people concerned about damage to the ozone layer?

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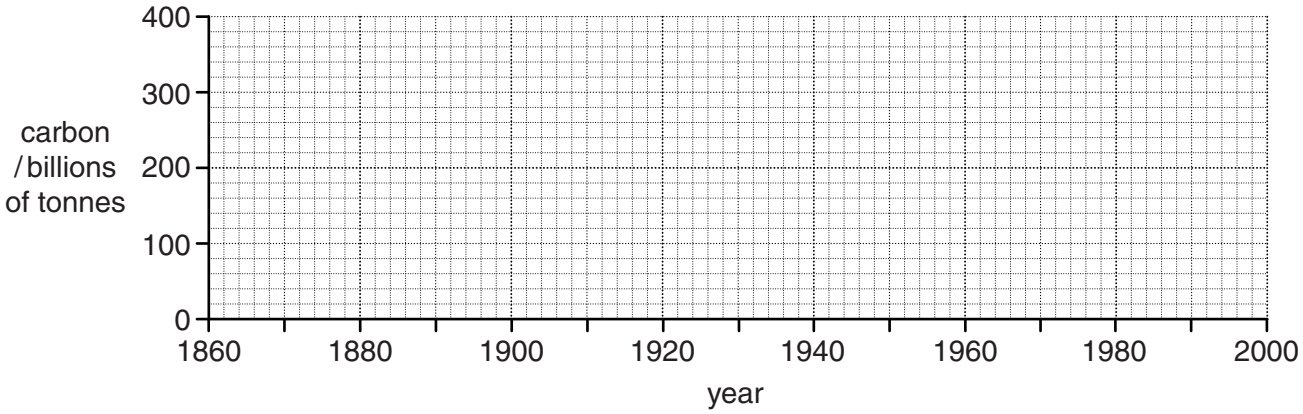
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(e) The table gives the amount of carbon emitted into the atm from 1860 to 2000.
These are cumulative totals (new amounts released each those already there).

year	carbon / billions of tonnes
1860	40
1880	50
1900	60
1920	90
1940	130
1960	180
1980	270
2000	380

(i) On the grid, draw a line graph to show the amount of carbon emitted from 1860 to 2000.



[3]

(ii) Describe the two most important things that the graph shows about carbon emissions from 1860 to 2000.

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.....[3]

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(iii) International attempts to limit carbon dioxide emission between countries in Kyoto in 1997, Copenhagen in 200 2010.
They have had only limited success.

Give reasons why international action to reduce carb been much slower than many environmental groups wou

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.....[5]

(iv) World sea levels are rising as a result of global climate change. They are 18 cm higher than 100 years ago.

Why are some countries more worried about rising sea levels than others? Refer to examples of countries when explaining your answer.

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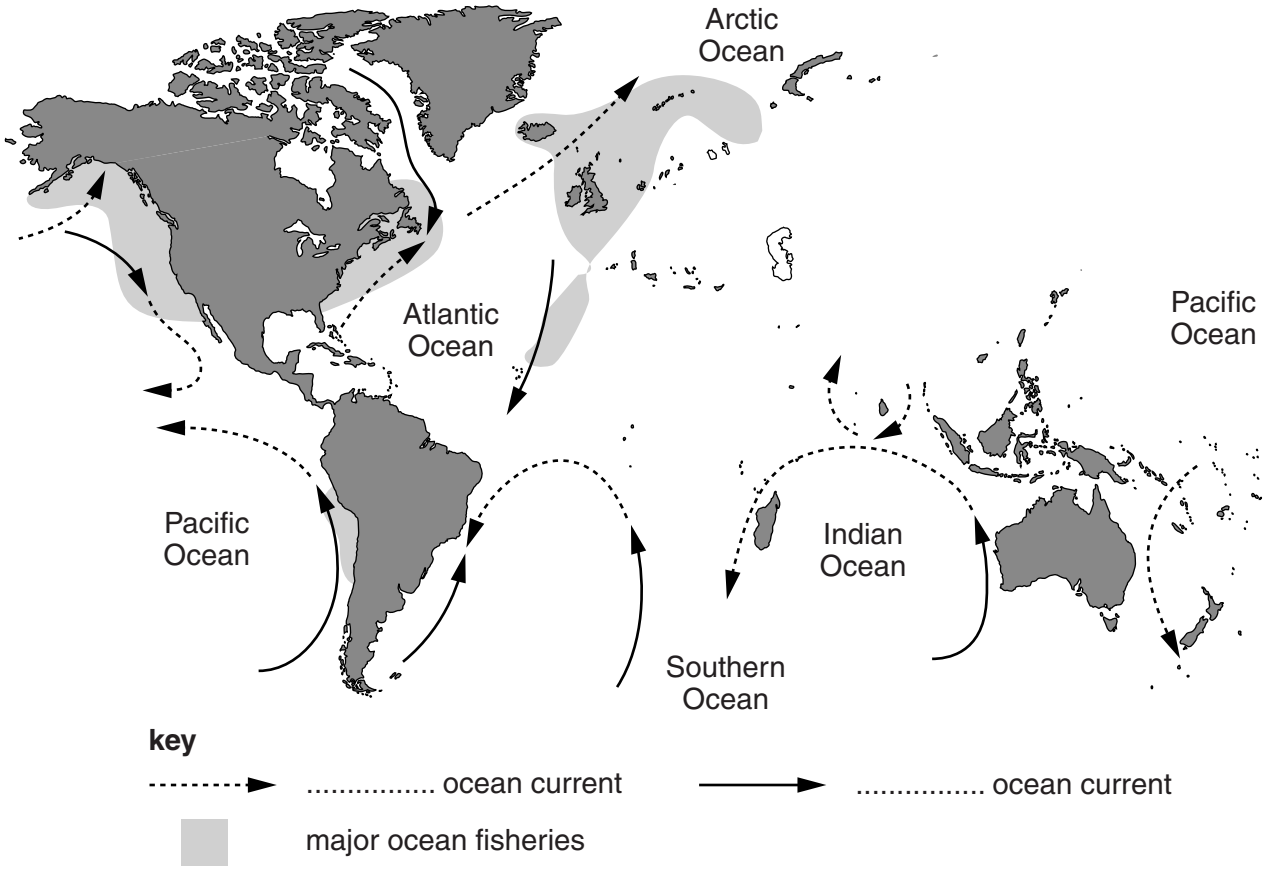
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2 **(a)** Look at the map showing where some of the world's ocean are the locations of the major ocean fisheries.



(i) Complete the key on the map for warm and cold ocean currents.

Write your answers in the spaces in the key. [1]

(ii) On the map, name **two** of the ocean currents shown, **one warm** current and **one cold** current.

Put the names of the two currents on the map. [2]

(iii) Use the letters **A** and **B** to mark on the map the two examples of major fisheries located where warm and cold ocean currents meet.

Put the letters **A** and **B** on the map. [1]

(iv) Explain why most of the world's major fisheries are found where ocean currents are present.

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.....[2]

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(v) The world map shows more and larger fisheries in the south of the equator. Suggest two other reasons (**not** this.

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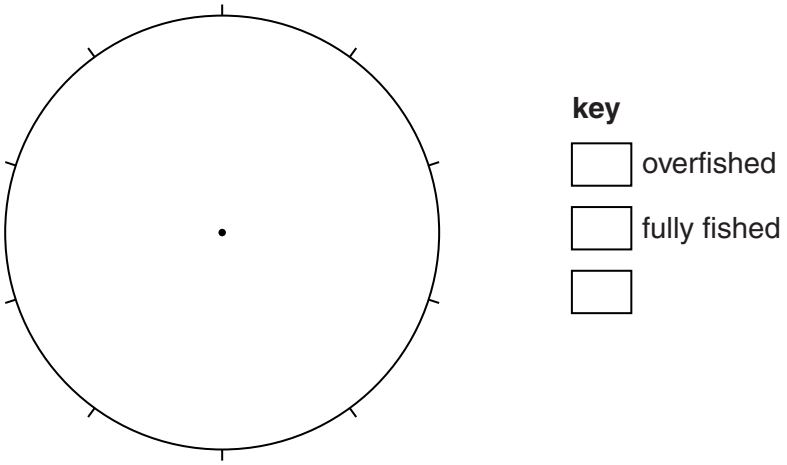
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(b) The table gives estimates about fishing stocks in the world's oceans in 2010.

fishing stocks	estimated percentage of global fishing stocks
overfished, leading to decreased fish numbers	30
fully fished, up to the limits of fish numbers	50
underfished, only lightly or moderately fished for numbers present	20

(i) Show the estimated percentage of global fishing stocks in a pie graph and complete the key.



[2]

(ii) How fully were people exploiting the world's ocean fisheries in 2010? Describe what the graph suggests about this.

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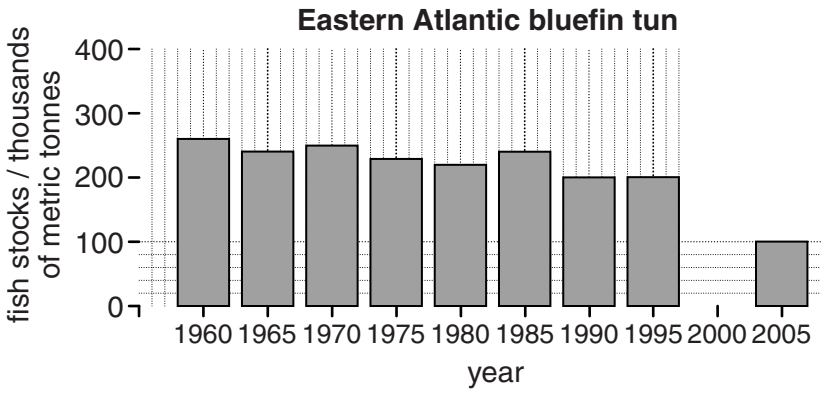
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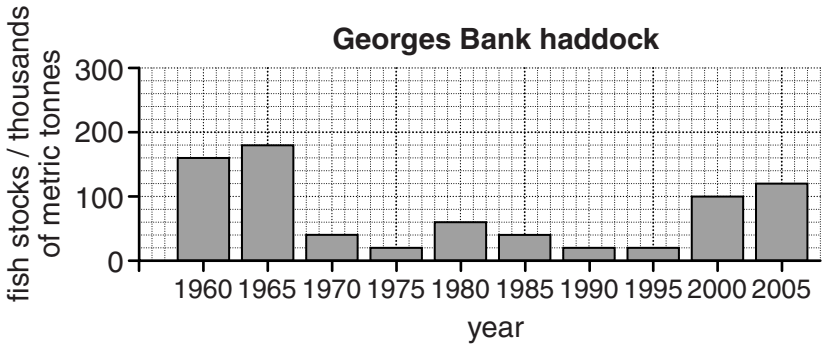
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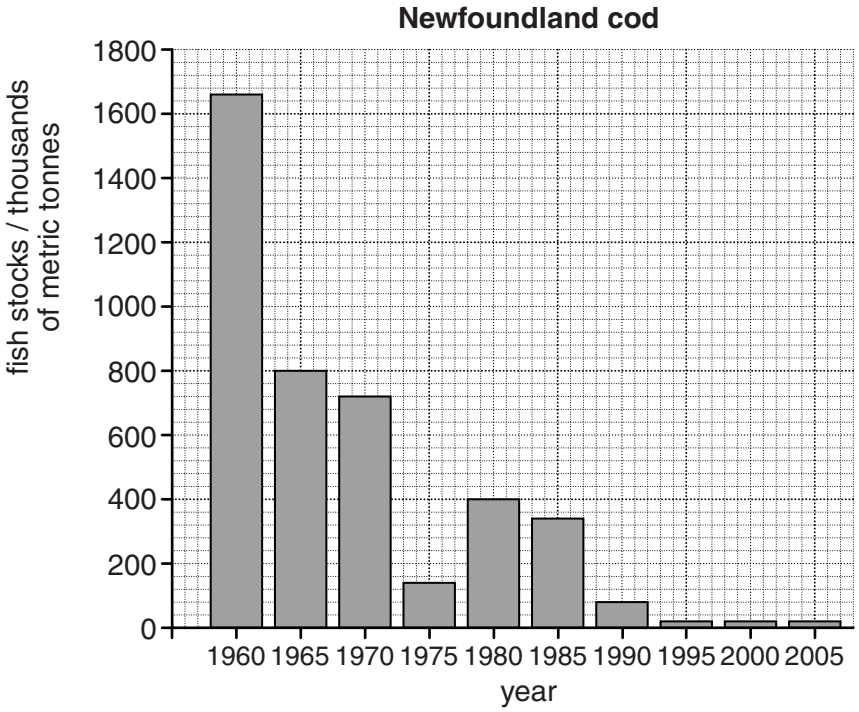
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(c) The graphs below show changes in fish stocks for three types
Ocean.
Locations of the three fisheries are shown on the map opposi







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(i) Describe what the graph of Newfoundland cod shows about fish stocks.

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.....[3]

(ii) The fishing grounds for Newfoundland cod were closed in 1990 and not re-opened. What has happened since 1990? Suggest reasons why this has happened.

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.....[3]

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(iii) For Georges Bank haddock, certain fishing areas were c
time, fishing days were restricted in other areas.
What has happened since 1994? Suggest reasons why

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(iv) Describe two **other** methods widely used for sustainable harvesting of ocean fisheries, (other than closing fishing grounds and restricting fishing days).

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(d) Look again at the graphs of North Atlantic fish stocks on page 12.

(i) What is happening to the fish stocks of Eastern Atlantic bluefin tuna?

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(ii) Suggest whether or not the tuna is being overfished. Explain your answer.

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.....[2]

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(e) Read this newspaper report from June 2011.

Save our fish stocks – eat more sardines

If you want to help save the world's fish stocks of cod and tuna, eat sardines and herrings instead.

Scientists have found that in the last 40 years there has been a big decline in large predator fish – cod, tuna and sharks, due to overfishing.

Numbers of small fish herrings, anchovies a more than doubled.

By removing the la species, small fishes plankton have been left to thrive and increase in numbers.

(i) Draw a diagram in the space below to show the ocean food chain that is being described in the newspaper report.

[3]

(ii) Suggest whether people eating more sardines could lead to an increase in some of the other fish stocks, as the newspaper report says? Explain your view.

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.....[2]

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(f) A further threat to life in the world's oceans is marine pollutio

(i) Name **one** example of:

- **either** a heavily polluted stretch of coastal waters
- **or** a major disaster from an oil spill or leak.

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(ii) For **only** the example that you have chosen:

- explain its causes and describe its impacts

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- comment on the success of attempts made to control its effects.

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.....[5]

[Total: 40]

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