UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

FISHERIES SCIENCE **5151/02**

Paper 2

October/November 2004

1 hour 30 minutes

Additional Materials: Answer Booklet/Paper

READ THESE INSTRUCTIONS FIRST

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.
Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **both** questions in **Section A**. Answer any **two** questions in **Section B**.
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 **4** printed pages.

UNIVERSITY of CAMBRIDGE
International Examinations

[Turn over

Section A

Answer **both** questions in this section.

1 Fig. 1.1 shows the mean concentration of carbon dioxide in the atmosphere against time.

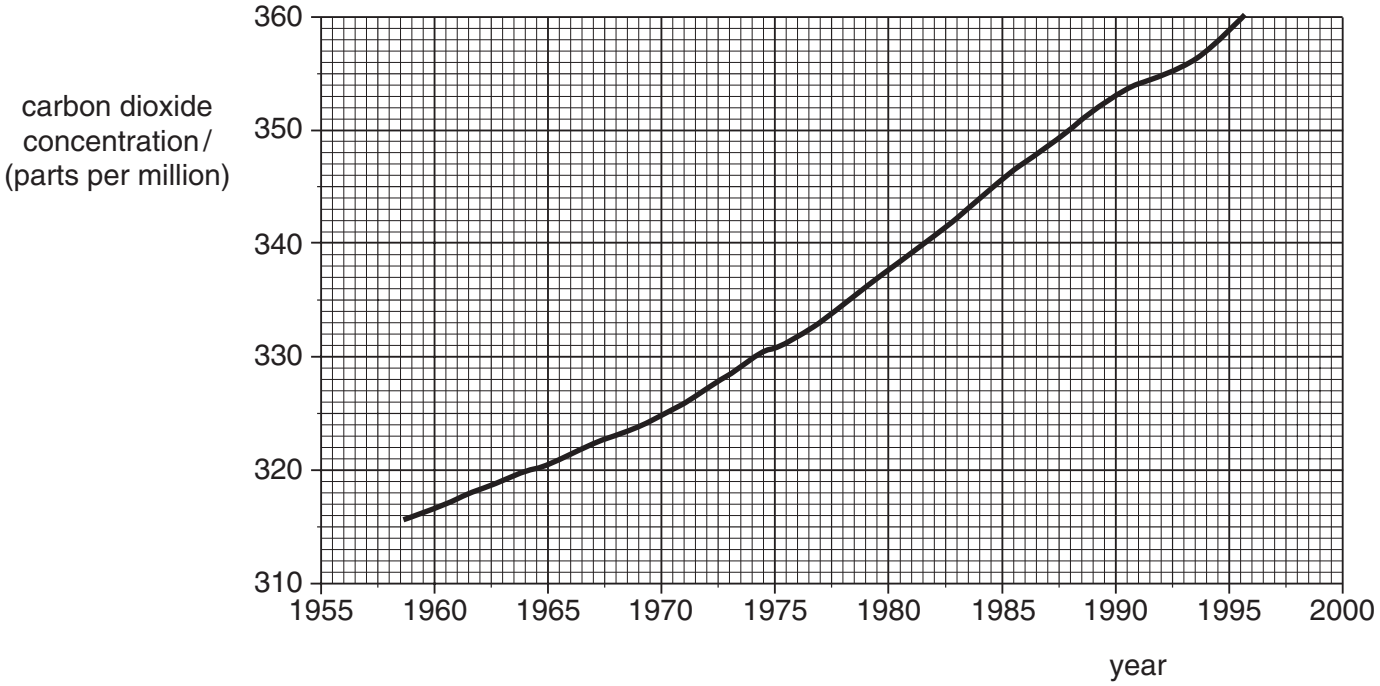

Fig. 1.1

[from *Ecology Principles and Applications, Chapman and Reiss, CUP*]

(a) Describe the trend in atmospheric carbon dioxide concentrations as shown in Fig. 1.1. [1]

(b) Using Fig. 1.1, find the carbon dioxide concentration in the atmosphere for

(i) 1960,

(ii) 1995.

[2]

(c) In 1935 the concentration of carbon dioxide in the atmosphere was 297.7 ppm and in 1945 it was 308.3 ppm. Calculate the increase in carbon dioxide concentration from 1935 to 1945.

[2]

(d) Explain why the concentration of carbon dioxide in the atmosphere is increasing. [3]

(e) Describe the possible effects of an increase in carbon dioxide concentration. [4]

(f) Explain how carbon dioxide is removed from the atmosphere. [3]

2 Most fish are streamlined to create the least resistance to movement through water.

Describe an experiment to determine the shape that creates the least resistance to movement through water.

Some of the equipment needed for this experiment includes

- a 1 m length of guttering, sealed at both ends,
- wooden shapes,
- a stopwatch,
- a plastic cup,
- drawing pins,
- a pulley,
- 2.5 m of string.

Include in your account

(a) details of your method, [8]

(b) a table in which you would record your results, [2]

(c) a sketch graph of the expected results for two shapes. [5]

[Turn over

Section B

Answer **two** questions from this section.

3 Describe how each of the following methods is used to preserve fish.

(a) salting and drying [5]

(b) smoking [5]

(c) canning [5]

4 **(a)** Explain what is meant by each of the following terms.

(i) *biomass* [2]

(ii) *food pyramid* [4]

(iii) *food chain* [5]

(b) Explain why there is a much greater biomass at the bottom of a food pyramid than at the top. [4]

5 Write an essay on the structure and life cycle of the giant clam *(Gaahaka)*. [15]

6 Write an essay on the contribution of fish, such as tuna, to the diet of humans. [15]