

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

FISHERIES SCIENCE

5151/02

Paper 2

October/November 2005

Additional Materials: Answer Booklet/Paper
Graph Paper

1 hour 30 minutes

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.



Section A

Answer **both** questions in this section.

- 1 Fishing trips have been carried out to compare the catch of livebait during the day with the catch during the night, using lights. Fig 1.1 shows the results of one investigation, in which the catches of four species were compared during the day and at night.

Species	Percentage of catch	
	Day	Night
<i>Rehi</i>	59.0	49.6
<i>Hondeli</i>	30.0	38.0
<i>Miyaren</i>	3.0	12.4
<i>Muguraan</i>	8.0	0.0
Total	100.0	100.0

Fig. 1.1

[Adapted from R.C Anderson, Marine Research Section]

- (a) Plot a bar graph to show the percentage of the catch for each species caught during the day. [7]
- (b) Name the two most abundant species caught during the day. [2]
- (c) Compare the catches of *rehi* and *miyaren* during the day and at night. [2]
- (d) Suggest **two** reasons why *muguraan* were not caught during the night. [2]
- (e) Suggest **two** possible disadvantages to the Maldivian fishing industry of fishing for livebait at night time. [2]

- 2 (a) Draw a labelled diagram to show a simple hydrometer you could use to measure the density of a sample of water. [3]
- (b) The density of pure freshwater is 0.998 g per cm^3 and the mean density of sea water is 1.035 g per cm^3 . Explain how you would use this information to calibrate a hydrometer. [2]
- (c) Describe how you would use a hydrometer to investigate changes in the density of sea water in a shallow lagoon during the day.
- In your answer, include details of the method you would use, and a suitable table to record your results. [6]
- (d) Explain why the density of sea water in a shallow lagoon may change during the day. [2]
- (e) Explain why the temperature of water near the surface of a lagoon may be higher than the temperature of water at a greater depth. [2]

Section B

Answer **two** questions from this section.

- 3 In hot weather, freshly killed fish begin to spoil rapidly. Describe the causes and effects of spoilage in fish. [15]
- 4 (a) Write an account of the structure and operation of a marine diesel engine. [7]
(b) Describe four differences between a petrol engine and a diesel engine. [4]
(c) Explain why fishing boats usually have diesel engines, rather than petrol engines. [4]
- 5 (a) Write an account of the structure, growth and reproduction of a coral polyp. [10]
(b) Explain the importance of the conservation of coral reefs. [5]
- 6 Write an essay on the export of seafood products from the Maldives. [15]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

University of Cambridge International Examinations is part of the University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.