



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

DESIGN AND TECHNOLOGY

0445/11

Paper 1 Product Design

October/November 2018

1 hour 15 minutes

Candidates answer on the pre-printed A3 Answer Sheets.

Additional Materials: Standard drawing equipment and coloured pencils.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces on **both** printed Answer Sheets.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

Answer **one** question.

Write/draw your answers in the spaces provided on the Answer Sheets.

You may use a calculator.

At the end of the examination, fasten all your work securely together.

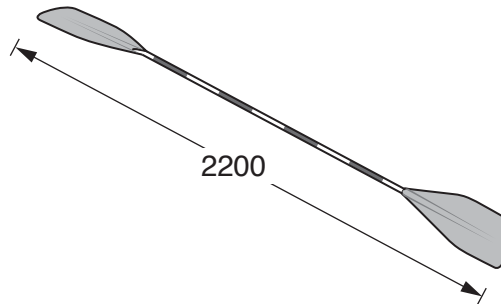
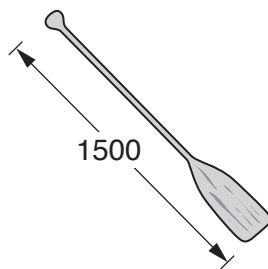
The number of marks is given in brackets [] at the end of each question or part question.

The total of the marks for this paper is 50.

This document consists of 4 printed pages and 2 A3 Inserts.

Answer **one** question only on the A3 pre-printed answer sheets provided.

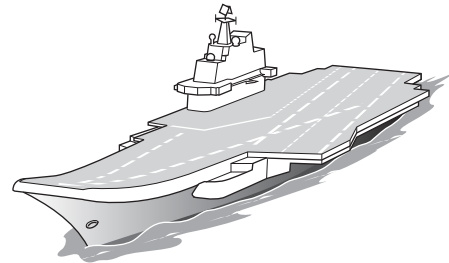
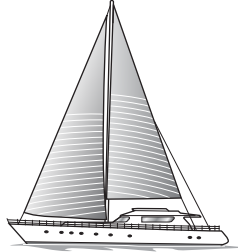
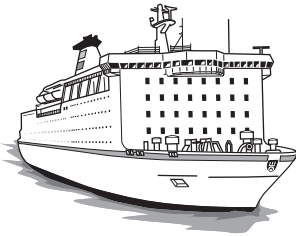
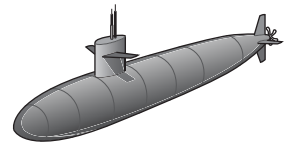
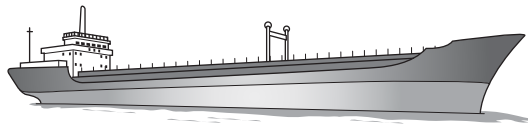
- 1 Canoeing is a popular pastime for many people.



Design a rack that will hold six double paddles and six single paddles. The rack should be easy to transport from a storage hut to the edge of the water.

- (a) List **four** additional points about the function of such a rack that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods by which large items can be moved easily over flat surfaces. [4]
- (c) Develop and sketch **three** ideas for the rack. [12]
- (d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and important dimensions. [12]
- (f) Suggest **two** suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution. [6]

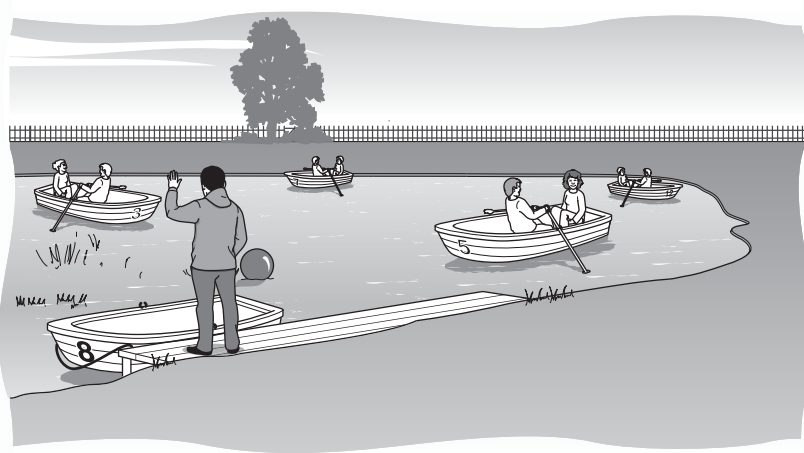
2 Breakfast cereals are often promoted by offering free gifts that appeal to children.



Design a model of any type of boat/ship that can be packed flat inside a cereal packet and assembled by a child.

- (a) List **four** additional points about the function of such a model that you consider to be important. [4]
- (b) Use sketches and notes to show **two** ways by which paper or card can be made waterproof. [4]
- (c) Develop and sketch **three** ideas for the model. [12]
- (d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and important dimensions. [12]
- (f) Suggest **two** suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution. [6]

- 3 On park lakes, people are able to hire rowing boats for a period of time. When the time has ended, they need to be informed that they should return the boat.



Design a system of informing rowers when their time has ended and they need to return the boat to the owner. The boat owner should not have to use his voice.

- (a) List **four** additional points about the function of such a system that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods of display that could be seen from a distance. [4]
- (c) Develop and sketch **three** ideas for the system. [12]
- (d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and important dimensions. [12]
- (f) Suggest **two** suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution. [6]

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