



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

FISHERIES SCIENCE

5151/02

Paper 2

October/November 2008

1 hour 30 minutes

Additional Materials: Answer Booklet/Paper
Graph 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.

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 **3** printed pages and **1** blank page.



Section A

Answer **both** questions in this section.

- 1 Surveys have been carried out to study the stocks of fish in the North Sea, off the coast of Britain. In one recent survey, a trawl net was used to catch fish. Some of the results of this survey are shown in Table 1.1.

Table 1.1

Species of fish	Catch rate (Number of fish caught per hour)
Lemon sole	107
Witch	48
Plaice	35
Cod	19
Haddock	5

[Data adapted from: *Fisheries Science Partnership – Final Report August 2005*]

- (a) Plot a bar chart of the data in Table 1.1. [7]
- (b) Calculate the total number of fish caught per hour. [1]
- (c) Name each of the following.
- (i) The species of fish with the highest catch rate. [1]
- (ii) The species of fish with the lowest catch rate. [1]
- (d) Lemon sole and plaice are examples of **demersal fish**. Explain what is meant by the term demersal fish. [3]
- (e) Suggest **two** environmental disadvantages of using a trawl net. [2]
- 2 (a) Draw and label a diagram to show a measuring board, as used to measure the length of a fish. [3]
- (b) Draw a diagram of a fish to show each of the following.
- (i) Total length.
- (ii) Fork length. [2]
- (c) Describe a method to find the age of a fish. [4]
- (d) Giving full experimental details, explain how you would find the mean density of a sample of ten dead fish. [6]

Section B

Answer **two** questions from this section.

- 3 (a) Write an account of the biology of the sea cucumber (*beche-de-mer*). In your answer, include details of the classification, anatomy and life cycle of the sea cucumber. [12]
- (b) Write notes on the importance of the sea cucumber as a fisheries resource in the Maldives. [3]
- 4 (a) Explain what is meant by the term seamanship. [3]
- (b) Give an account of the main types of knots and their uses on a boat. [12]
- 5 (a) Name the four main food groups and explain their importance in a healthy diet. [8]
- (b) Explain why fish muscle is an important part of a healthy diet. [7]
- 6 Write an essay on photosynthesis and energy flow in an ecosystem. [15]

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