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/H

Higher Tier

H

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.

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 Tel: 0161 953 1180.

ACKNOWLEDGEMENTS

Images 1, 3 and 7 – 'Coca-Cola', 'Coke' and 'Lilt' are registered trade marks of The Coca-Cola Company and are reproduced with kind permission from The Coca-Cola Company.

Image 2 – reproduced with kind permission from Danone Ltd.

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.

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

Spend about 10 minutes on this question.

1 A survey of 100 young people was carried out to find out which type of container they preferred for the new drink.

The results of the survey were:

metal can	plastic bottle	*Tetra Brik*	foil container
30	**25**	**10**	**35**

Complete and colour the *pictograph* **(Figure 2)** using this information.

(Let one symbol represent 10 people)

One column has been started for you.

Marks will be awarded for:

(a) accuracy; *(4 marks)*
(b) quality of presentation; *(2 marks)*
(c) effective use of colour. *(2 marks)*

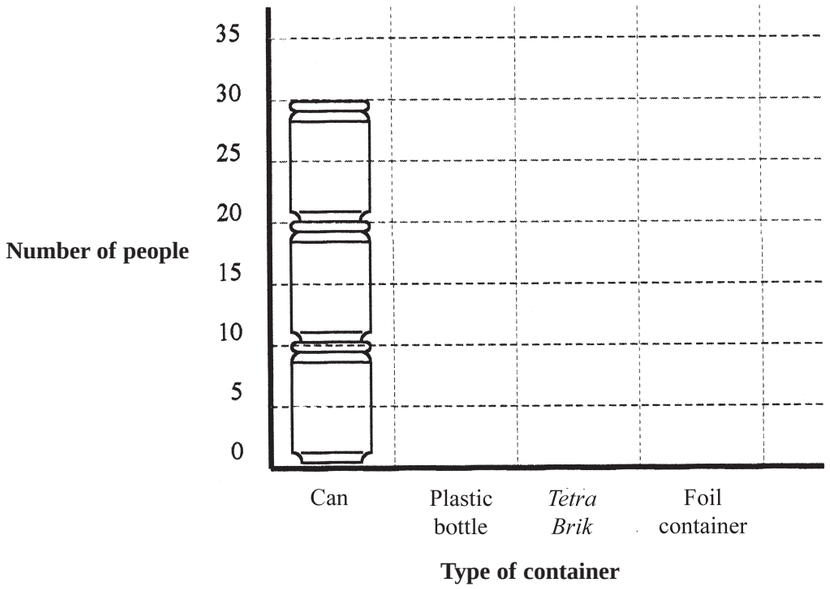

Figure 2

8

Fold along this line

This question is about a specification and is worth 9 marks.

Spend about 10 minutes on this question.

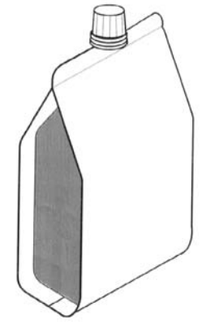

Figure 3

2 As a result of the survey the foil container **(Figure 3)** has been chosen for the new drink.

You have been asked to design the graphics for it.

AQAPOP has provided the following specification points for the graphics for the *front face* of the foil container.

Point 1 *AQAPOP* must be **clearly visible** on the front of the container.

Point 2 The design must **appeal** to **young people.**

Point 3 The design must be based on **physical activity** or **sport.**

Give **three** more specification points for the graphics.
Give **one** reason why you think each is important for a successful product.

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

Reason .....

.....
(2 marks)

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

Reason .....

.....
(2 marks)

(iii) Point 6 .....
(1 mark)

Reason .....

.....
(2 marks)

9

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 22 marks.

Spend about 20 minutes on this question.

3 The foil container **(Figure 4)** has been chosen for the new drink.

Produce a series of annotated sketches that show the development of your designs for the graphics for the *front face* of the foil container.

You must take into account the information provided by *AQAPOP* as well as your **three** *extra* **specification** points from Question 2.

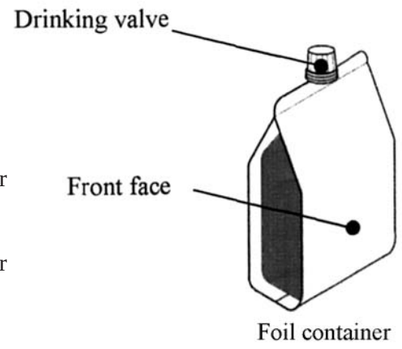

Figure 4

Marks will be awarded for:

(a)	effective use of the information from Question 2;	*(6 marks)*
(b)	quality of development of ideas;	*(5 marks)*
(c)	quality of your sketches;	*(5 marks)*
(d)	indicating colours used to enhance the product;	*(3 marks)*
(e)	evaluation of designs.	*(3 marks)*

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

—
22

This question is about presentation drawing and is worth 18 marks.

Spend about 20 minutes on this question.

4 Combine your best ideas from Question 3 and produce a colour presentation drawing **(Figure 5)** of the drink container using the specification provided and your additional points. *(18 marks)*

Marks will be awarded for:

(i) use of specification; *(6 marks)*
(ii) quality of drawings; *(4 marks)*
(iii) suitable layout; *(4 marks)*
(iv) quality of colouring. *(4 marks)*

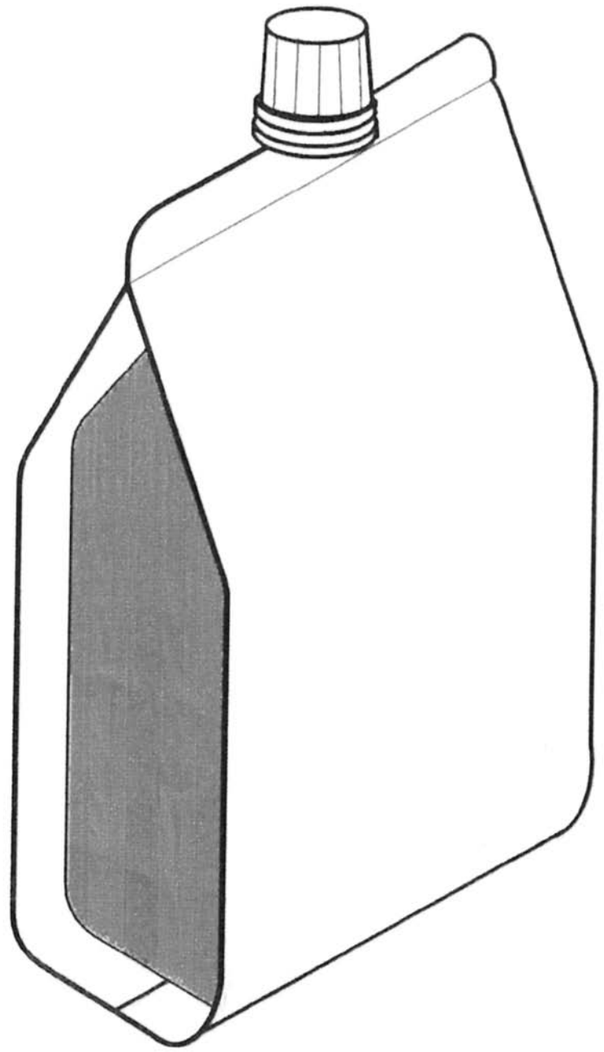

Figure 5

18

This question is about evaluation and is worth 10 marks.

Spend about 10 minutes on this question.

5 (a) Evaluate how well your final design for the *front face* of the drink container meets your original specification in Question 2.

(i) Point 2 The design must **appeal** to **young people**.

Evaluation

.....

.....

.....

(2 marks)

(ii) Point 3 The design must be based on **physical activity** or **sport**.

Evaluation

.....

.....

.....

.....

(2 marks)

(b) Evaluate your **three** *extra* **specification** points by briefly writing each in the space given, and explaining how well your graphic design met it.

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

Evaluation .....

.....

.....

(2 marks)

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

Evaluation .....

.....

.....

(2 marks)

(iii) Point 6 Your specification point was .....

Evaluation .....

.....

.....

.....

(2 marks)

10

This question is about materials and is worth 19 marks.

Spend about 15 minutes on this question.

6 Another type of drinks container is in the form of a hollow rectangular block, called a *Tetra Brik* **(Figure 6)**.

The material used is a *laminate* consisting of:

Polyethylene film;	(20%)
Paper;	(75%)
and, Aluminium foil.	(5%)

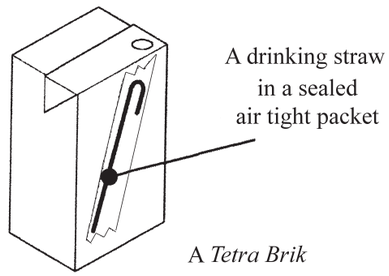

Figure 6

(a) Using sketches and notes explain the word *laminate* as used in this container.

(5 marks)

(b) Explain why each material is used in the *laminate* for this type of drinks container.

(i) Polyethylene film is used because

.....

.....

(2 marks)

(ii) Paper is used because

.....

.....

(2 marks)

(iii) Aluminium foil is used because

.....

.....

(2 marks)

(c) Explain why a *Tetra Brik* type of container is unsuitable for carbonated (fizzy) drinks?

.....

.....

.....

(2 marks)

(d) Study **Figure 6**, a *Tetra Brik*. The drinking straw is in a sealed air tight packet stuck to the outside of the container.

Give **two** reasons why the drinking straw is packaged in this way.

Reason 1 .....

.....

.....

(2 marks)

Reason 2 .....

.....

.....

(2 marks)

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

(i) Name the thermoplastic used to make drinks bottles.

.....

(1 mark)

(ii) Name the industrial process used to form plastic bottles.

.....

(1 mark)

19

This question is about Computer Aided Manufacture and Design and is worth 15 marks.

Spend about 15 minutes on this question.

7 (a) Photographs can be obtained from the digital cameras and used on graphic products.

Figure 7 is an original photograph and its manipulated image.

Original Photograph

Manipulated image

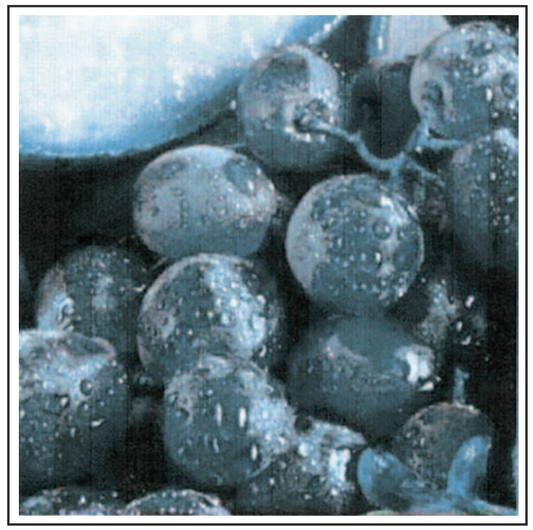

Figure 7

Explain the term *manipulation* with reference to the original photograph and its manipulated image in **Figure 7**.

.....

.....

.....

.....

.....

.....

(6 marks)

(b) The following are terms used when creating computer generated graphic images.

Explain each in this context.

(i) DTP .....

.....

.....

(2 marks)

(ii) Clip Art .....

.....

.....

(2 marks)

(iii) Web-site .....

.....

.....

(3 marks)

(c) **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)*

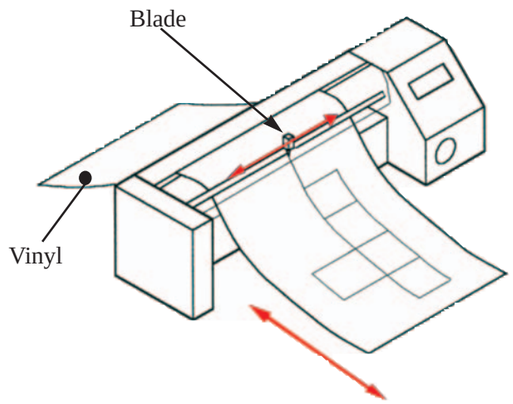

Figure 8

Across the material is the ..... axis

Along the material is the ..... axis

15

This question is about cultural, social and environmental issues, and is worth 24 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 ™ in this label.

AQAPOP™

.....

.....

.....

(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) Products are packaged for many reasons.

Explain the problems connected with the following:

(i) ● under packaging

.....

.....

.....

.....

(3 marks)

(ii) ● over packaging

.....

.....

.....

(3 marks)

(iii) ● deceptive packaging.

.....

.....

.....

(3 marks)

END OF QUESTIONS