

Surname					Other Names				
Centre Number					Candidate Number				
Candidate Signature									

For Examiner's Use
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General Certificate of Secondary Education  
June 2006

**DESIGN AND TECHNOLOGY  
(GRAPHIC PRODUCTS) (SHORT COURSE)  
Written Paper  
Higher Tier**

3553/H

**H**



Tuesday 6 June 2006 1.30 pm to 3.00 pm

<p><b>For this paper you must have:</b></p> <ul style="list-style-type: none"> <li>a pen, pencil, ruler, eraser, pencil sharpener and coloured pencils</li> </ul> <p>You may also use marker pens and 45/60 degree set squares.</p>
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For Examiner's Use			
Question	Mark	Question	Mark
1		5	
2		6	
3		7	
4			
Total (Column 1) →			
Total (Column 2) →			
<b>TOTAL</b>			
Examiner's Initials			

Time allowed: 1 hour 30 minutes

**Instructions**

- Use blue or black ink or ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- Answer the questions in the spaces provided.
- Show the working of your calculations.
- Detach the blue sheet from the back of this examination paper to use in between the sheets to prevent ink bleeding through to the next sheet.
- Do **not** hand in the blue sheet at the end of the examination.

**Information**

- The maximum mark for this paper is 100.
- The marks for questions are shown in brackets.
- All dimensions are given in millimetres unless otherwise stated.
- You are reminded of the need for good English and clear presentation in your answers.

This question is about signage and is worth 15 marks.

Spend about 15 minutes on this question.

- 1 A new sign is wanted by the Post Office. Only the words **POST OFFICE** are to be featured.

Study the letters given in **Figure 1**.

The letters contain only straight lines and are seven spaces high.

Add the word **OFFICE** to **Figure 2**, in the same style as the word **POST**, by using a ruler.

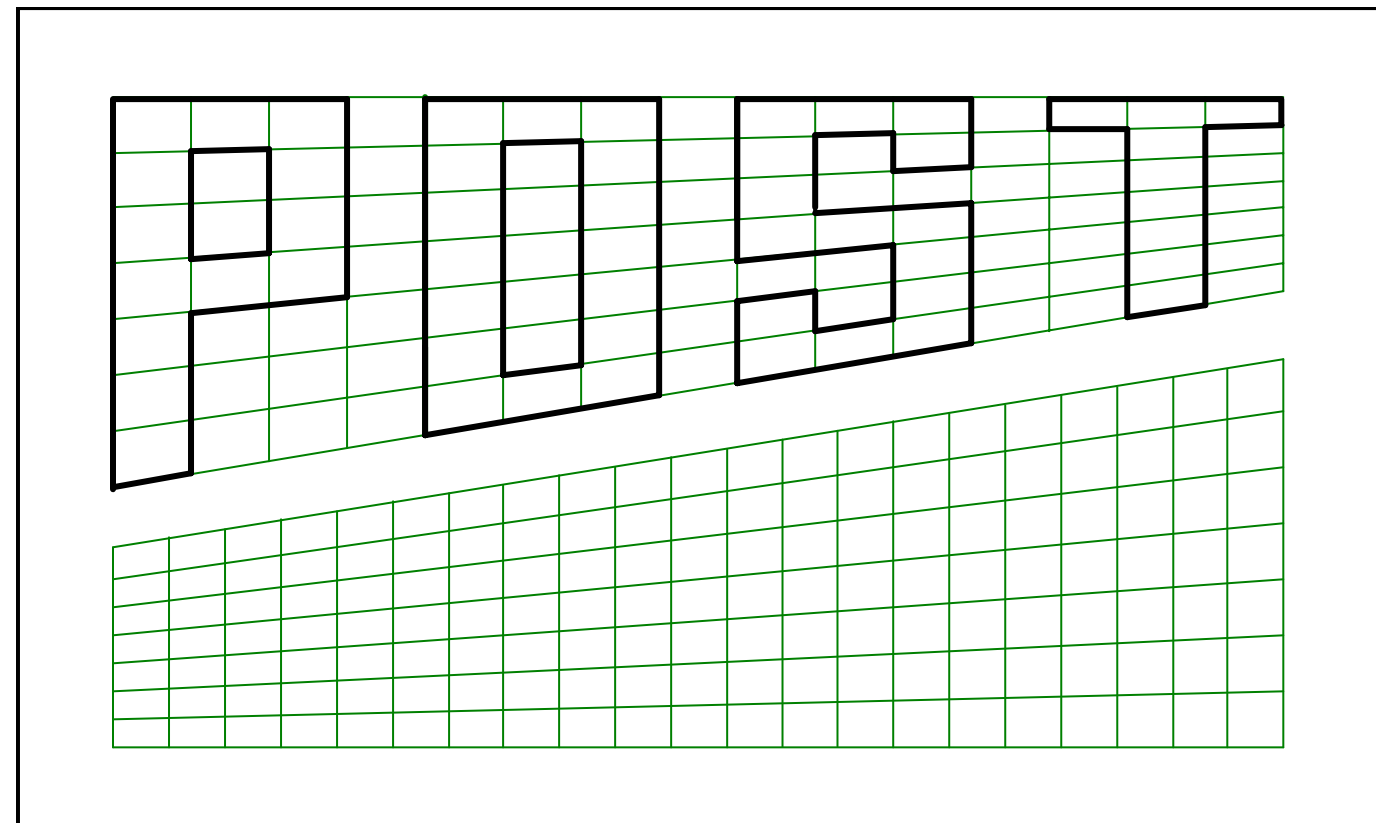
Marks will be awarded for:

- (a) completing the missing letters in the same style; *(12 marks)*
- (b) line quality; *(2 marks)*
- (c) spacing. *(1 mark)*

**Figure 1**



**Figure 2**



## DESIGN BRIEF

- A set of commemorative postage stamps will be issued in Britain.
- Each stamp in the set will feature a different way of generating power by renewable methods.
- You will be asked to **design one stamp**.
- You are to include a special printing effect in your design.

Study the examples of commemorative postage stamps (**Figure 3**) and turn to Question 2 on Sheet 3.

Figure 3



This stamp has not been reproduced here due to third-party copyright constraints.

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DO NOT SKETCH ON THIS SHEET

**This question is about printing effects and is worth 13 marks.**

**Spend about 10 minutes on this question.**

2 A commemorative postage stamp will have a special printing effect included in its design.

(a) Complete **Table 1** by giving a description of each special printing effect. One has been done for you.

**Table 1**

Printing effect	Description of the effect
Metallic finish	<i>Shiny, reflective metallic foil attached to board or paper, looks like metal</i>
'Scratch and Sniff'	
Thermochromatic Ink	
Holographic Image	
Embossed Image	

(8 marks)

(b) Select **one** special printing effect you could use in a stamp design and give a reason why it is appropriate.

I could use .....

Reason .....

.....  
 .....  
 .....

(2 marks)

(c) Explain with sketches and notes how a postage stamp could be modified so that a blind person could 'read' its value.

(3 marks)

**This question is about developing an idea for a commemorative postage stamp and producing a presentation drawing of it. It is worth 30 marks.**

**Spend about 30 minutes on this question.**

**3** You are asked to design a commemorative postage stamp on the theme of wind generated renewable energy.

- (a) This part is about developing a design. Study the photograph of a wind farm (**Figure 4**).
- (i) Sketch your initial idea in the labelled box. (2 marks)
  - (ii) Develop your stamp's design in the labelled boxes, and produce a thumbnail sketch of the layout. (8 marks)
  - (iii) Indicate which special printing effect will be used. (2 marks)
- Marks will be awarded for:
- quality of sketches; (2 marks)
  - use of colour; (1 mark)
  - notes to explain your ideas. (6 marks)

(b) Produce a presentation drawing of your final stamp design on the triangular outline of the stamp (**Figure 5**).

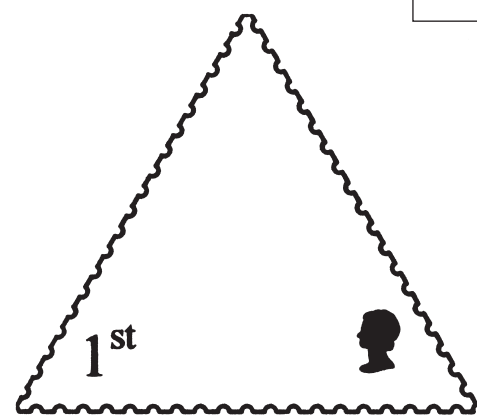
- Marks will be awarded for:
- quality of lines; (2 marks)
  - quality of colour rendering; (3 marks)
  - layout. (4 marks)

**Figure 4**

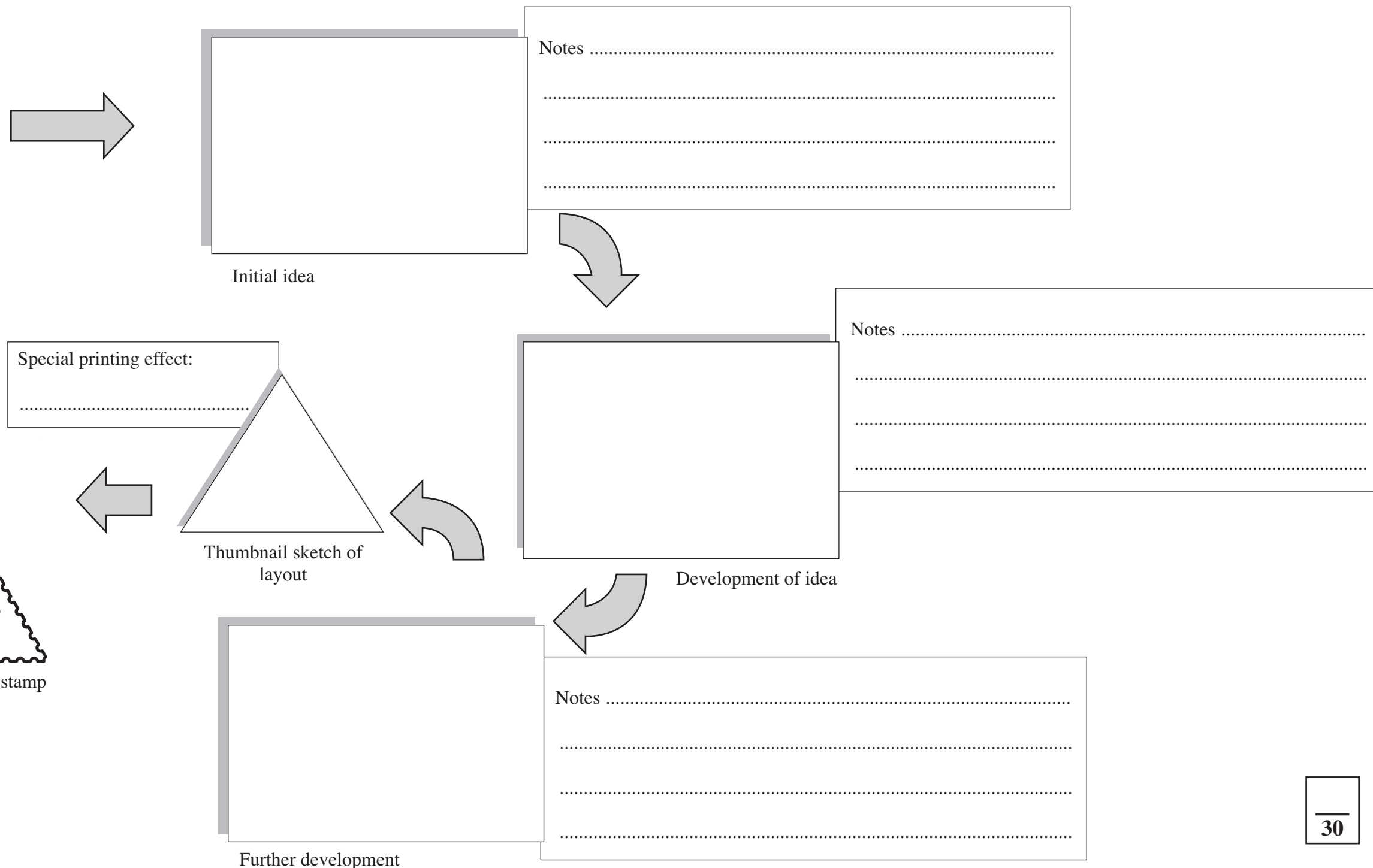


STARTING POINT: Wind Farm

**Figure 5**



Presentation Drawing of your stamp



This question is about surface development (nets) and British Standards and is worth 10 marks.

Spend about 8 minutes on this question.

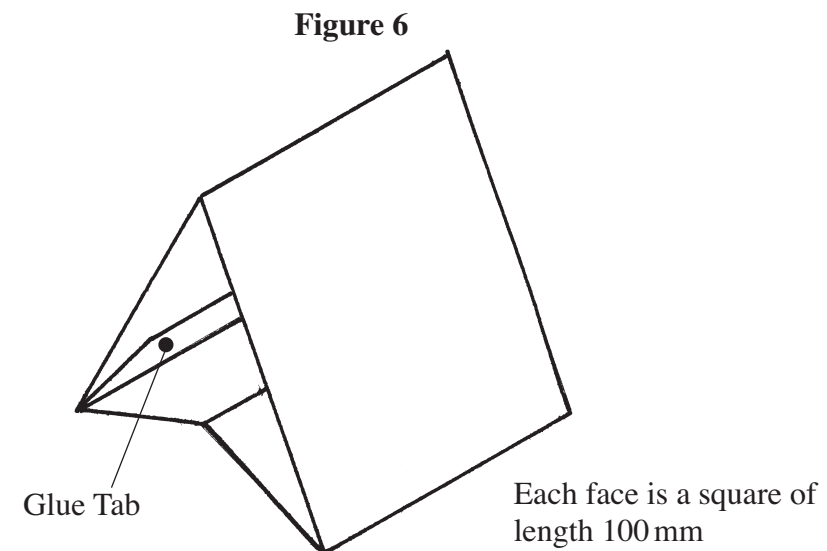
4 A table top promotional display for the commemorative postage stamp is shown in **Figure 6**.

It is made from a single piece of thin board 320 mm long (including a 20 mm glue tab) and 100 mm wide.

(a) Complete the half-size surface development (net) of the display stand on the grid below.

- Show the outline shape with solid lines.
- Show the fold lines with broken lines.
- Label the glue tab.

(6 marks)



Cut line ———  
Fold line - - - - -

Scale 1 : 2

(b) Add **two** outline dimensions to the surface development (net) using British Standard conventions.  
(4 marks)

This question is about representing materials and is worth 8 marks.

Spend about 7 minutes on this question.

- 5 A point of sale display is shown in **Figure 7**. A copy of the commemorative postage stamp is on the inside of each of the four faces of the display.

**Figure 8** is an isometric drawing of the point of sale display.

- (a) Colour the sides of the base to represent a wood grain effect. (4 marks)
- (b) Render the upper part to represent clear plastic. (4 marks)

DO NOT INCLUDE YOUR STAMP DESIGN

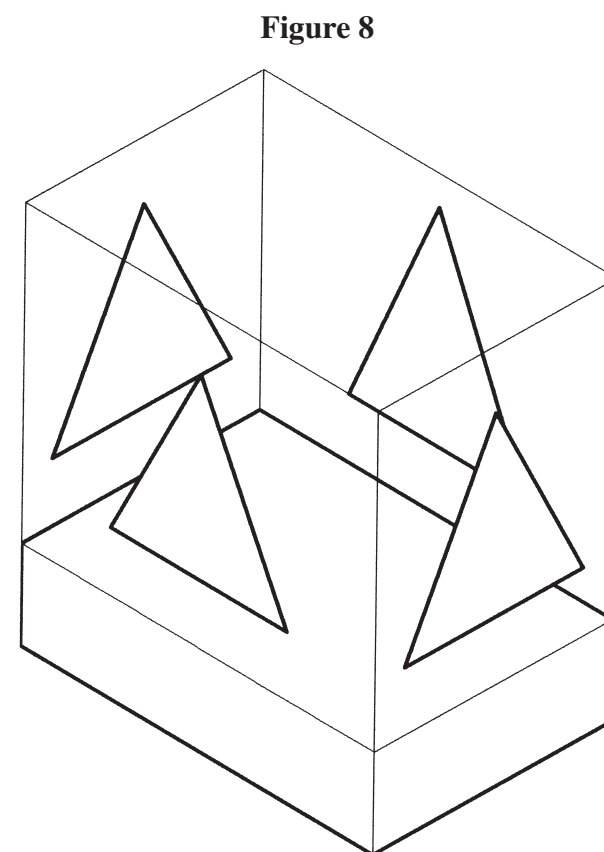
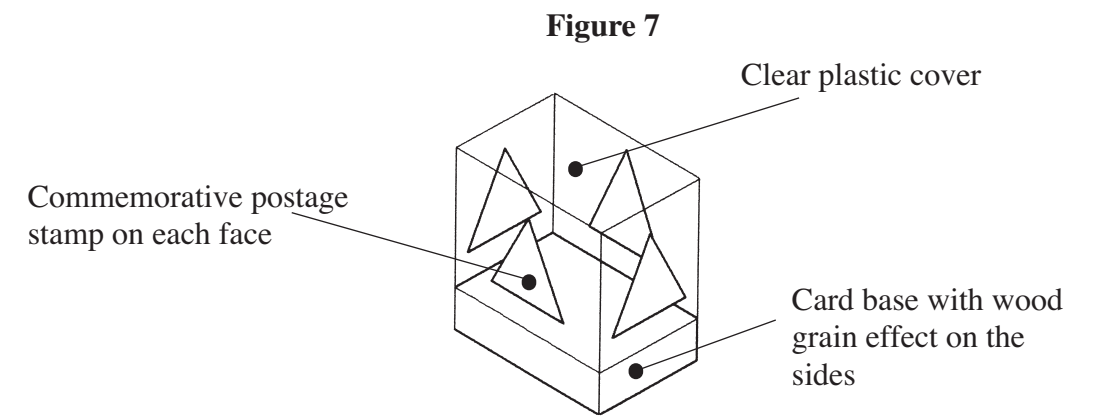


Figure 9



This question is about materials and industrial practices and is worth 12 marks.

Spend about 10 minutes on this question.

6 As part of the promotion of the renewable energy stamps, small hand-held toy windmills (Figure 9) are to be given away to children.

The windmill has six thin plastic sails.

(a) (i) Name a suitable thin plastic which could be used for the sails.

.....  
(1 mark)

(ii) Give a safety reason why thin plastic sheet is a good material for the sails.

.....  
.....  
.....  
(2 marks)

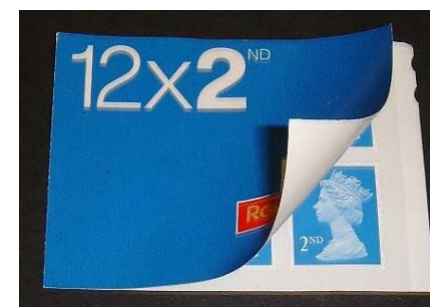
(b) Name a non-plastic material which could be used for the sails of this toy and explain which of its properties make it suitable for use.

Material .....  
(1 mark)

Property .....  
.....  
.....  
(2 marks)

(c) Some postage stamps are 'self adhesive' and are sold in books (Figure 10).

Figure 10



(i) Give two reasons why 'self adhesive' stamps are popular.

Reason 1 .....  
.....  
(2 marks)

Reason 2 .....  
.....  
(2 marks)

(ii) Why are the stamps on shiny, waxed paper?

.....  
.....  
.....  
(2 marks)



This question is about culture and industrial practice and is worth 12 marks.

Spend about 10 minutes on this question.

7 **Figure 11** is an example of a franking strip used as an alternative to postage stamps.

The franking strip has three marks: Mark A, Mark B, and Mark C.

**Figure 11**



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(a) Explain why each mark is used on a franking strip.

**Mark A** is used because it shows .....  
.....  
.....  
(2 marks)

**Mark B** is used because it shows .....  
.....  
.....  
(2 marks)

**Mark C** is used because it shows .....  
.....  
.....  
(2 marks)

(b) In the space below produce a new design for **Mark C** in the same style, on the theme of wind farms.



(4 marks)

(c) Give **one** advantage to a school or business of using franking strips over postage stamps.

.....  
.....  
(2 marks)

**END OF QUESTIONS**