

Surname					Other Names				
Centre Number					Candidate Number				
Candidate Signature									

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General Certificate of Secondary Education  
June 2005

**DESIGN AND TECHNOLOGY  
GRAPHIC PRODUCTS**

**3543/F**

**F**



**Foundation Tier**

Wednesday 8 June 2005 1.30 pm to 3.30 pm

- In addition to this paper you will require:**
- a pen, pencil, ruler, eraser, pencil sharpener and coloured pencils.
  - You may also use marker pens and 45/60 degree set squares.

Time allowed: 2 hours

**Instructions**

- Use blue or black ink or ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions in the spaces provided.
- Detach the blue sheet from the back of the 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 125.
- Mark allocations are shown in brackets.
- Wherever calculations are needed you should show your working.
- All dimensions are given in millimetres unless otherwise stated.
- You are reminded of the need for good English and clear presentation.

**Advice**

Answer the questions in the order given.

For Examiner's Use			
Number	Mark	Number	Mark
1			
2			
3			
4			
5			
6			
7			
8			
Total (Column 1)	→		
Total (Column 2)	→		
TOTAL			
Examiner's Initials			

**Read the following information carefully before you begin the questions which follow.**

### **INDIVIDUAL SOFT DRINK PACKAGE**

It is important that the human body has a regular intake of fluids especially when taking part in strenuous physical exercise and during hot weather. This helps to prevent dehydration and replaces vital nutrients that have been lost.

A soft drinks manufacturer called *AQAPOP* is to introduce a new non-carbonated drink.

The type of container is important, it must be suitable for the application. The container is to be printed with text and graphics. It is targeted at young adults who engage in physical exercise.

**Figure 1** shows a range of possible containers for the new drink.

### **ACKNOWLEDGEMENTS**

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**Image 4** – reproduced with kind permission from Lucozade Sport.

**Image 5** – reproduced with kind permission from Glaxo Smith Kline.

**Image 6** – reproduced with kind permission from Robinson’s Soft Drinks Ltd.

For copyright reasons it has not been possible to include all of the images on the original Figure 1. Figure 1 showed a range of possible containers for the new drink including soft drinks in plastic bottles, cartons, cans and foil containers.

A full copy of the paper can be obtained from Centre Services at Devas Street, Manchester. e-mail: [Despatches-M@aqa.org.uk](mailto:Despatches-M@aqa.org.uk) Tel: 0161 953 1180.

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This question is about representing data and is worth 6 marks.

Spend about 5 minutes on this question.

1 A survey of young people was carried out to find out which type of container they preferred for the new drink.

The results of the survey are shown below.

Metal can	Glass bottle	Plastic bottle	Tetra Brik
3	1	6	2

Table 1

Complete and colour the *pie chart* and *key* (Figure 2) using this information.

Marks will be awarded for:

- (a) accuracy; (2 marks)
- (b) effective use of colour; (2 marks)
- (c) completing key. (2 marks)

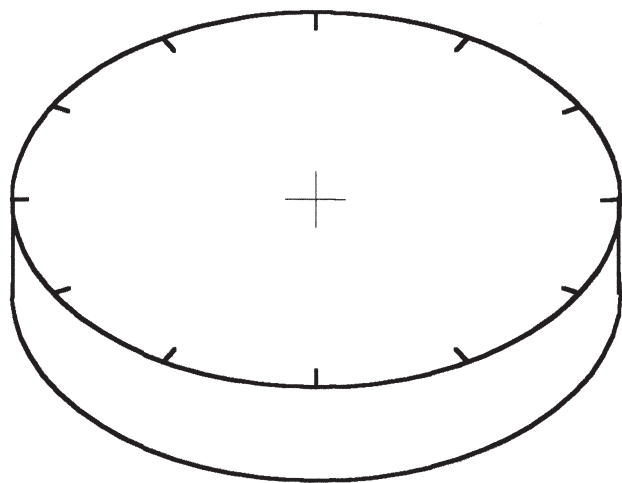


Figure 2

KEY	

Fold along this line

This question is about a specification and is worth 4 marks.

Spend about 5 minutes on this question.

2 As a result of the survey a plastic bottle has been chosen for the new drink.

You have been asked to design the graphics for a *wrap round* label (Figure 3).

AQAPOP has provided the following specification points for the graphics to guide you

- Point 1 AQAPOP must be **clearly visible** on the label.
- Point 2 The label must **appeal to young people**.
- Point 3 The label design must be based on **physical activity or sport**.

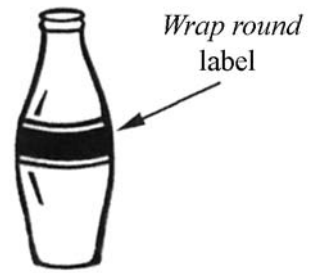


Figure 3

Give **two** more specification points for the graphics.

For each point give **one** reason why you think each is important for a successful product.

(i) Point 4 ..... (1 mark)

Reason .....  
 ..... (1 mark)

(ii) Point 5 ..... (1 mark)

Reason .....  
 ..... (1 mark)

**HINT**

Fold this sheet along the centre line so that Question 2 can be used with Question 3 on Sheet 3.

This question is about generating designs and is worth 17 marks.

Spend about 20 minutes on this question.

3 The plastic bottle (Figure 4) has a label around it.

(a) Sketch **three different** ideas for your label design.

This part of the question is worth 14 marks.

One label and its notes have been started for you.

Marks will be awarded for:

- (i) effective use of the information from Question 2; (5 marks)
- (ii) **three** separate ideas; (1 mark)
- (iii) quality of your sketches; (5 marks)
- (iv) indication of colours used to enhance the product; (3 marks)

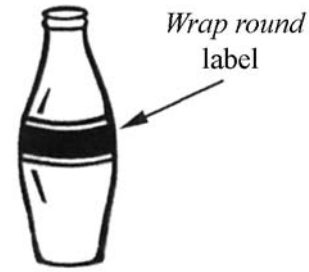


Figure 4

(b) Using the specification points from **Question 2**, explain your ideas for each design.

This part of the question is worth 3 marks.

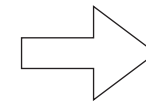
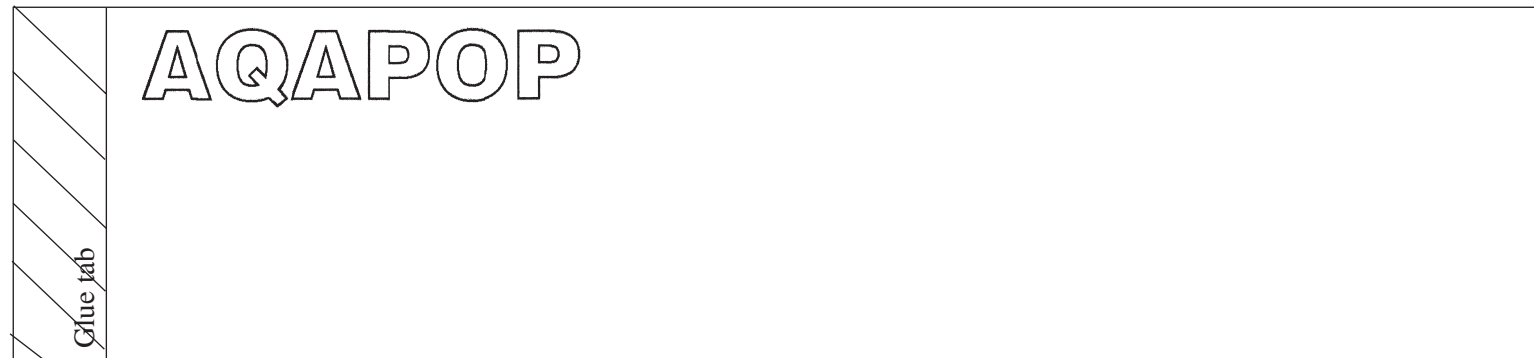
Marks will be awarded for:

- (i) Adding **one other** explanation for design 1.
- (ii) Adding **one** explanation for design 2.
- (iii) Adding **one** explanation for design 3.

**HINT**

Fold Sheet 2 along its centre line so that your Question 2 answers can be used with this question.

(a) Label design 1



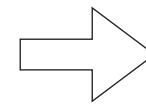
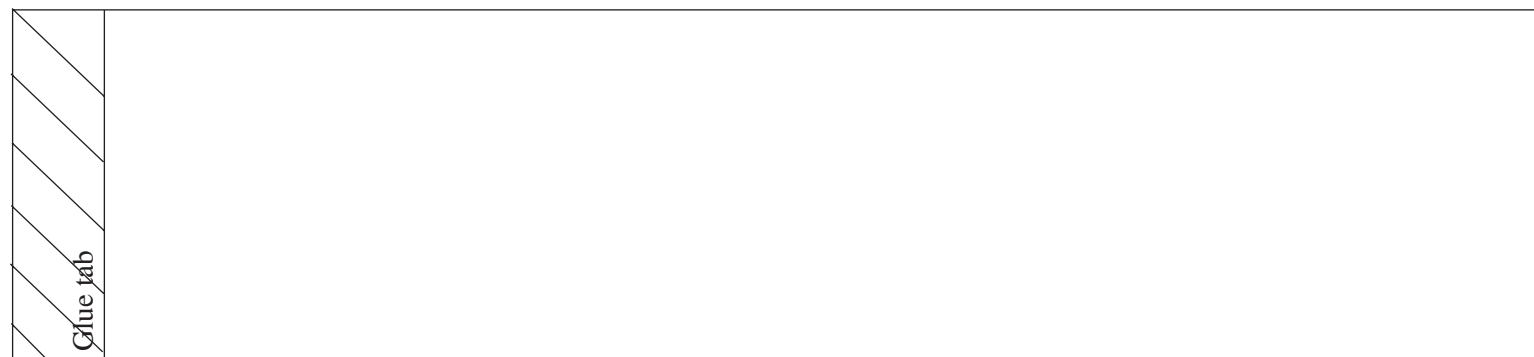
(b) Explanation of design 1

- The name AQAPOPOP is in a plain open font which allows the colour of the drink to be seen through the label.

- (i) ● .....
- .....
- .....
- .....

(1 mark)

Label design 2

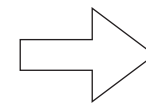


Explanation of design 2

- (ii) ● .....
- .....
- .....
- .....

(1 mark)

Label design 3



Explanation of design 3

- (iii) ● .....
- .....
- .....
- .....

(1 mark)

This question is about presentation drawing and British Standards and is worth 22 marks.

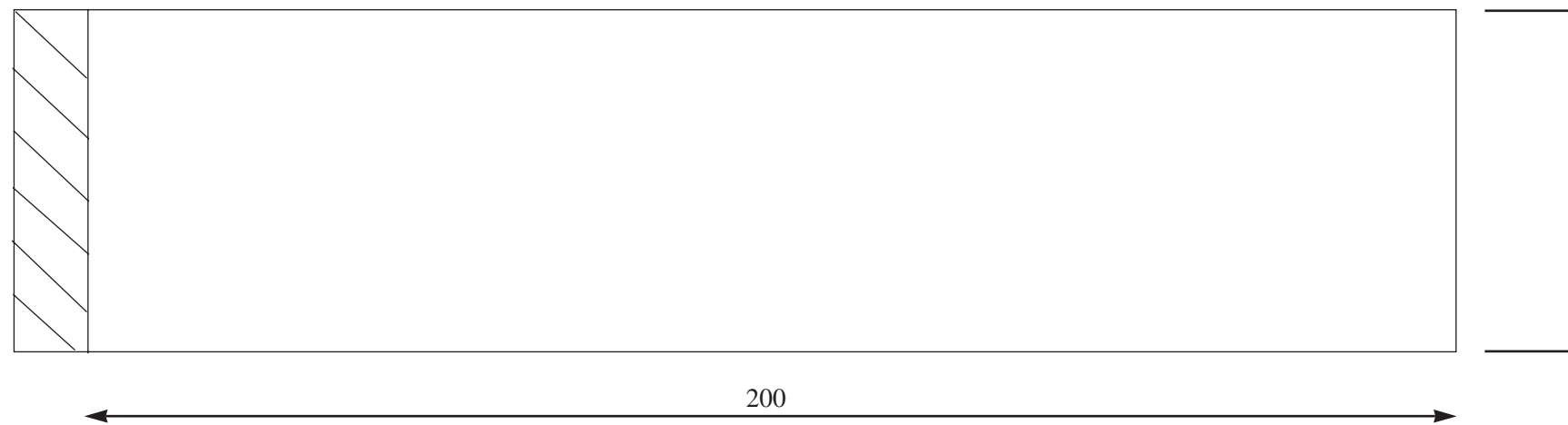
Spend about 25 minutes on this question.

- 4 (a) Use the best parts from your three designs in Question 3 and produce a full size colour presentation drawing of your label design for the bottle.

This question is worth 17 marks.

Marks will be awarded for:

- (i) use of specification; (5 marks)
  - (ii) quality of drawings; (4 marks)
  - (iii) suitable layout; (4 marks)
  - (iv) quality of colouring. (4 marks)
- (b) (i) Complete the two dimensions on the label using British Standard conventions. (4 marks)
- (ii) Complete the scale symbol for a full size drawing (Figure 5). (1 mark)



Scale \_\_\_\_\_:\_\_\_\_\_

Figure 5

This question is about evaluation and is worth 16 marks.

Spend about 15 minutes on this question.

- 5 (a) Evaluate your presentation drawing for your label from Question 4, by explaining how well your final design meets the original specification.

Explain the **specification** points 1–5 from Question 2.

(i) Point 1 AQAPOP is clearly visible because .....

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

(ii) Point 2 The label appeals to young people because .....

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

(iii) Point 3 The label shows a physical activity of sport because .....

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

(iv) Point 4 Your specification point was .....

Explanation The label shows .....

.....  
(2 marks)

(v) Point 5 Your specification point was .....

Explanation The label shows .....

.....  
(2 marks)

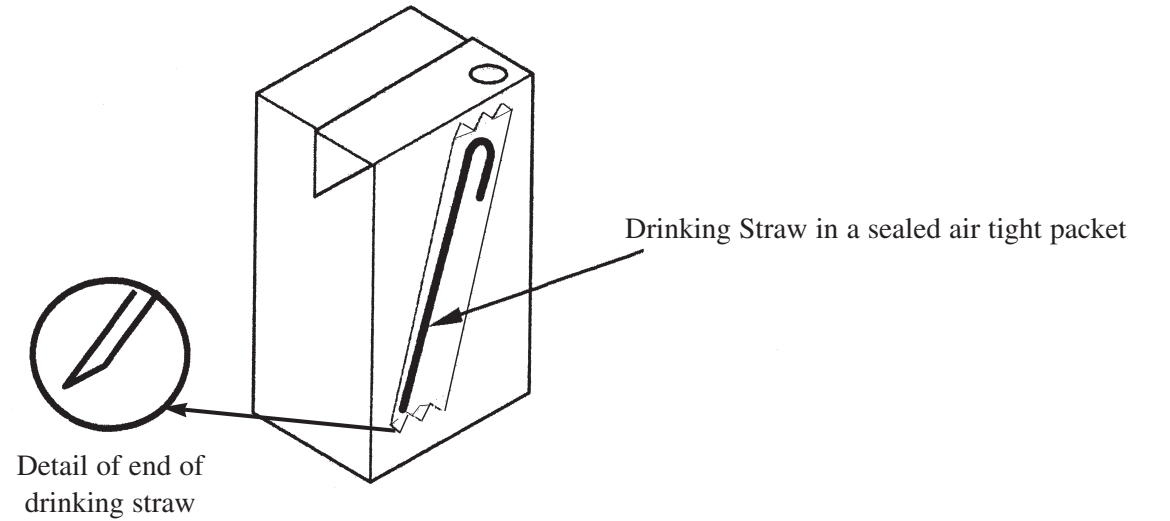


Figure 6

- (b) Figure 6 shows another popular type of drinks container.

It is made from laminated board.

(i) Explain why laminated board is used for this type of container.

.....  
.....  
(1 mark)

(ii) Explain how the laminated board is treated to make it waterproof.

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

(iii) Study the detail of the end of the drinking straw.

Explain why it is this shape.

.....  
.....  
.....  
(3 marks)

This question is about materials and components and is worth 27 marks.

Spend about 20 minutes on this question.

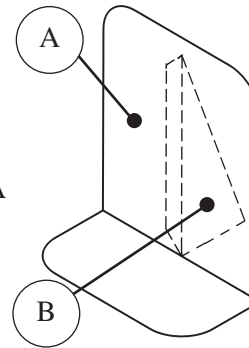


Figure 7

6 A *point of sale* display stand is to be made in school (Figure 7) from two pieces of thin board, part A is the display area, and part B the back support.

(a) The graphics for the *point of sale* display stand are created with a DTP computer programme.

What do the letters DTP stand for?

.....  
 (2 marks)

(b) Parts of the *point of sale* display stand can be held together by the following methods.

Give **one** advantage and **one** disadvantage of each method.

(i) *double-sided tape*

Advantage .....

.....

.....  
 (2 marks)

Disadvantage .....

.....

.....  
 (2 marks)

(ii) *hot-glue*

Advantage .....

.....

.....  
 (2 marks)

Disadvantage .....

.....

.....  
 (2 marks)

(c) The equipment and materials which could be used to make a *point of sale* display stand in school are shown in Table 2 below.

Complete the table by:

- (i) naming the *equipment* and *materials* shown,
- (ii) stating where it is used in the making of a display stand.

An example is given

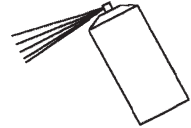

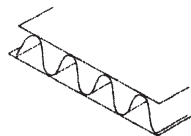
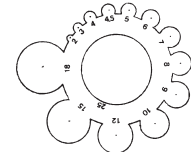

Item	Name	Use when making a <i>point of sale</i> stand
	<i>Spray glue</i>	<i>To stick paper and board together on the main part of the display stand</i>
	.....	.....
	.....	.....
	.....	.....
	.....	.....

Table 2

(12 marks)

(d) Plastic has largely replaced glass for soft drinks bottles.

(i) Give **one** reason why plastic has largely replaced glass for soft drinks bottles.

.....

.....  
 (2 marks)

(ii) Name **one** plastic used for soft drinks bottles.

.....  
 (2 marks)

(iii) Name the industrial process used to make plastic bottles.

.....  
 (1 mark)

**This question is about Computer Aided Manufacture and industrial systems and is worth 10 marks.**

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

7 In schools the graphic artwork for the drinks package label can be created with a computer system.

(a) (i) Give the *full* name of an output device which in schools will produce a good quality label.

Output device is a .....  
(2 marks)

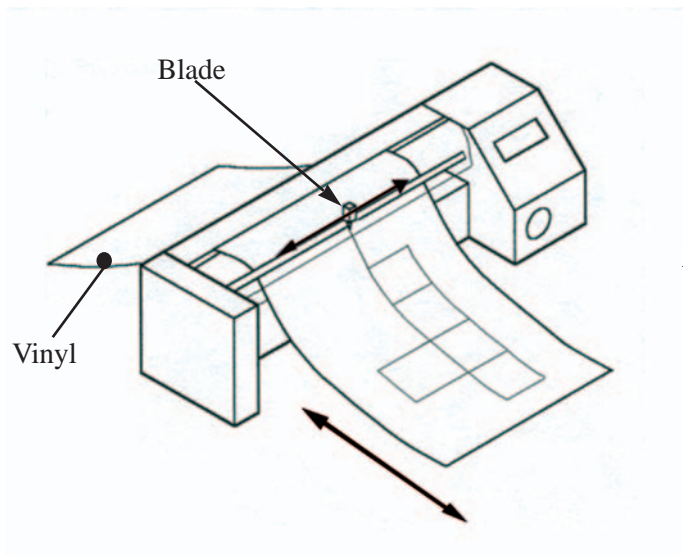
(ii) Name **two** pieces of equipment that could be used to add photographs to a computer generated design for a label.

Equipment 1 .....  
Equipment 2 .....  
(2 marks)

(b) **Figure 8** is a simplified sketch of a vinyl or profile cutter.

The cutting blade moves along one axis, as the material moves along the other axis.

Study the sketch and label the axes. (2 marks)



Across the material is the ..... axis

Along the material is the ..... axis

**Figure 8**

(c) Computer aided manufacturing (CAM) is used to make a wide range of commercial graphic products for the printing and packaging industries.

Explain **two** advantages of CAM to industry.

Advantage 1

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

Advantage 2

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



This question is about cultural, social and environmental issues, and is worth 23 marks.

Spend about 20 minutes on this question.

8 (a) A drinks container has the following information printed on it.



Study each piece of information and explain its meaning.

(i) **288ml** .....

.....

.....


(2 marks)

(ii) **e** .....

.....

.....

(2 marks)

(iii)  .....

.....

.....

(3 marks)

(b) Explain the meaning of <sup>TM</sup> in this label.

**AQAPOP<sup>TM</sup>** .....

.....

.....

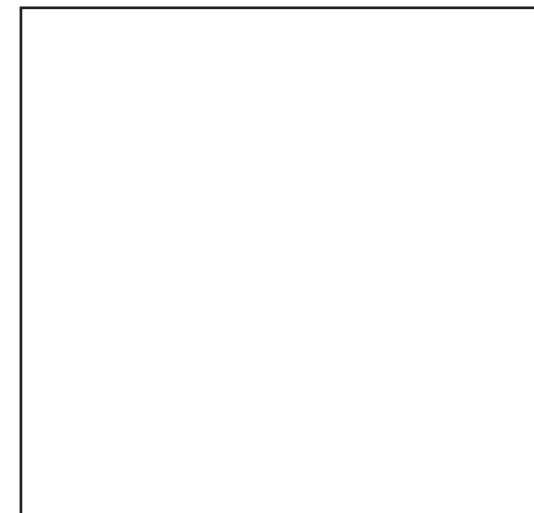
.....

(3 marks)

(c) In the box below draw a symbol in the same style as **Figure 9** to show that a drinks can should be crushed before being disposed of.



Figure 9



(5 marks)

(d) (i) Explain why cans should be crushed before disposing of them.

.....

.....

.....

(2 marks)

(ii) Give **two** reasons why aluminium drink cans are not considered to be environmentally friendly. Explain your answer.

Reason 1

.....

(1 mark)

Explanation

.....

.....

(2 marks)

Reason 2

.....

(1 mark)

Explanation

.....

.....

(2 marks)

**END OF QUESTIONS**

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