

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

DESIGN AND TECHNOLOGY
DESIGN AND COMMUNICATION

0445/01

0446/01

Paper 1 Design

Specimen Paper for examination from 2007

1 hour 15 minutes

Candidates answer on the pre-printed A3 answer sheets.

Additional Materials: Standard Drawing Equipment
A3 pre-printed answer sheets (2)

To be taken together with the optional paper for which you have been entered in one session of 2 hours 15 minutes.

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 a soft pencil for any diagrams, graphs, or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

There are three questions in this paper.
Answer **one** question.

The total of the marks for this paper is 50.
At the end of the examination, tie your answer sheets together.
The number of marks is given in brackets [] at the end of each question **or** part question.
You may use a calculator.

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



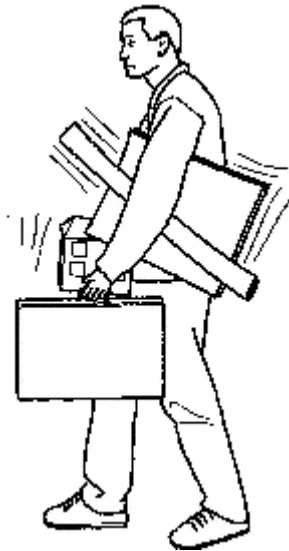
Answer **one** question only on the A3 pre-printed answer sheets provided.

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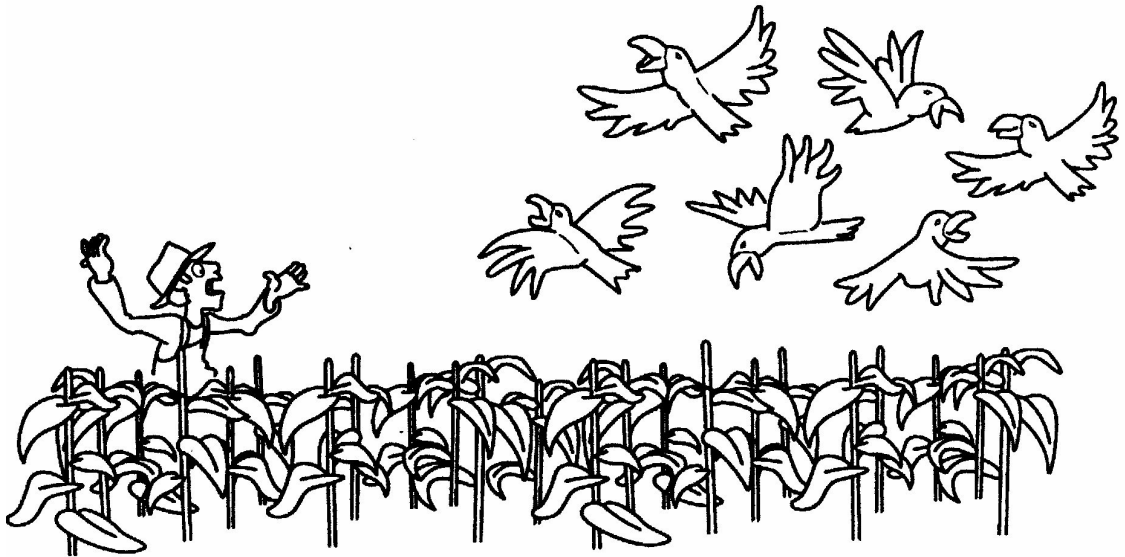
Barbecues in the countryside on warm evenings are popular in many countries. Because these are often away from the house, seating is not available. Lightweight folding seats for this purpose would be very useful.

- (a) List **four** points about the function of such seats that you consider to be important. [4]
- (b) Draw **two** different types of pivot or sliding mechanism that could be used in the design of the folding seats. [4]
- (c) Develop and sketch ideas for the seats. [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 your problem. Include construction details and major dimensions. [12]
- (f) Suggest suitable materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution in the school workshop. [6]



Design and Technology projects include the production of design drawing sheets, models and mock-ups. It is often necessary to carry these to and from school so that designing can be continued as homework. A lightweight carrier for these items and other drawing equipment would be helpful.

- (a) List **four** points about the function of such a carrier that you consider to be important. [4]
- (b) Name and draw **two** pieces of drawing equipment that might be carried to and from school. [4]
- (c) Develop and sketch ideas for the carrier. [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 your problem. Include construction details and major dimensions. [12]
- (f) Suggest suitable materials for your solution and give reasons for your choice. [4]
- (g) Design a logo for the carrier that represents your Design and Technology coursework. Include the method used to put the logo on the carrier. [6]



Birds can be a nuisance for farmers as they often destroy crops before they are ready to be harvested. A device is required that will not harm the birds but will scare them off before the crops are destroyed. The device must create movement or noise and must operate in open fields where there is no mains electricity supply.

- (a) List **four** points about the function of such a device that you consider to be important. [4]
- (b) State **four** possible ways of providing power to such a device in a remote field. [4]
- (c) Develop and sketch ideas for the device. [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 your problem. Include construction details and major dimensions. [12]
- (f) Suggest suitable materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution in the school workshop. [6]

(a) Answer **part (a)** here. [4]

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(c) Develop and sketch your ideas here. [12]

(b) Answer **part (b)** here. [4]

continued overleaf

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Answer Sheet 1 of 2
Paper 1 Design

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Answer sheet 1 of 2.
Write your Centre number, candidate number and name in the spaces provided on this sheet and sheet 2.
Write the number of the question you have answered in the space provided.
Sufficient space is provided for your answers on the two answer sheets so there is no need to use other sheets.

Centre Number
Candidate's Number
Name
Question Number

For Examiner's
Use

part (c) continued.

(d) Evaluate your ideas here. [6]

Choose one idea to develop more fully. Justify your choice. [2]

(e) Draw the full solution to the problem here.
Include construction details and major dimensions. [12]

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Answer Sheet 2 of 2
Paper 1 Design

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Answer sheet 2 of 2.
Write your Centre number, candidate number and name in the spaces provided on this sheet and sheet 1.
Write the number of the question you have answered in the space provided.
Sufficient space is provided for your answers on the two answer sheets so there is no need to use other sheets.

Centre Number

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Name

Question Number

For Examiner's
Use

(f) Answer **part (f)** here. [4]

There is no need to write or draw here unless you wish to continue another part of the question.

(g) Answer **part (g)** here. [6]