

Surname					Other Names				
Centre Number					Candidate Number				
Candidate Signature									

Leave blank

General Certificate of Secondary Education
Summer 2003

**DESIGN AND TECHNOLOGY
GRAPHIC PRODUCTS (SHORT COURSE)**

3553/F

FOUNDATION TIER

F

Thursday 12 June 2003 9.00 am to 10.30 am

<p>In addition to this paper you will require:</p> <ul style="list-style-type: none"> a pen, pencil, ruler, eraser, pencil sharpener and coloured pencils. Marker pens and 45/60 degree set squares may also be used.
--

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 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 100.
- 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			
Total (Column 1)	→		
Total (Column 2)	→		
TOTAL			
Examiner's Initials			

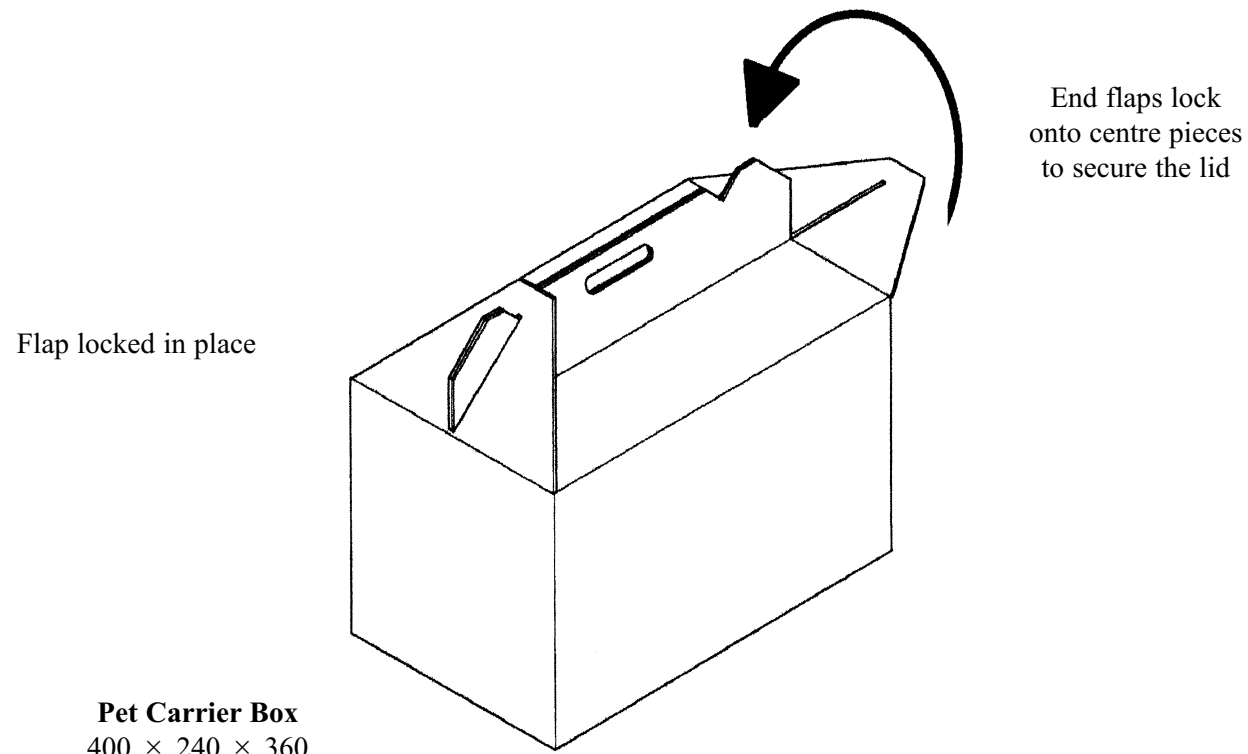
Read the following information carefully before you begin the questions which follow.

SMALL PET ANIMAL CARRIER BOXES

A voluntary charity looks after lost and injured small mammals in an animal shelter. The shelter is called "PETZONE".

The charity's volunteers want to raise funds by selling a range of suitable products. One of the proposed products is a box in which small animals and birds can be carried. Customers will buy and assemble the carrier box and use it to transport an animal safely.

The carrier box will be made of corrugated sheet material and printed with suitable decoration and relevant information. The basic shape of the carrier box is shown below.



Question 1 is about representing data and is worth 6 marks.

Spend about 5 minutes on this question.

1 A group of school children were asked about their pets, the results are shown below.

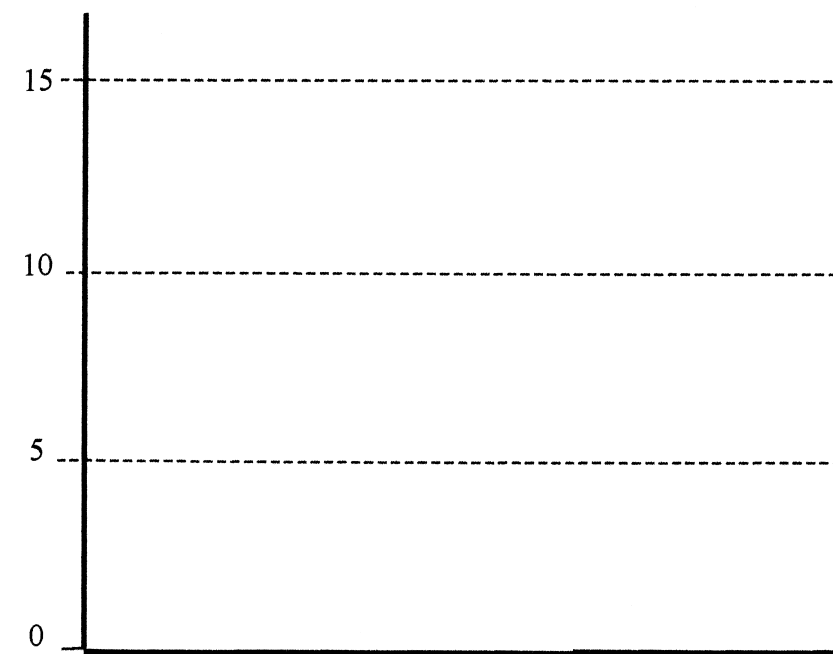
- 15 children had cats
- 10 children had dogs
- 6 children had hamsters
- 4 children had birds

Complete the unfinished bar chart and key of the results of the survey.

Marks will be awarded for:

- (a) adding the missing bar;
- (b) matching the key to the bars;
- (c) quality of colouring of the bars.

(4 marks)
(1 mark)
(1 mark)



KEY	
	Cats
	Dogs
	Hamsters
	Birds

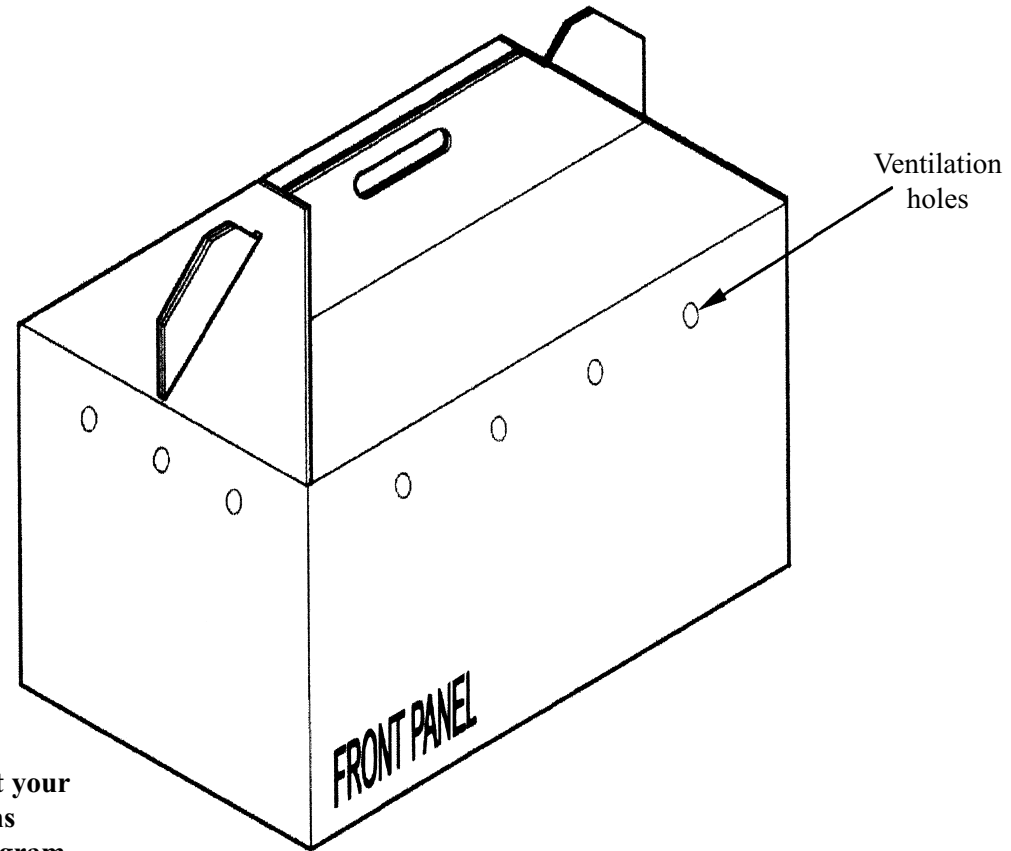
Bar chart showing how many children has each type of pet.

Question 2 is about designing and is worth 17 marks.

Spend about 15 minutes on this question.

The pictorial drawing below shows the pet carrier box with the lid locked in the closed position and ventilation holes.

The front panel is to be printed with suitable decoration and relevant information.



Do not put your designs on this diagram.

- 2 You are asked to make the pet carrier box more appealing to customers by adding a design to the front panel using black and one other colour on the *white-faced* sheet material.

You must follow the specification given below:

- the charity's name "*PETZONE*" in a suitable *letter style (font)* must be clearly visible;
- a *logo* that shows the charity's connection with animals must be included;
- use only *black and one other colour* on a white background.

On Sheet 3 sketch a variety of images and ideas suitable for the front panel that meet this specification.

Evaluate each point.

Marks will be awarded for:

- | | |
|--|-----------|
| (a) a variety of images; | (5 marks) |
| (b) quality of sketching; | (5 marks) |
| (c) use of colour; | (3 marks) |
| (d) clear, reasoned evaluation of ideas. | (4 marks) |

ANSWER QUESTION 2 ON THE NEXT SHEET

Question 2 continues on Sheet 3

Question 2, continued

Develop **two** ideas for *letter styles (fonts)* suitable for the name “*PETZONE*”.

Evaluate your ideas.

Evaluation

.....

.....

.....

Develop **two** ideas for a *logo*.

Evaluate your ideas.

Evaluation

.....

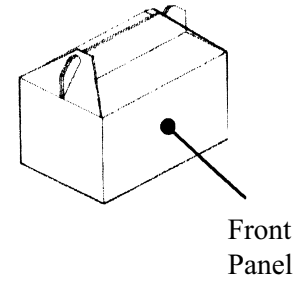
.....

.....

Question 3 is about presentation and is worth 24 marks.

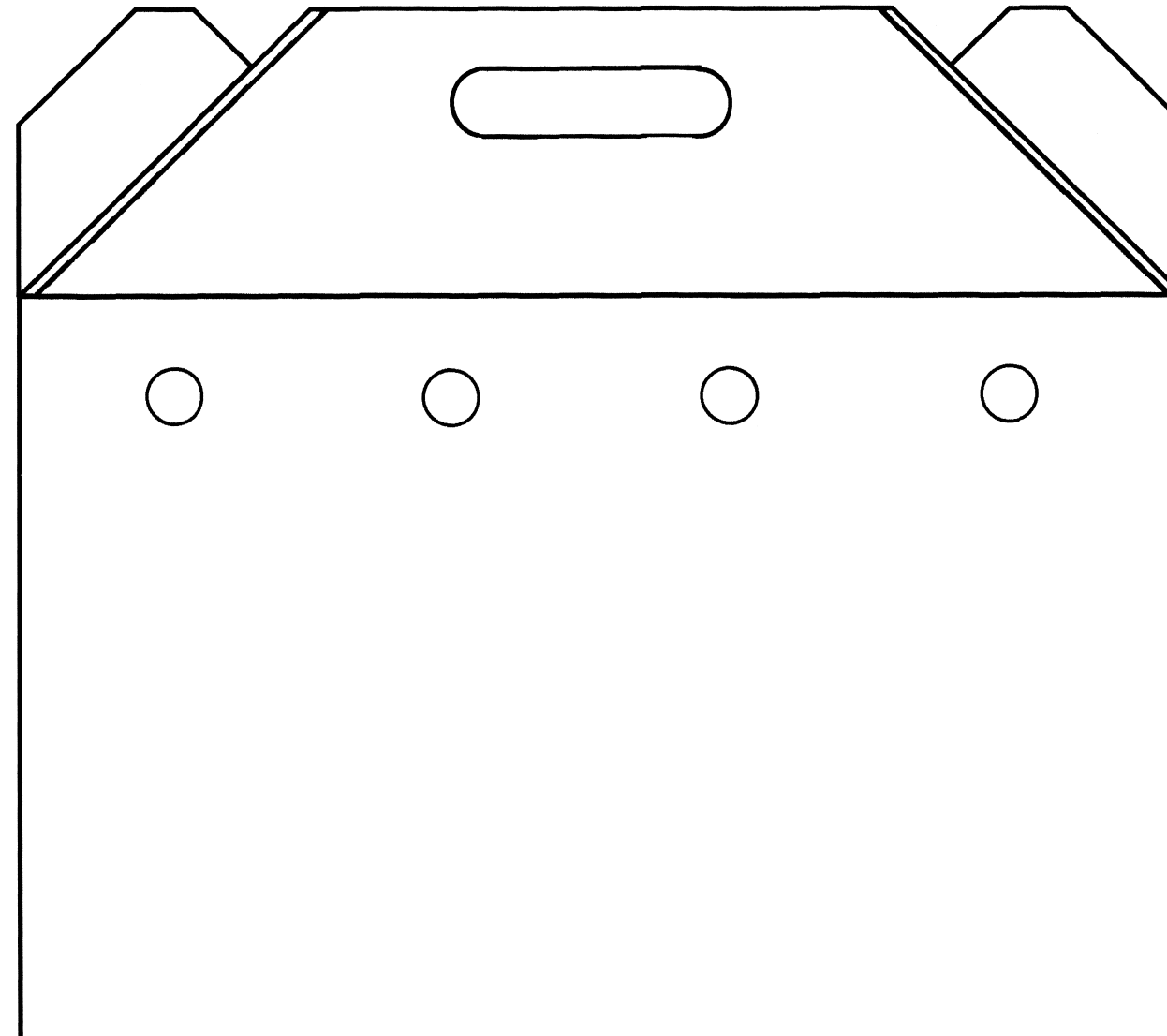
Spend about 20 minutes on this question.

- 3 (a) Combine your best ideas from Question 2 and draw a final coloured presentation drawing of the front panel on the given front view. (18 marks)
- (b) Using British Standard conventions add **two** important dimensions. (6 marks)



Marks will be awarded for:

- (i) use of the specification – charity name, *PETZONE* (4 marks)
– letter style (font)
– logo for the animal charity
– black and **one** other colour on a white background;
- (ii) quality of drawings; (5 marks)
(iii) combining development ideas; (3 marks)
(iv) suitable layout; (3 marks)
(v) quality of colouring. (3 marks)



Front view of pet carrier box

Question 4 is about materials and is worth 14 marks.

Spend about 15 minutes on this question.

4 The carrier pet boxes are made from corrugated card.

(a) Using pictorial freehand sketches and notes, show the construction of corrugated card.

(3 marks)

(b) Give **two** reasons with explanations, why corrugated card is a suitable material for a carrier box for small animals.

(i) Reason 1

Explanation

(2 marks)

(ii) Reason 2

Explanation

(2 marks)

(c) A label on some products has the message “*PETS ARE FOR LIFE*”. The ink used is a new “smart material”.

(i) What is meant by “smart material”?

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

(3 marks)

(ii) Explain how a thermochromatic ink reacts.

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

(2 marks)

(d) The pet carrier boxes are delivered to the charity shop “flat packed”.

Give an advantage of “flat packed” boxes to the manufacturer.

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

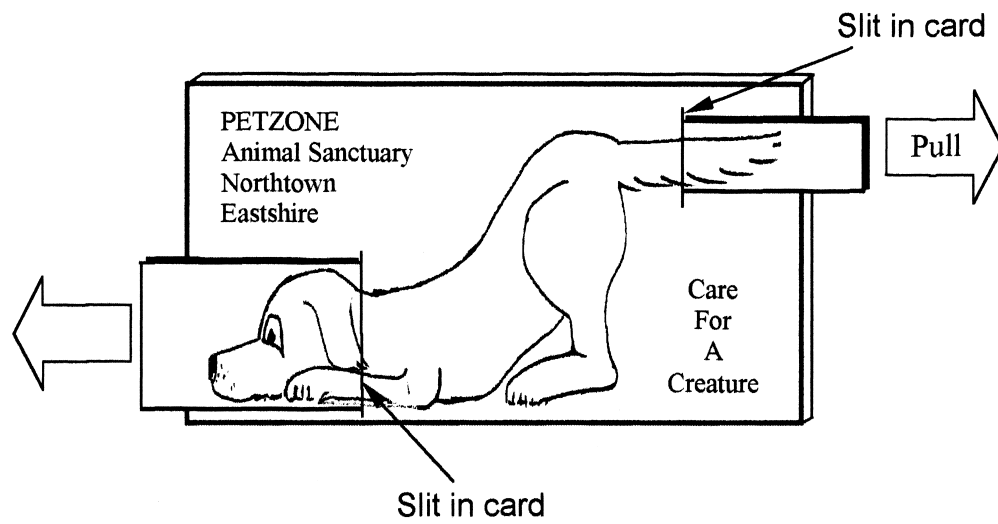
(2 marks)

Question 5 is about processes and manufacturing and is worth 13 marks.

Spend about 15 minutes on this question.

5 A promotional product made from card is shown below.

When the dog's tail is pulled its head and neck stretch.

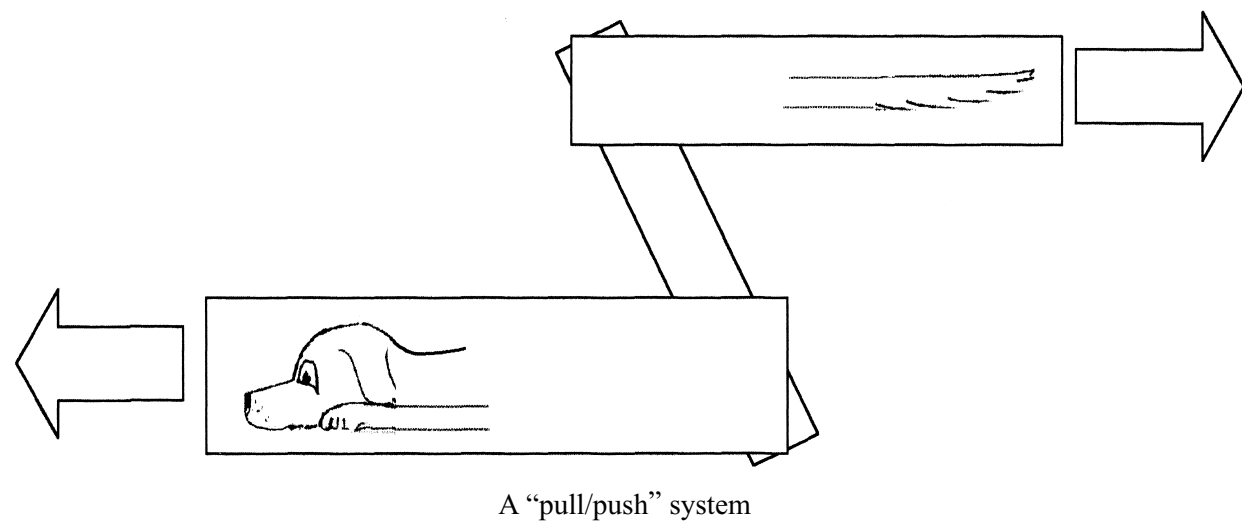


When the front of the promotional product is removed the “pull/push” system can be seen. It consists of sliders, a lever and pivots.

(3 marks)

A drawing of the “pull/push” system is shown below. The pieces of card must be loosely connected to allow movement.

(a) On the diagram below mark, with crossed centre lines, where pivots are needed for the “pull/push” system to work. The head must move more than the tail.



A “pull/push” system

(5 marks)

(b) The card strips are loosely connected with fasteners.

(i) Draw a suitable fastener.

(ii) Give the name of the fastener you have drawn in question (b)(i).

.....
(1 mark)

(c) Name **two** pieces of equipment you could use to make this promotional product in school, and give a safety consideration for each.

(i) Equipment 1
Safety consideration
.....
(2 marks)

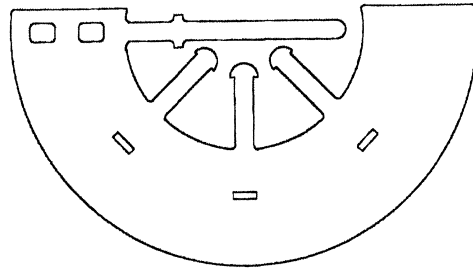
(ii) Equipment 2
Safety consideration
.....
(2 marks)

Question 6 is about quality control and computer systems and is worth 5 marks.

Spend about 5 minutes on this question.

The charity shop also sells veterinary collars. The collars are cut from 1 mm thick flexible polythene sheet.

The surface development (net) of a similar collar is shown.



The diagram of a dog wearing a veterinary collar is not reproduced here due to third-party copyright constraints.
The full copy of this paper can be obtained by ordering 3553F from AQA Publications
Tel: 0161 953 1170

(b) Simple decoration can be added to the plain white plastic collar with the addition of stickers cut out of self adhesive vinyl sheet.

A CAM system is to be used to cut out the designs.

(i) What do the letters CAM stand for?

.....
.....

(2 marks)

(ii) Give one advantage of using computer systems for multiple production.

.....
.....

(2 marks)

6 You have been asked to make 25 collars in your school.

(a) Which scale of production should be used? (Tick one box)

- | | | | |
|----------------------------|----------------------------|----------------------------|----------------------------|
| One-off | batch | mass | continuous |
| a <input type="checkbox"/> | b <input type="checkbox"/> | c <input type="checkbox"/> | d <input type="checkbox"/> |

(1 mark)

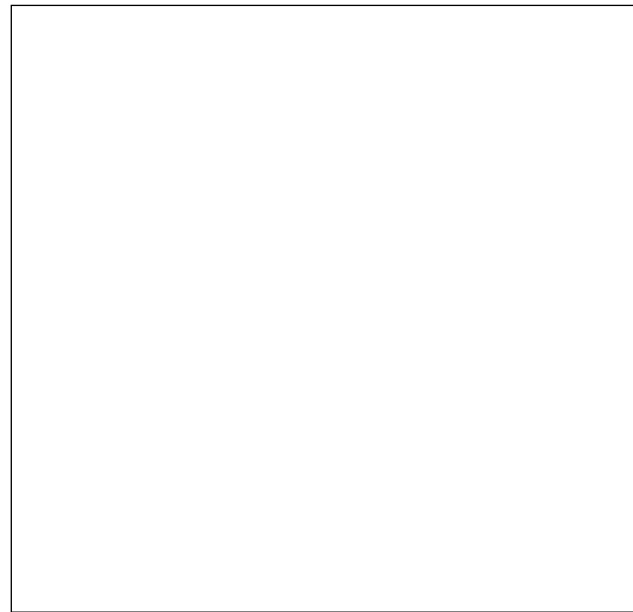
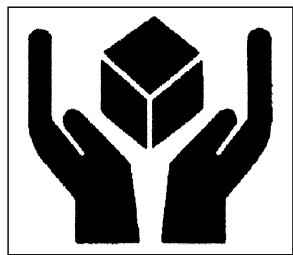
Question 7 is about environmental, cultural and social issues and is worth 21 marks.

Spend about 15 minutes on this question.

7 (a) In some cultures and societies certain colours and images on packaging are to be avoided. Why?
.....
.....
(3 marks)

(b) (i) Explain why signs and symbols are printed on packaging.
.....
.....
(2 marks)

(ii) Given below is a symbol showing that a package must be handled with care.
Draw a symbol in the same style that shows that the package should be sheltered from rain.



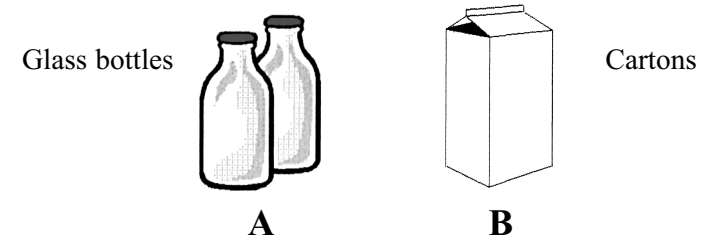
(6 marks)

Permission to reproduce all copyright material has been applied for. Efforts to contact copyright owners have been unsuccessful and AQA will be happy to rectify any omissions of acknowledgements in future papers if notified.

(c) Packaging is thrown away and ends up in *land fill* sites.
(i) Explain what is meant by the term *land fill*?
.....
.....
(2 marks)

(ii) Give a disadvantage of *land fill*.
Disadvantage
.....
.....
(2 marks)

(d) Milk is available in containers of different materials and designs. Two are shown below.



Choose either container and give **two** reasons why that container can be considered *environmentally friendly*.

My container is design

Reason 1
.....
.....
(3 marks)

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

END OF QUESTIONS