

Centre Number	Candidate Number	Name
---------------	------------------	------

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

**DESIGN AND TECHNOLOGY** **0445/03**

Paper 3 Realisation May/June 2004

**1 hour**

Candidates answer on the Question Paper.  
No Additional Materials are required.

**To be taken together with Paper 1 in one session of 2 hours 45 minutes.**

**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name on all the work you hand in.  
Write in dark blue or black pen in the spaces provided on the Question 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 **two** questions.  
The number of marks is given in brackets [ ] at the end of each question or part question.

If you have been given a label, look at the details. If any details are incorrect or missing, please fill in your correct details in the space given at the top of this page.

Stick your personal label here, if provided.

For Examiner's Use	
1	
2	
3	
4	
<b>TOTAL</b>	

1 Fig. 1 shows a desk-top container used for storing address cards.

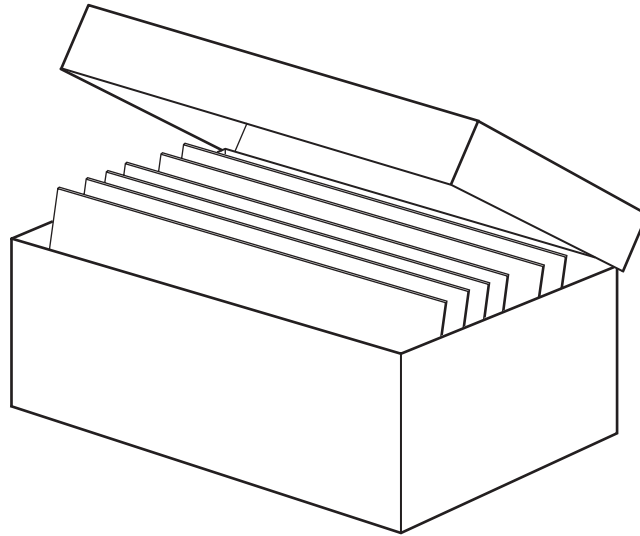


Fig. 1

(a) The container must hold cards, each measuring  $127 \times 76$  mm. List **three** more important points which should be included in the specification.

- 1. .... [1]
- 2. .... [1]
- 3. .... [1]

(b) Name a suitable material from which the container could be made.

..... [2]

(c) In the space below, use notes and sketches to show clearly all construction details of the container using the material chosen in (b).

[8]

(d) List **six** stages, in the correct order, for making the container in your chosen material.

- 1. .... [1]
- 2. .... [1]
- 3. .... [1]
- 4. .... [1]
- 5. .... [1]
- 6. .... [1]

(e) When making the container, the diagonals are measured.

Give the reason for this.

.....  
..... [2]

(f) Use notes and sketches to show how the lid could be hinged.

[4]

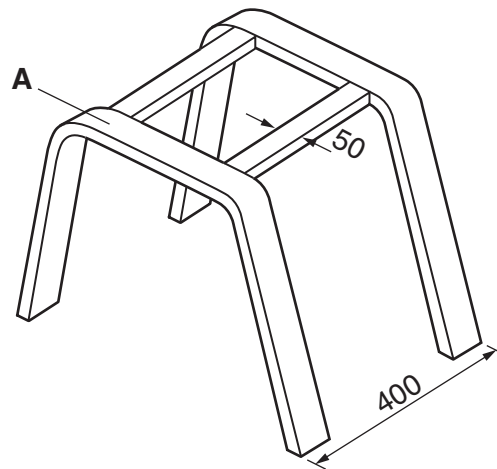
(g) Give **one** disadvantage of using a hinged lid rather than a loose lid.

.....  
..... [2]

(h) Give a full and detailed description of how the cards can be organised in order to find a particular card.

.....  
.....  
.....  
..... [3]

- 2 Fig. 2 shows the underframe for a small stool.



**Fig. 2**

- (a) Using notes and sketches, describe what is meant by laminated construction.

[5]

- (b) (i) Using notes and sketches, show fully the construction of the joint at **A**.

[5]

(ii) List **three** tools for marking out the joint used at **A**.

1. ....

2. ....

3. ....

[3]

(iii) List **three** tools used for cutting the joint at **A**.

1. ....

2. ....

3. ....

[3]

(c) Complete the cutting list.

Quantity	Material	Length	Width	Thickness	Description
20 off	Pine	1000 mm	50 mm	2 mm	laminated for legs
					cross rails

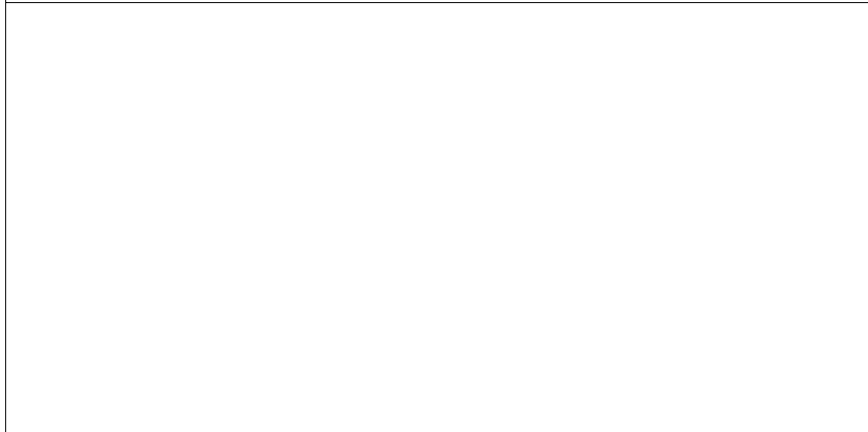
[5]

- (d) Using the boxes provided, describe with notes and sketches the sequence you would use to assemble the laminated frames and cross rails.

1.



2.

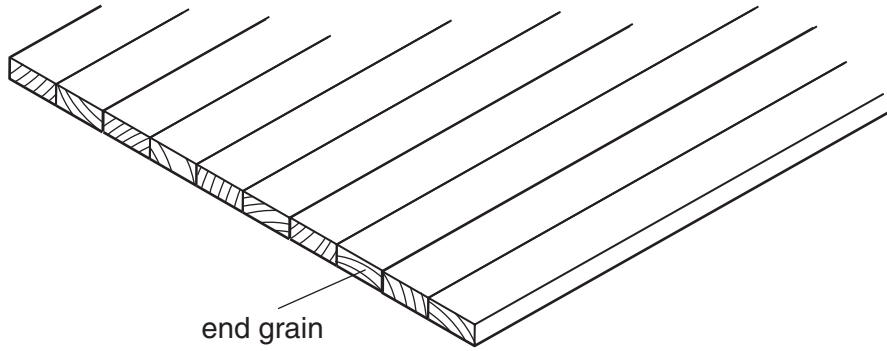


3.



[6]

- (e) A wooden top is to be fitted to the stool. Fig. 3 shows the end grain for the top. Explain why the material is arranged in this way.



**Fig. 3**

.....

.....

.....

..... [3]



3 Fig. 4 shows a child's toy box.

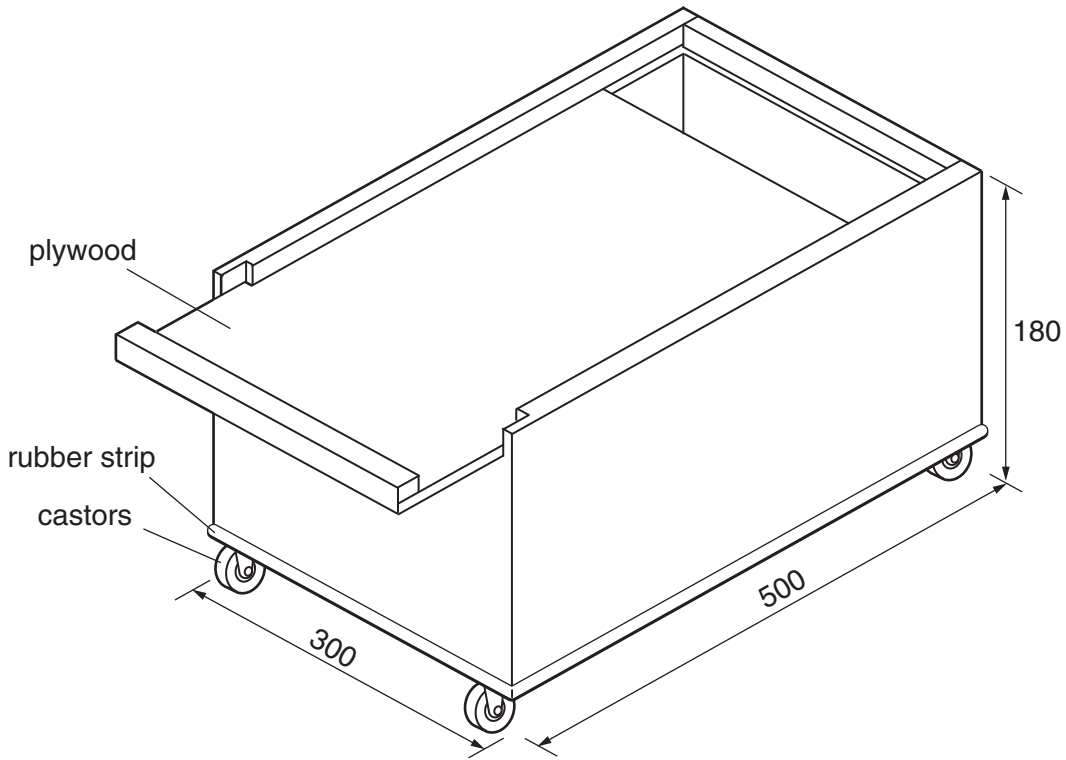


Fig. 4

(a) Explain why the following material/components are to be used in the construction of the box.

(i) a set of castors .....

.....

..... [2]

(ii) plywood for the sliding lid .....

.....

..... [2]

(iii) hardwood for the body of the box .....

.....

..... [2]

(iv) a thick rubber strip .....

..... [2]

**(b)** Using notes and sketches, and naming all tools, describe how to:

**(i)** fix the castors in position;

[6]

**(ii)** make the joint used at the corners of the box;

[6]

- (iii) cut the groove so that the lid slides in and out.

[6]

- (c) Using notes and sketches, describe a design improvement that makes it easier for a child to pull or push the box along.

[4]

- 4 The outline of a cover to protect an electric socket is shown in Fig. 5. It is made from metal, and is to be fixed to the outside of a house.

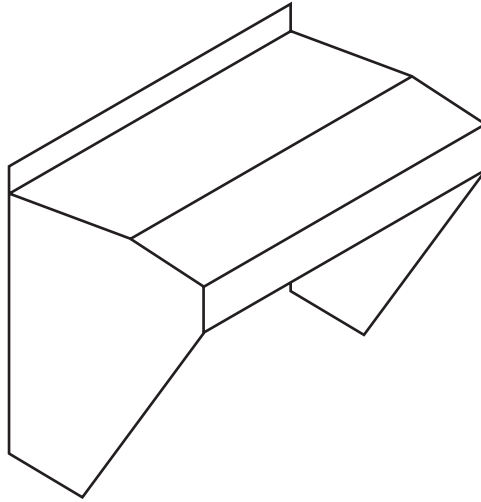


Fig. 5

- (a) (i) Select a suitable metal for the cover.

..... [1]

- (ii) Give **one** reason for your choice.

.....  
..... [1]

- (b) The main body of the cover is to be formed from one piece of the metal you have chosen.

Using notes and sketches, describe how:

- (i) the sheet metal is marked out to form the shape of the cover;

[5]

(ii) the marked shape is cut out;

[5]

(iii) the shape is formed into the cover;

[5]

(iv) the formed shape is joined to give a secure water tight cover.

[5]

(c) Show **two** ways of making any sharp edges of the cover safe.

1.

[4]

2.

[4]

