



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

DESIGN AND TECHNOLOGY

0445/12

Paper 1 Product Design

October/November 2016

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.

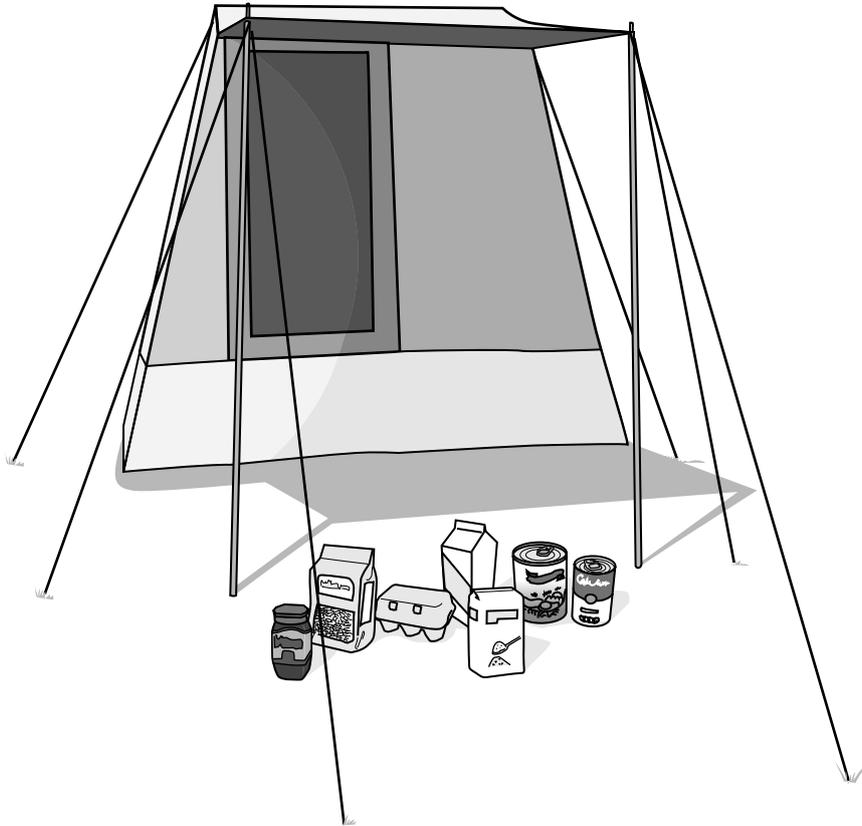
The total of the marks for this paper is 50.



This document consists of **4** printed A4 pages and **2** A3 Inserts.

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

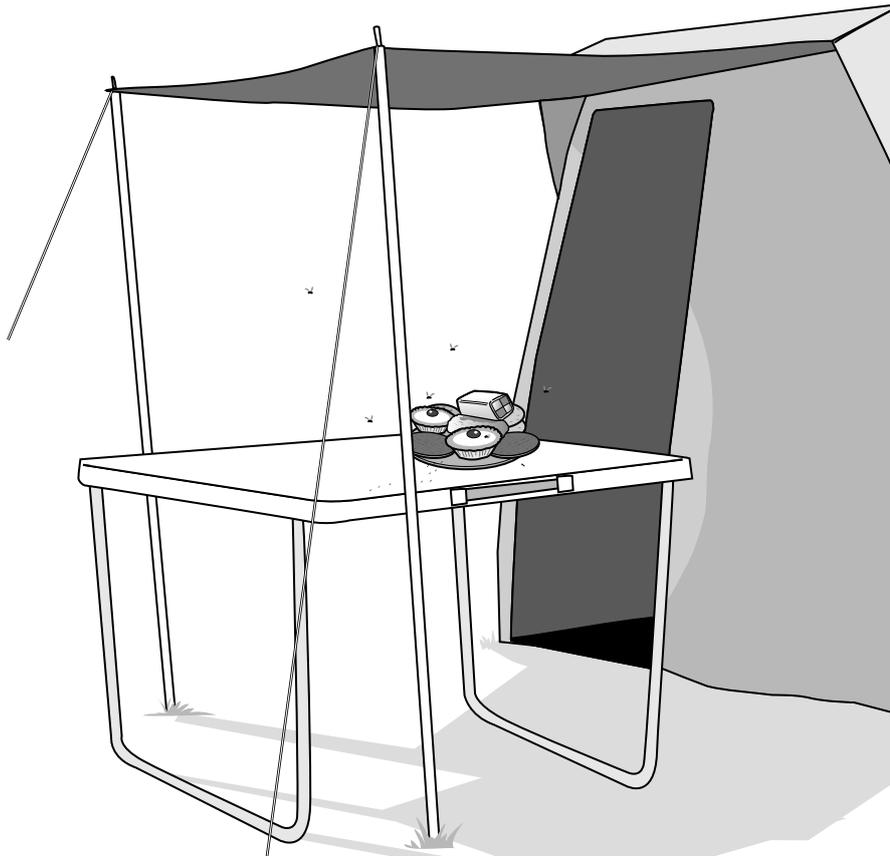
- 1 A number of food items need to be stored and carried when camping.



Design a unit that will allow food items to be stored and carried.

- (a) List **four** additional points about the function of such a unit that you consider to be important. [4]
- (b) Select **two** different sheet materials and, for each, use sketches and notes to show a method of joining them at right angles. [4]
- (c) Develop and sketch **three** ideas for the unit. [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 Food items need to be protected from insects and small animals when camping.



Design a disposable, flat-pack cover for such a situation.
The cover should allow the food items to be viewed when in use.

- (a) List **four** additional points about the function of such a cover that you consider to be important. [4]
- (b) Use sketches and notes to show **two** different methods of making cardboard waterproof. [4]
- (c) Develop and sketch **three** ideas for the cover. [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 Temporary shelving is useful when camping.



Design a collapsible shelving unit that has a quick assembly feature.

- (a) List **four** additional points about the function of such a shelving unit that you consider to be important. [4]
- (b) Use sketches and notes to show **two** different methods by which such a shelving unit could be used on uneven ground. [4]
- (c) Develop and sketch **three** ideas for the shelving unit. [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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