

Write your name here	
Surname	Other names
Centre Number	Candidate Number
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<b>Edexcel GCE</b>	
<h1>Design and Technology</h1> <h2>Product Design: Resistant Materials Technology</h2> <h3>Advanced Subsidiary</h3> <h3>Unit 2: Design and Technology in Practice</h3>	
Friday 28 May 2010 – Morning <b>Time: 1 hour 30 minutes</b>	Paper Reference <b>6RM02/01</b>
<b>You do not need any other materials.</b>	Total Marks
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#### Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches it must be dark (HB or B). Coloured pens, pencils and highlighter pens must not be used.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*

#### Information

- The total mark for this paper is 70.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (\*) are ones where the quality of your written communication will be assessed  
– *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

#### Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Answer ALL the questions. Write your answers in the spaces provided.

1 Figure 1 shows a mould which is used for vacuum forming.

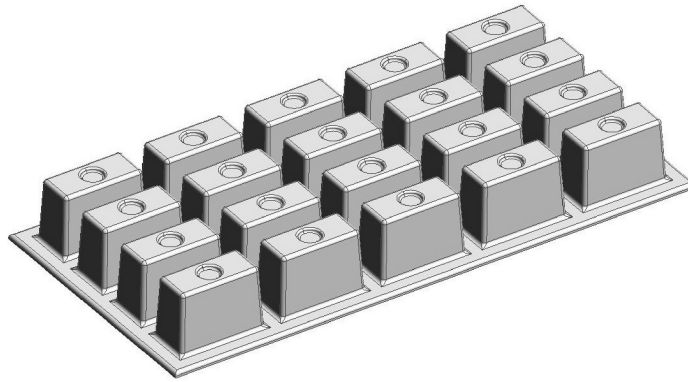


Figure 1

(a) Give **four** features of a mould which must be considered in order to create a successful vacuum forming.

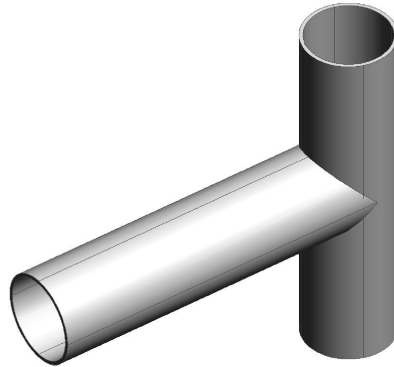
(4)

- 1 .....
- 2 .....
- 3 .....
- 4 .....





2 Figure 2 shows two mild steel tubes which have been brazed together.



**Figure 2**

(a) Describe the process of brazing the two tubes together.

(4)

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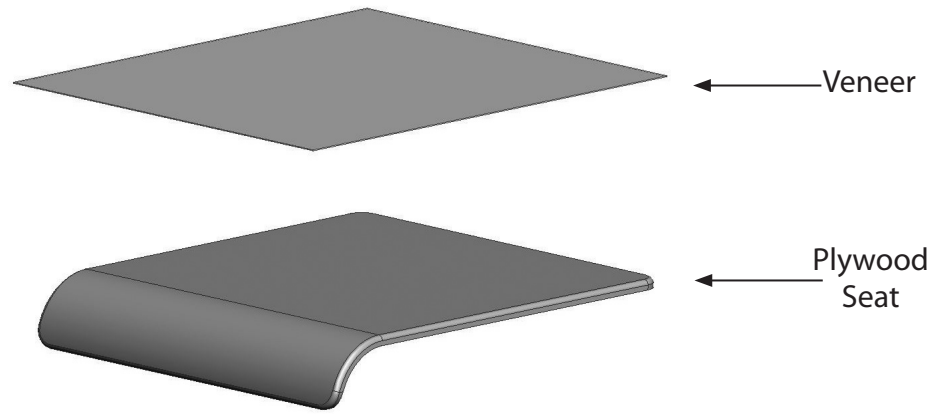
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(b) Figure 3 shows a plywood seat for a chair which requires a decorative veneered finish. The veneer is a thin wooden layer (laminata) that is to be bonded to the surface of the plywood seat using contact adhesive.



**Figure 3**

(i) Explain **two** reasons why contact adhesive is suitable for this purpose.

(4)

1 .....

2 .....

(ii) Describe the process of using contact adhesive to bond the veneer to the chair seat.

(2)

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**(Total for Question 2 = 10 marks)**



**3** (a) It is necessary for companies to carry out risk assessments for all processes.

Identify **one** hazard and **one** control measure for each of the following processes

(i) Wood turning

(2)

Hazard

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Control measure

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(ii) Metal casting

(2)

Hazard

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Control measure

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(iii) Computer Aided Designing

(2)

Hazard

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Control measure

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(b) The properties of metal can be altered by using heat treatments.

(i) Explain why the blade of a saw is hardened.

(2)

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(ii) Explain why the blade of a saw is tempered.

(2)

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(iii) Describe the process of tempering steel.

(2)

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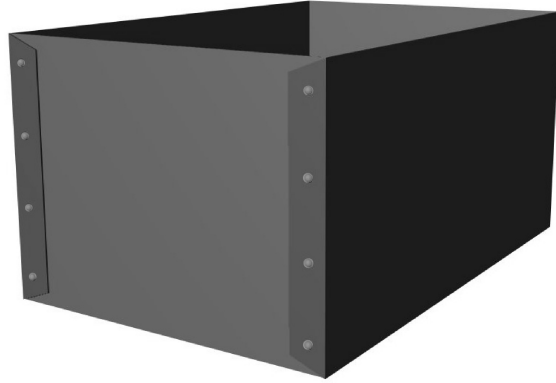
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**(Total for Question 3 = 12 marks)**



4 Figure 4 shows a steel box which has been riveted at the seams using snap (head) rivets.



**Figure 4**

(a) Describe, using notes and/or sketches, the process of riveting using snap (head) rivets. (4)

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(b) Pop rivets could be used as an alternative to the snap (head) rivets.

Explain **two** reasons why pop rivets might be used in sheet metalwork.

(4)

1 .....

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2 .....

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(Total for Question 4 = 8 marks)



5 Figure 5 shows a large table. The table top is made from veneered chipboard.



Figure 5

(a) Name **two** alternative manufactured boards which could be used instead of chipboard for the table top.

(2)

1 .....

2 .....

(b) Explain **three** reasons why a veneered chipboard top is more suited to this design than a solid timber top.

(6)

1 .....

2 .....

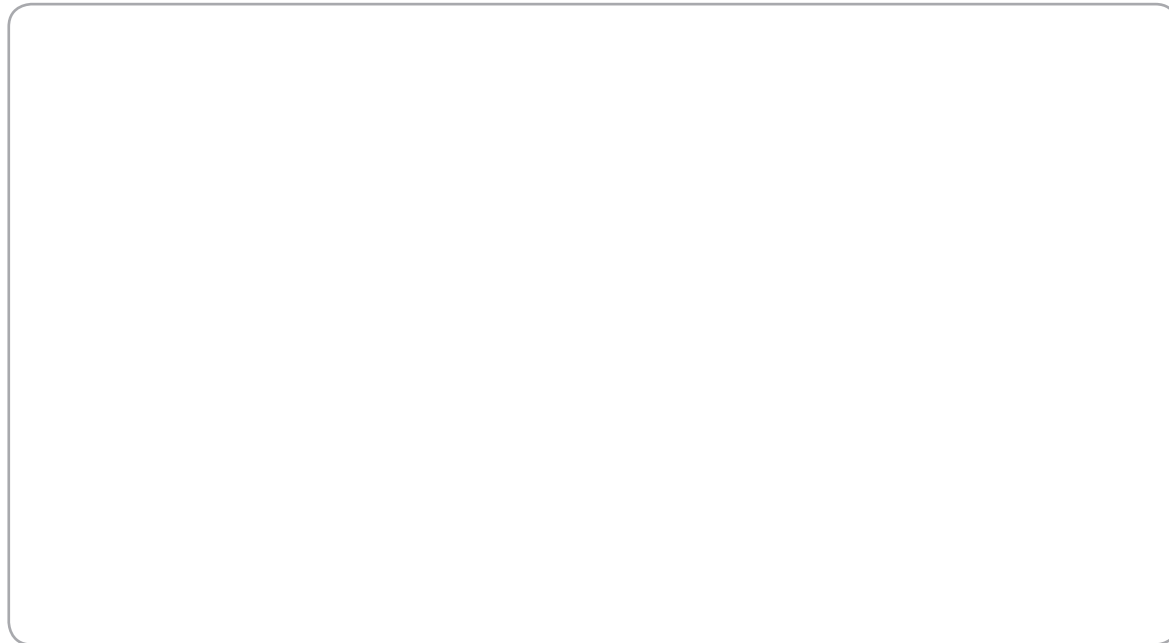
3 .....



(c) Sheets of veneered chipboard are often supplied with their edges left exposed.

Draw an annotated diagram of **one** suitable edge treatment a manufacturer could use to cover the exposed edges of the chipboard table top.

(2)



(Total for Question 5 = 10 marks)



\*6 Figure 6 shows a wooden block model of a simple television remote control.



Figure 6

(a) Explain **two** reasons why it is important to produce a block model of the television remote control before going to the production stage.

(4)

1 .....

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2 .....

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(b) Explain **three** benefits of using rapid prototyping using CAD/CAM as an alternative method to block modelling.

(6)

1 .....

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2 .....

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3 .....

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**(Total for Question 6 = 10 marks)**







Handwriting practice area with 20 horizontal dotted lines.

**(Total for Question 7 = 10 marks)**

**TOTAL FOR PAPER = 70 MARKS**



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