CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

FISHERIES SCIENCE **5151/02**

Paper 2

October/November 2003

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 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.

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Local Examinations Syndicate

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Section A

Answer **both** questions in this section.

1 **(a)** Fig. 1.1 gives information about the numbers of fishing vessels operating in the Pacific Ocean from 1990 to 1997. Study Fig. 1.1 and then answer the questions that follow.

year	purse seine	pole-and-line	longline	total
1990	189	245	496	
1991	209	227	599	1,035
1992	209	198	649	1,056
1993	202	159	1,150	1,511
1994	199	164	1,240	1,603
1995	186	173	1,221	1,580
1996	183	165	1,162	
1997	183	155	1,101	

Fig. 1.1

  (i) Calculate the total numbers of fishing vessels operating in the Pacific Ocean for the years 1990, 1996 and 1997. [3]

  (ii) Draw and label a bar chart to show the total numbers of fishing vessels operating in the Pacific Ocean for the years 1991–1995. [7]

(b) Fig. 1.2 shows the annual catch of different tuna species by three different fishing methods: purse seine, pole-and-line, and longline. Study Fig. 1.2 and then answer the questions that follow.
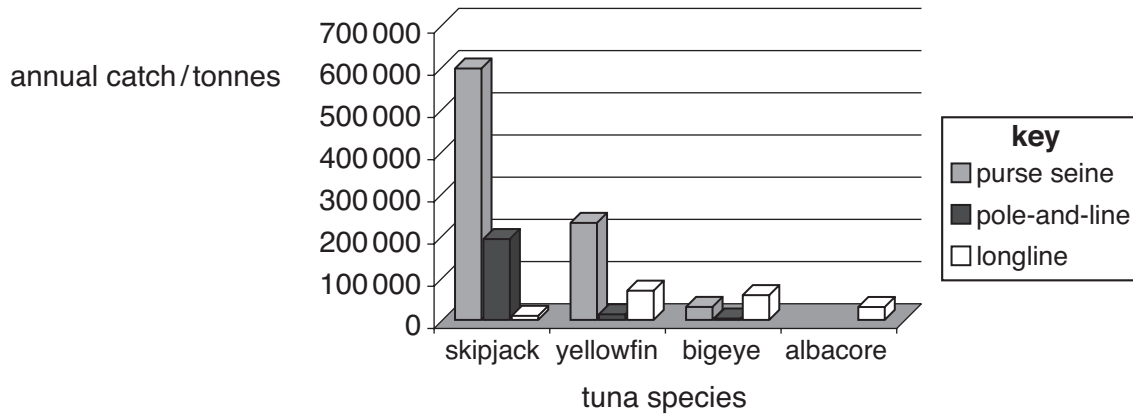

Fig. 1.2

  (i) Which fishing method produces the largest catch of skipjack tuna? [1]

  (ii) Which fishing method produces the largest catch of yellowfin tuna? [1]

  (iii) Are pole-and-line and purse seine fishing suitable methods for catching albacore? [1]

(c) Give **two** reasons why fish catches need to be monitored. [2]

2 **(a)** An object that floats in water is said to be buoyant. Describe an experiment to find the volume of water displaced by a small buoyant object. [5]

(b) Describe how you would find the density of an irregularly-shaped piece of metal. [3]

(c) Describe an experiment to compare the density of fresh water with the density of seawater. [3]

(d) The density of a piece of wood is found to be 0.8 g/cm^3 and the density of a piece of plasticine is found to be 1.9 g/cm^3. State whether each of these will float or sink in seawater. Give a reason for each of your answers. The density of seawater is 1.035 g/cm^3. [4]

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4

Section B

Answer **two** questions from this section.

3 Write an essay on the fisheries resources of the Maldives. [15]

4 (a) Describe the internal structure of the Earth. Include a diagram showing the core, mantle and crust. [7]

(b) Explain what is meant by *plate tectonic theory*. Include sketches in your answer to illustrate this theory. [8]

5 (a) List **four** food groups and describe the functions of each group. [8]

(b) Describe the nutritional value of fish as a food source. [7]

6 Fishing gears may be classified into two categories, active and passive gears.

(a) Give **one** difference between active and passive gear. [1]

(b) All fishing gears can be grouped into the following subcategories: nets, traps, hooks and lines, others (such as weights and ropes).
Choose **one** example of a passive gear and **one** example of an active gear. Write a description of each. Include drawings to illustrate your answer. [6]

(c) Make a sketch of each of the following and describe how they are used during pole-and-line fishing.

(i) a bait scoop (*envashi*)

(ii) a *fenfulhafi*

[4]

(d) Write a short description of the job of each of the following on a pole-and-line fishing trip.

(i) chummer (*enkeyolhu*)

(ii) head fisherman (*keyolhu*)

[4]