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| Centre Number | Candidate Number | Name |
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CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

DESIGN AND TECHNOLOGY

0445/03

Paper 3 Realisation

October/November 2003

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 any **two** questions.
The number of marks is given in brackets [] at the end of each question or part question.
You may use a calculator.

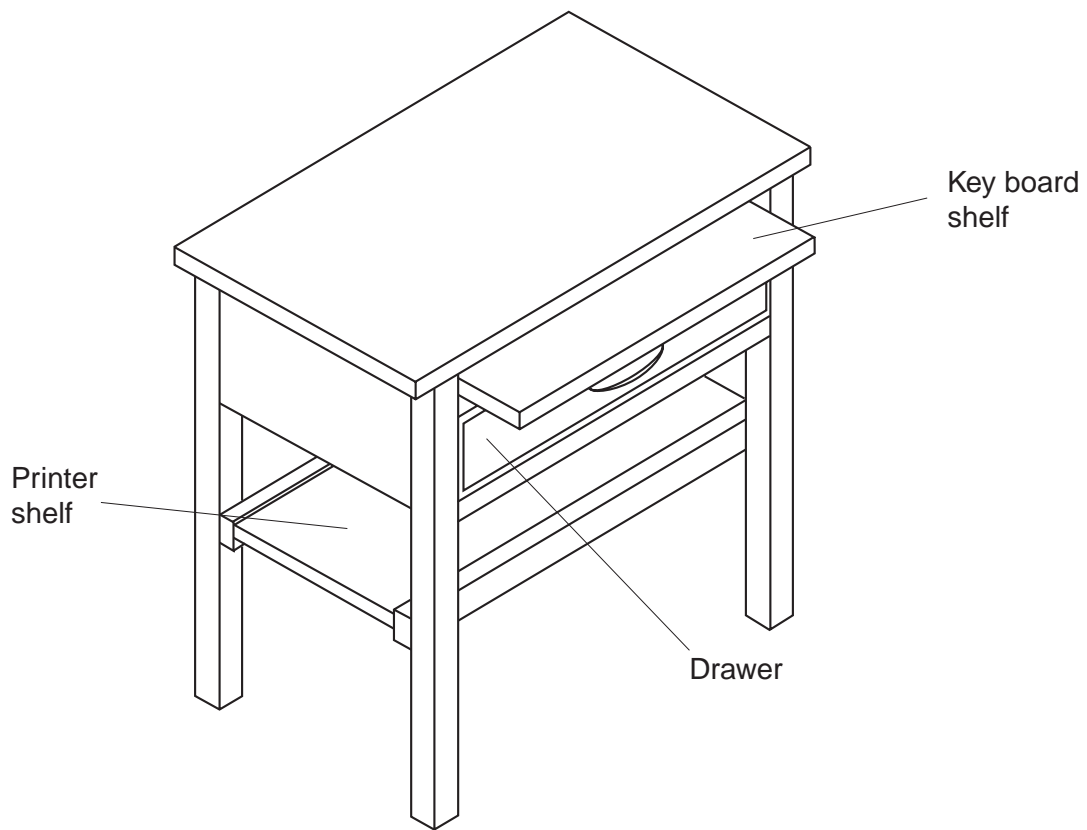
If you have been given a label, look at the details. If any details are incorrect or missing, please fill in your correct details in the space given at the top of this page.

Stick your personal label here, if provided.

| For Examiner's Use | |
|--------------------|--|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| TOTAL | |

This document consists of **15** printed pages and **1** blank page.

1 An outline of a computer workstation suitable for a child is shown below.



(a) Give **three** design requirement criteria for a computer workstation.

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

(b) Name a suitable material for the frame of the workstation.

.....

Give the reason for your choice.

.....

..... [2]

(c) Describe with the use of notes and sketches:

(i) a suitable method to stop the key board shelf pulling completely out of its slot;

[5]

(ii) how the printer shelf, on which the printer stands, could be made to slide easily and safely.

[5]

4

(iii) how the workstation is prepared and a finish applied.

.....

.....

.....

.....

.....

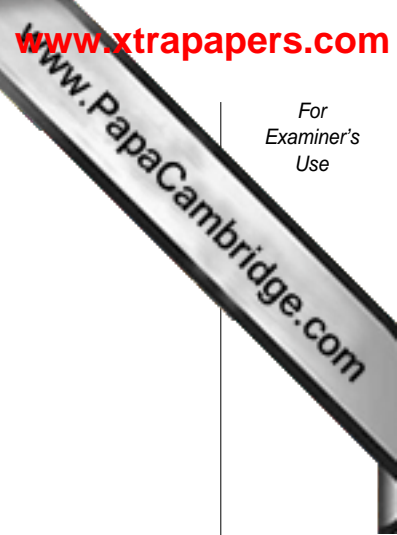
..... [5]

(d) Using notes and sketches show how:

(i) the side of the drawer could be fixed to the drawer front;

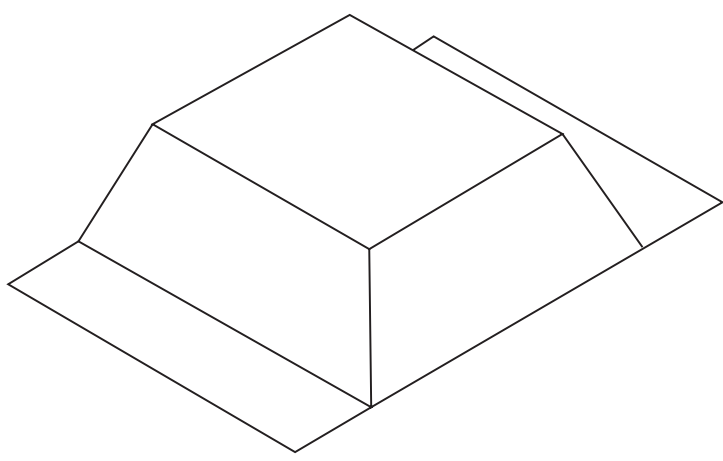
[5]

(ii) the top could be fixed to the frame of the workstation.



[5]

2 The outline of an alarm box made from metal sheet, to be fixed to the outside of a ho shown.



(a) (i) Select a suitable metal sheet for the alarm box.

.....

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

.....

.....

[2]

(b) The main body of the alarm box is to be formed from the metal sheet you have chosen.

Using notes and sketches, describe how the:

(i) metal sheet is marked out to form the shape of the alarm box;

7

(ii) marked shape is cut out;

[5]

(iii) cut out shape is formed into the alarm box;

[5]

8

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

[5]

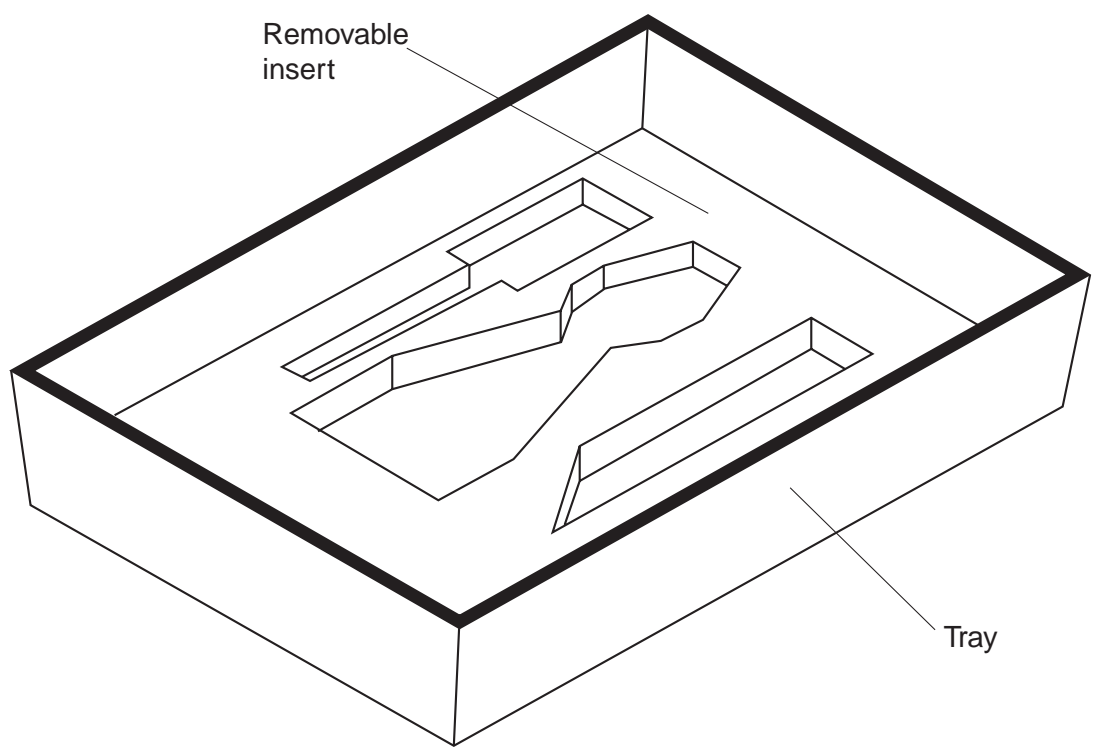
(c) Show **two** methods of making any sharp edges safe.

1.

[4]

2.

3 Shown below is a tray for storing a set of tools. A removable insert to hold the tools is shown in the tray.



(a) Name a suitable **plastic** for your tray and give **one** reason for your choice.

Name

Reason

..... [2]

(b) Using notes and sketches and naming all tools and aids, describe how the tray be shaped from a single sheet of plastic.

[8]

(c) Identify **four** important features you would need to take into account when designing a former on which to produce the tray. Give a reason for each.

- 1. feature
- reason
- 2. feature
- reason
- 3. feature
- reason
- 4. feature
- reason

[8]

(d) Describe how to finish the tray after it has been formed.

.....

.....

.....

.....

.....

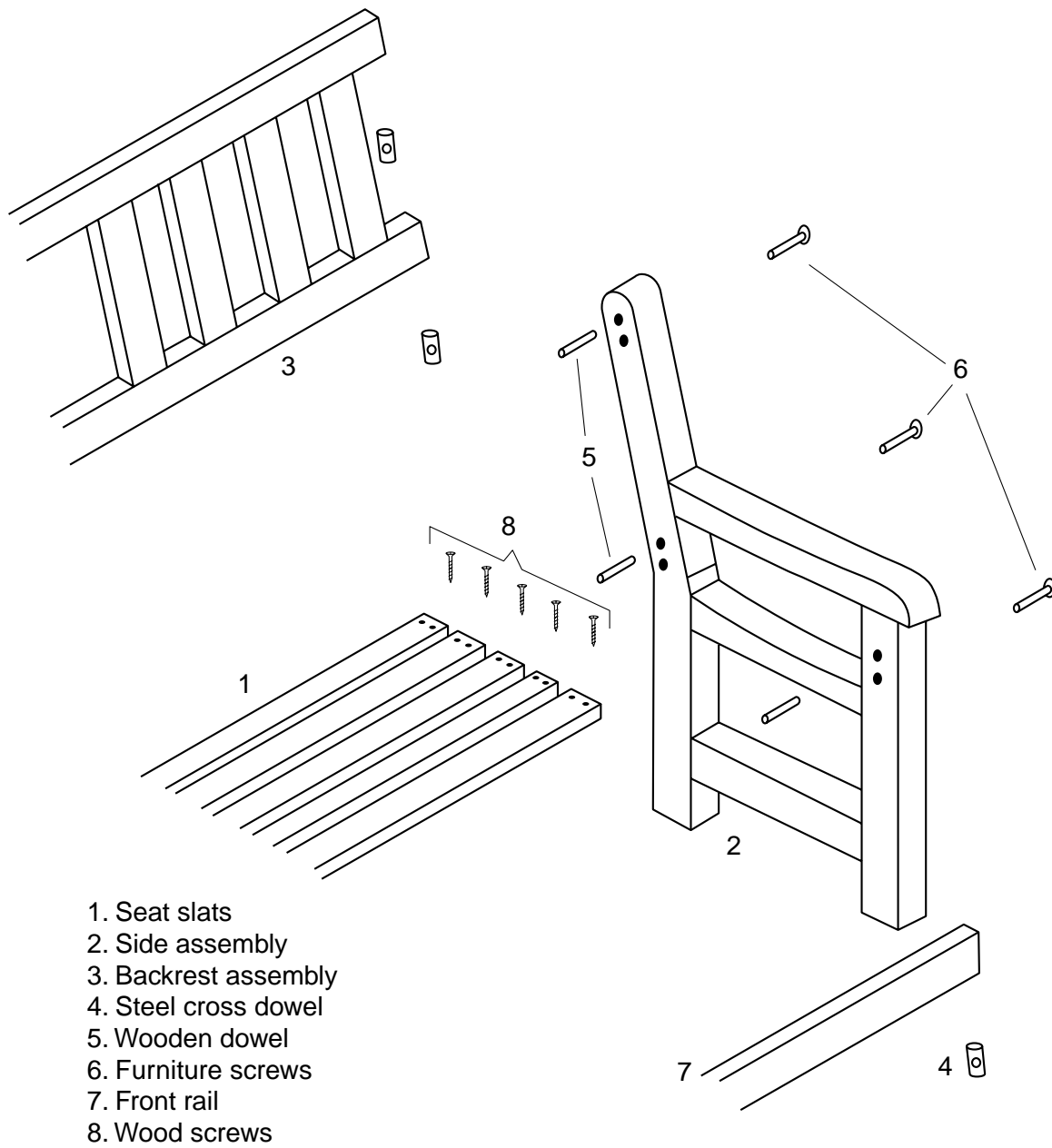
.....

..... [6]

(e) State a non-plastic material and describe briefly using notes and sketches, how you would produce an insert in which to place the tools to keep them separate when in the tray.

[6]

4 Assembly details for a ready made flat pack garden seat are shown.

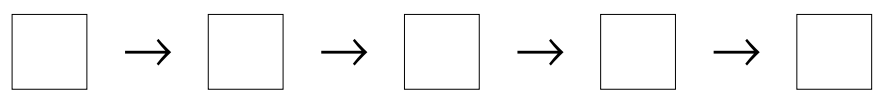


- 1. Seat slats
- 2. Side assembly
- 3. Backrest assembly
- 4. Steel cross dowel
- 5. Wooden dowel
- 6. Furniture screws
- 7. Front rail
- 8. Wood screws

Note: Side assembly and backrest assembly come assembled ready for use.

(a) From the given list of instructions complete the assembly flow diagram by putting appropriate number in each box.

1. Securely fix seat slats to side assemblies as shown with the wood screws provided.
2. Paint or seal the bench components with a good quality external coating.
3. Fix side assemblies to backrest assembly, and front rail as shown, using the furniture screws and steel cross dowels.
4. Place wooden dowels into side assemblies as shown.
5. Using a suitable tool securely tighten the furniture screws.



[5]

(b) List **four** tools that would be needed to carry out the assembly.

1.
2.
3.
4.

[4]

(c) Using notes and sketches, give **two** improvements which could be undertaken to further strengthen the seat.

1.

[4]

2.

[4]

(d) Name **two** types of woodwork joint that could be used on the backrest assembly.

1.

2. [3]

(e) Using sketches and notes, name all tools and describe:

(i) marking out **one** of the joints you have named in part (d);

[4]

(ii) cutting and fitting the joint.

[5]

(f) State the type of glue used.

..... [1]

