

Candidate Name	Centre Number	Candidate Number
		0



GCSE

141/02

DESIGN AND TECHNOLOGY

PAPER 2

FOCUS AREA: RESISTANT MATERIALS

TECHNOLOGY

Foundation Tier

A.M. MONDAY, 2 June 2008

1½ hours

	Leave Blank
Question 1	
Question 2	
Question 3	
Question 4	
Question 5	
TOTAL MARK	

ADDITIONAL MATERIALS

You will need basic drawing equipment and coloured pencils for this examination.

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. Where the space is not sufficient for your answer, continue the answer at the back of the book, taking care to number the continuation correctly.

INFORMATION FOR CANDIDATES

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

Answer all questions in the spaces provided.





1. (a) From the list below, **select** the correct name for each of the following saws and give a specific use for each saw. [8]

Coping saw

Jigsaw

Hacksaw

Tenon saw

<i>Saw</i>	<i>Name</i>	<i>Use</i>
	<p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
	<p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
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	<p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

- (b) The photograph below shows a fresh fruit product sold in a supermarket. The tray and the fork are made from plastic.



Blow moulding

Vacuum forming

Injection moulding

From the list above, **select the correct process** used to make:

- (i) The **plastic tray** [1]
- (ii) The **plastic fork** [1]
- (iii) A **mould** is needed to make the tray. **Describe two** features that the mould must have if it is to work properly.

Feature 1:

..... [2]

Feature 2:

..... [2]

- (iv) From the list below, **underline the two** most suitable materials that could be used to make the tray.

PET

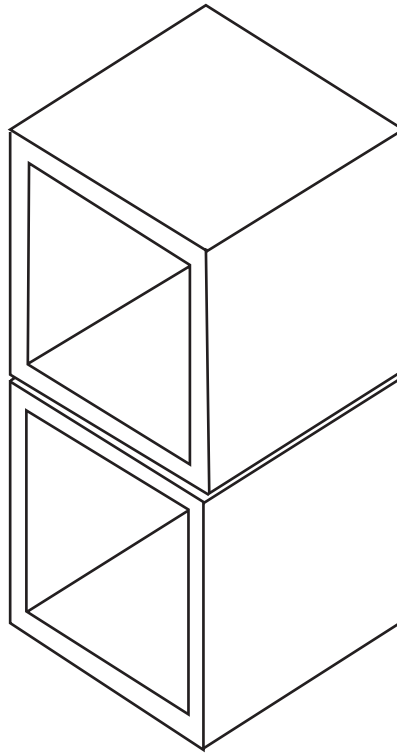
Acrylic

PVC

Polyester

[2]

2. A design for a CD storage unit made from manufactured board is shown below. The storage unit has a painted finish.



- (a) (i) From the list of manufactured boards given below, **underline** the **two** most suitable for making the unit. [2]

MDF

Chipboard

Plywood

Hardboard

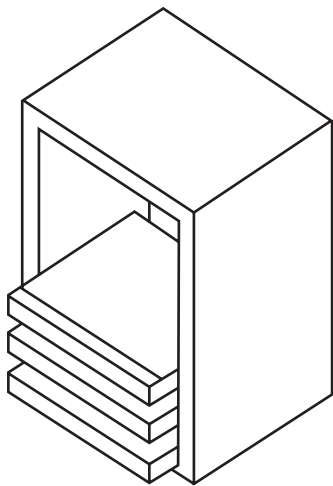
- (ii) **Name** and **sketch** a suitable joint for making the box units.

Name of joint: [1]

Sketch of joint: [3]

- (b) **Using** notes and sketches, **show** how a back panel could be attached to each box. [5]

- (c) The CDs need to be stacked horizontally (see sketch below). **Using** notes and sketches **show** how you would keep the CDs apart. [5]



3. The photograph shows a greenhouse constructed from Aluminium.



(a) **Explain two** reasons why Aluminium is a suitable material for the greenhouse.

Reason 1:
..... [2]

Reason 2:
..... [2]

(b) The greenhouse comes *flat packed* and is constructed using nuts and bolts. **Describe two** advantages of this type of construction.

Advantage 1:
..... [2]

Advantage 2:
..... [2]

- (c) Plastic is often used instead of glass in greenhouses. From the list below, **underline** a suitable plastic and explain why it is a suitable alternative to glass. [1]

Nylon

Polycarbonate

Melamine Formaldehyde

Explanation:

.....

.....

.....

[2]

- (d) Metals can be classed as Ferrous and Non-ferrous metals. Place each of the metals below in the correct column. [5]

Stainless Steel

Gold

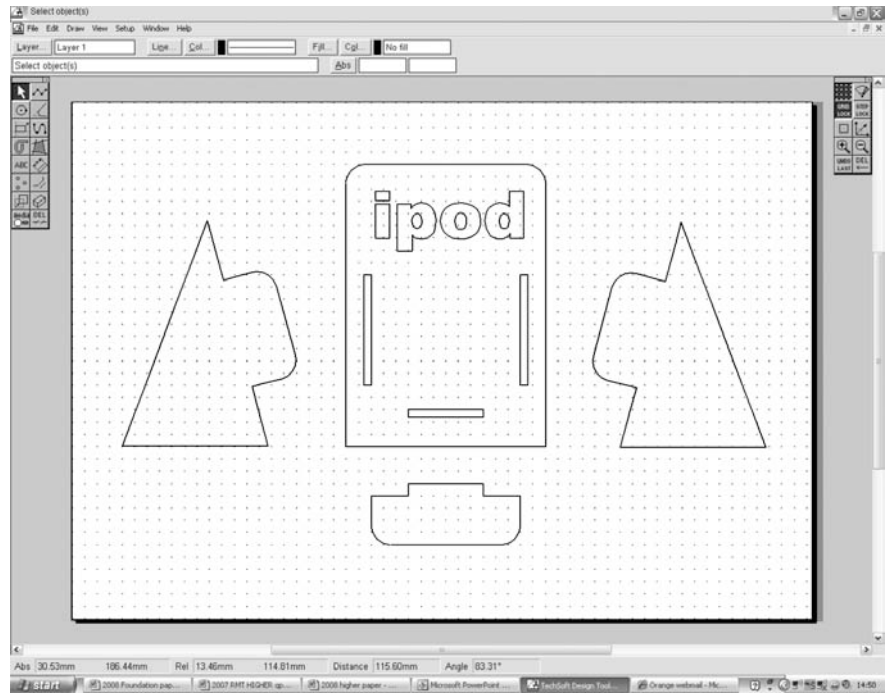
Copper

Iron

Lead

<i>Ferrous Metals</i>	<i>Non-ferrous Metals</i>

4. (a) The CAD diagram below shows the parts of the holder for an MP3 player. The holder is to be made from a 3mm thick plastic using CAM.



- (i) Name a suitable plastic for making the holder. [1]

.....

- (ii) Give two reasons for your choice.

Reason 1:

Reason 2:

[2]

- (iii) CAM stands for: C A M [2]

- (iv) Name a suitable CAM machine for making the holder. [1]

.....

- (v) Describe two advantages of using a CAM machine to make the holder.

Advantage 1:

..... [2]

Advantage 2:

..... [2]

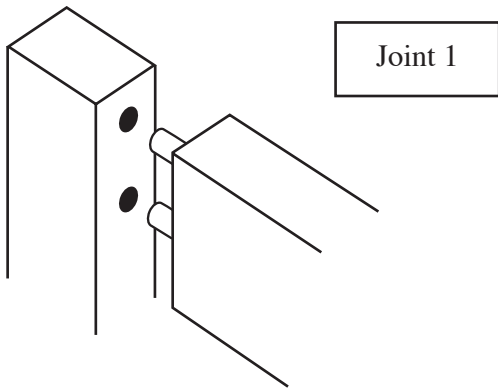
(b) (i) The diagrams show four different wood joints. From the list of names below, **insert** the correct name for each joint. [4]

Mitre joint

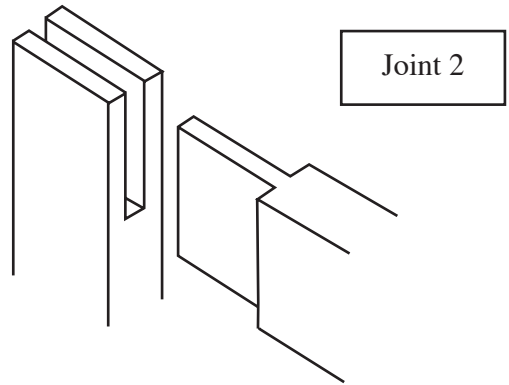
Dowel joint

Bridle joint

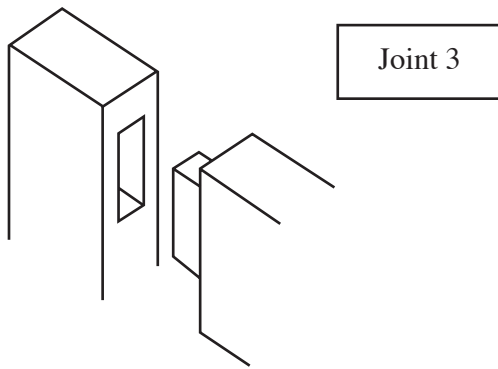
Mortise & Tenon



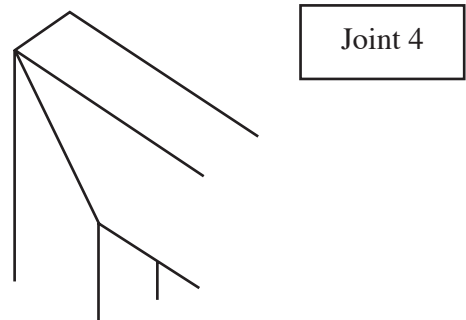
Name:



Name:



Name:



Name:

(ii) **Name three** tools you would use to make Joint 3. [3]

I

II


III

(iii) **Underline** the correct word in each of the following sentences.

[7]

The four joints are examples of box / frame joints.
A suitable adhesive for gluing the joints is PVA / contact adhesive .
A suitable Hardwood for joint 2 is Pine / Oak .
A suitable Softwood for joint 4 is Cedar / Ash .
The tool to mark out the 45 degree angle on joint 4 is a Set square / Mitre square .
A tool needed to accurately mark out joint 2 is a mortice gauge / scriber .
Joint 4 is often used in making chairs / picture frames .

(c) A pillar drill is used regularly in D&T. **State three** safety precautions when using this machine. [3]

	Safety precaution 1	
	Safety precaution 2	
	Safety precaution 3	

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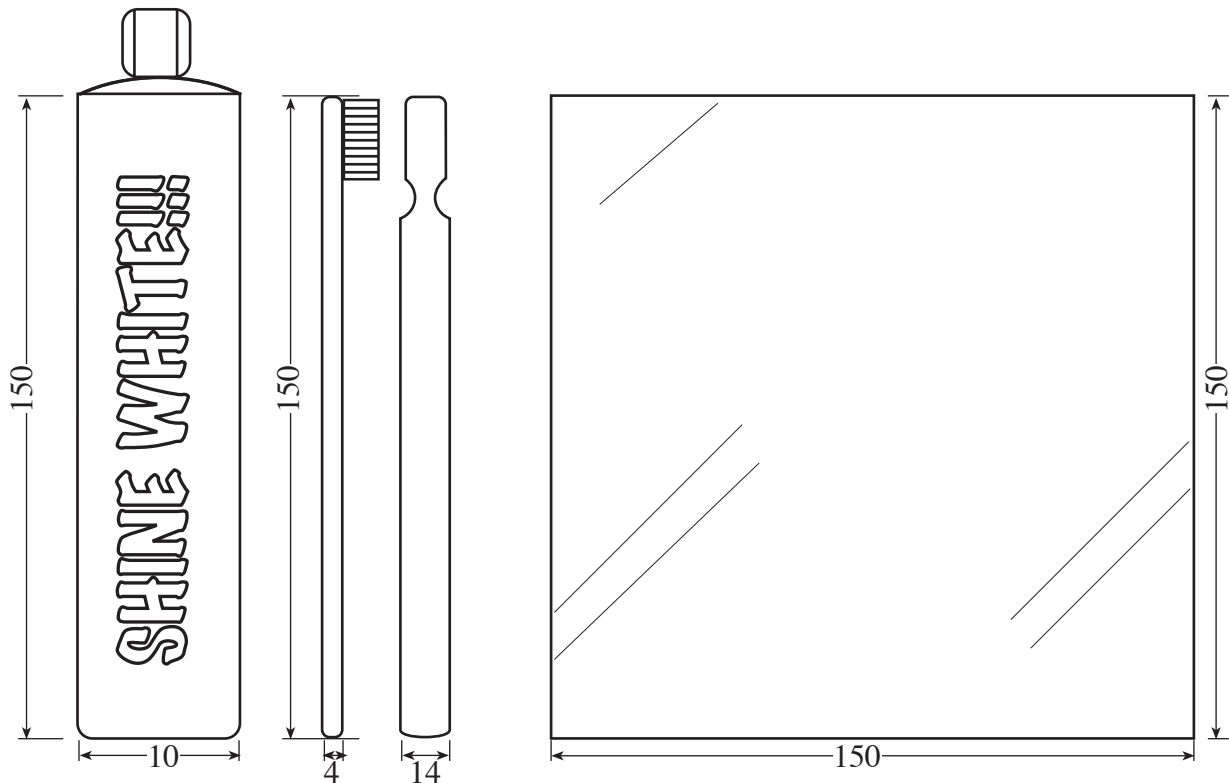
5. You have been asked to design a free standing 'bathroom tidy' that must incorporate the following items:

four toothbrushes;

one tube of toothpaste;

one 150mm x 150mm mirror.

All dimensions in millimetres.



NOT TO SCALE

Specification

The design must:

- be freestanding;
- hold four toothbrushes, one tube of toothpaste and include a mirror;
- be small enough to sit on a window sill.

Sketch your solution on the opposite page.

Marks will be awarded for:

- clear details of the overall design of the bathroom tidy showing how the mirror, toothbrushes and paste are held in place;
- how the design can fit onto a small space;
- constructional details of the stand;
- naming suitable materials / components;
- accurate and important dimensions;
- quality of communication.

[6]

[2]

[6]

[2]

[3]

[6]

