

Surname					Other Names				
Centre Number					Candidate Number				
Candidate Signature									

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General Certificate of Secondary Education
Summer 2003

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

3553/H

H



HIGHER TIER

Thursday 12 June 2003 9.00 am to 10.30 am

- In addition to this paper you will require:**

 - 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			

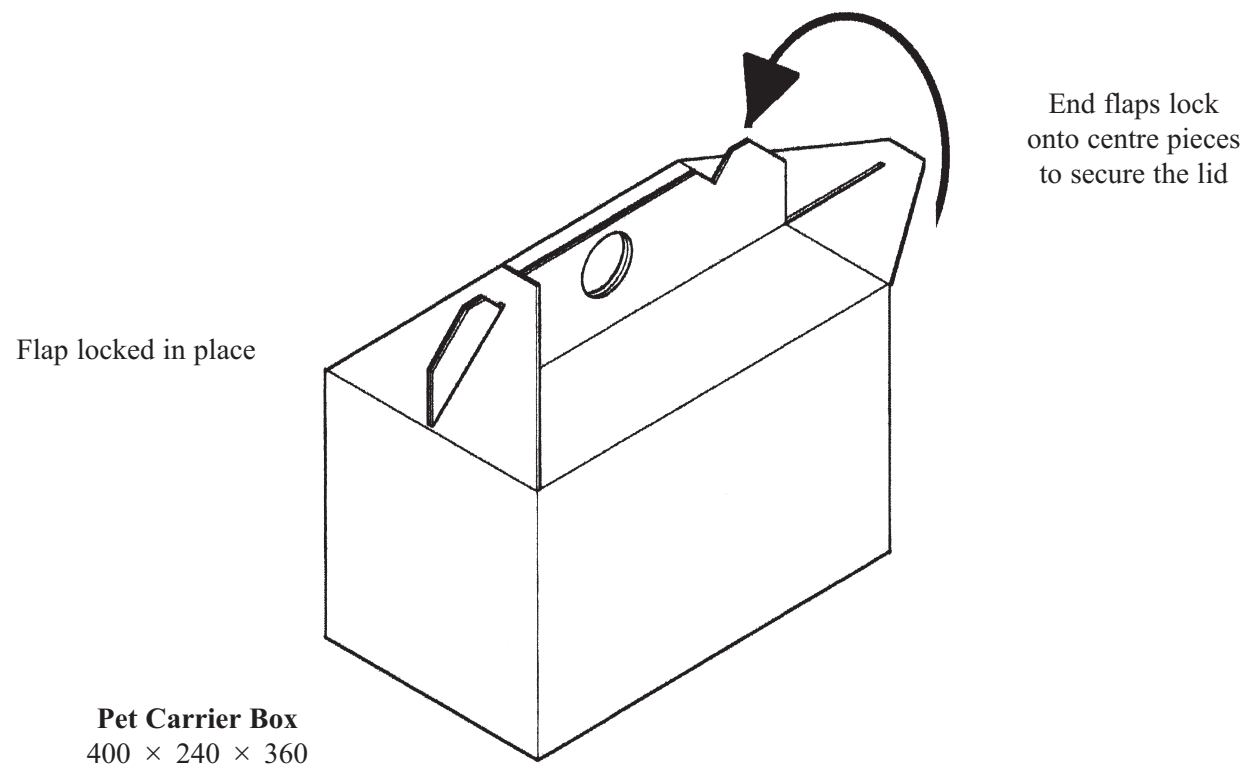
Read the following information carefully before you begin the questions which follow.

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 safely transport an animal.

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.

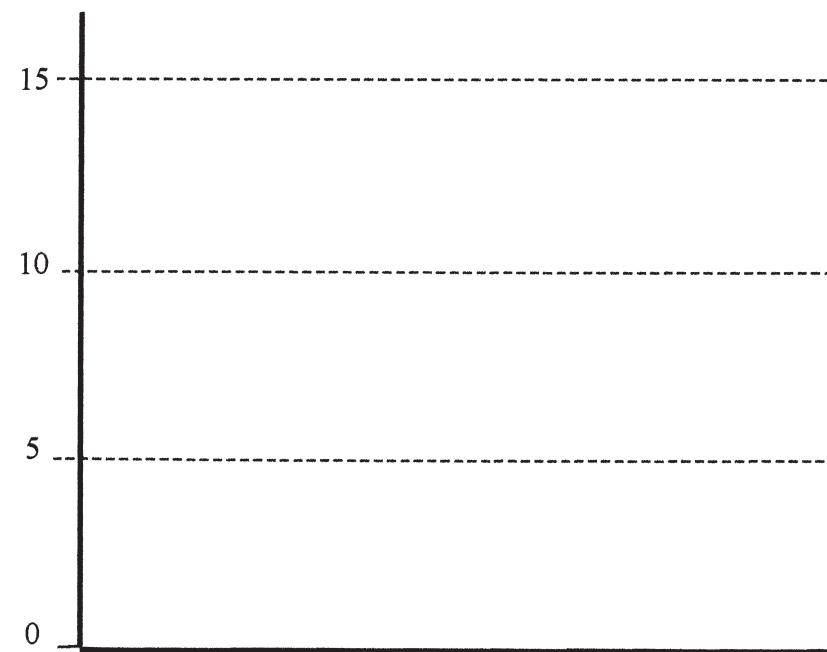
Marks will be awarded for:

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

(4 marks)

(1 mark)

(1 mark)



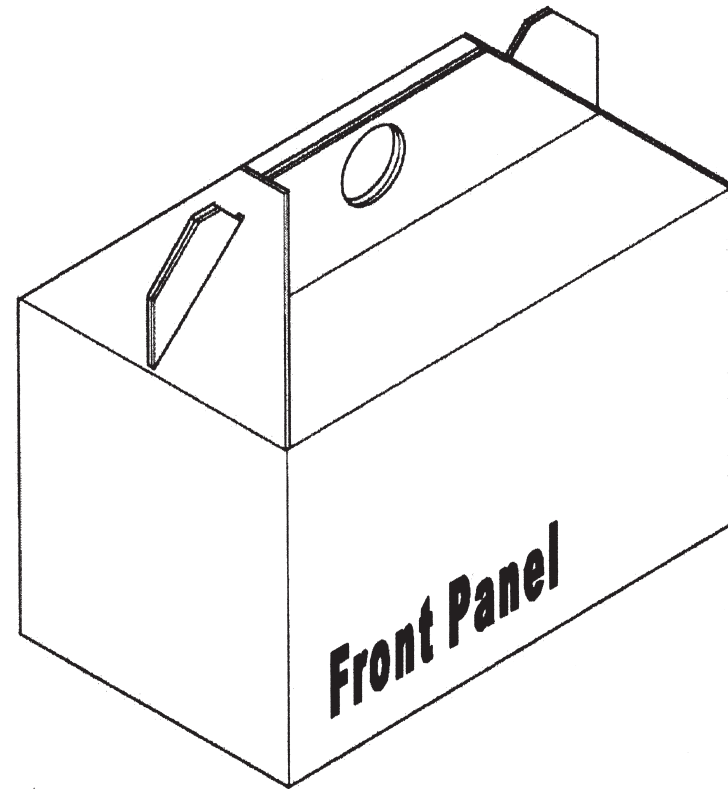
KEY	
	Cats
	Dogs
	Hamsters
	Birds

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

Question 2 is about designing and is worth 20 marks.

Spend about 20 minutes on this question.

The pictorial drawing below shows the pet carrier box with the lid locked in the closed position. 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;
- appropriate *ventilation* openings must be shown;
- 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 specification point.

Marks will be awarded for:

- | | |
|--|-----------|
| (a) a variety of images; | (7 marks) |
| (b) quality of sketching; | (5 marks) |
| (c) indicating colour; | (2 marks) |
| (d) clear, reasoned evaluation of ideas. | (6 marks) |

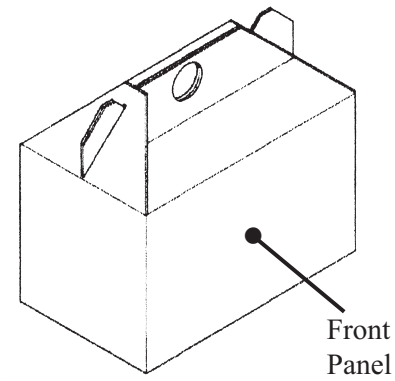
ANSWER QUESTION 2 ON THE NEXT SHEET

Question 2 continues on Sheet 3

Question 2, continued

In the space below use the specification to:

- (a) develop ideas for a *letter style (font)* for the charity's name *PETZONE*;
- (b) develop a *logo* suitable for an animal charity;
- (c) develop appropriate *ventilation* openings;
- (d) use black and one other colour;
- (e) *evaluations* of your ideas.



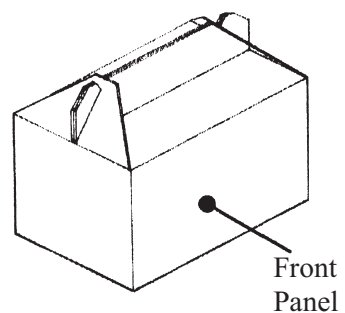
You must follow the specification given below:

- 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;
- appropriate *ventilation* openings must be shown;
- use only *black and one other colour* on a white background.

Question 3 is about presentation and British Standards and is worth 20 marks.

Spend about 20 minutes on this question.

The front view of the pet carrier box is shown.

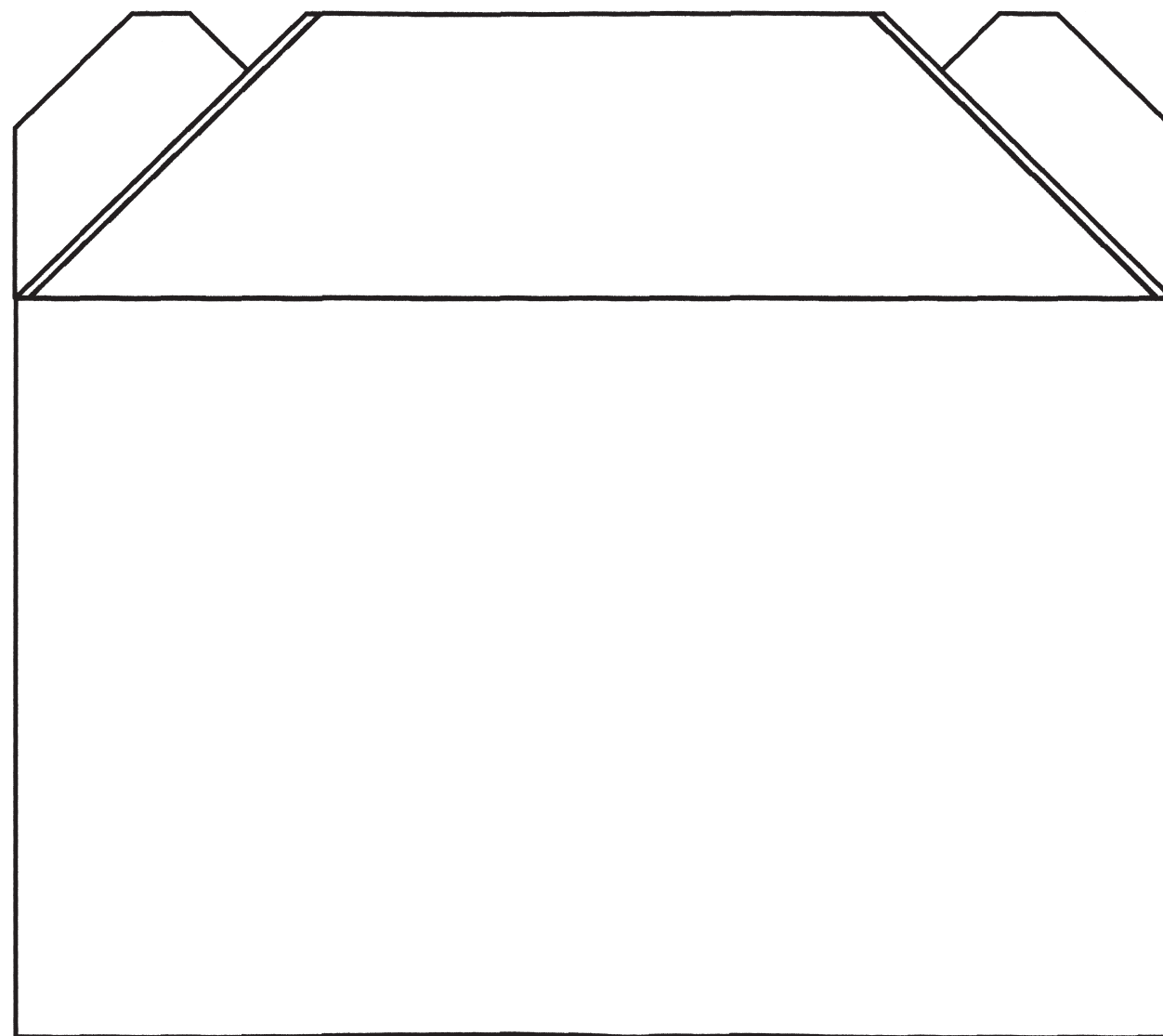


Length 400
Width 240
Height 360

Marks will be awarded for:

- (i) use of the specification – charity name, *PETZONE* (4 marks)
 - letter style (font)
 - logo for animal charity
 - maximum of three colours;
- (ii) quality of drawings; (5 marks)
- (iii) suitable layout; (4 marks)
- (iv) quality of colouring. (3 marks)

- 3 (a) Combine your best ideas from Question 2 and produce a colour presentation drawing on the front panel of the pet carrier box using the given specification. (16 marks)
- (b) Using British Standard conventions add the overall height and length to the given view. (4 marks)



Front view

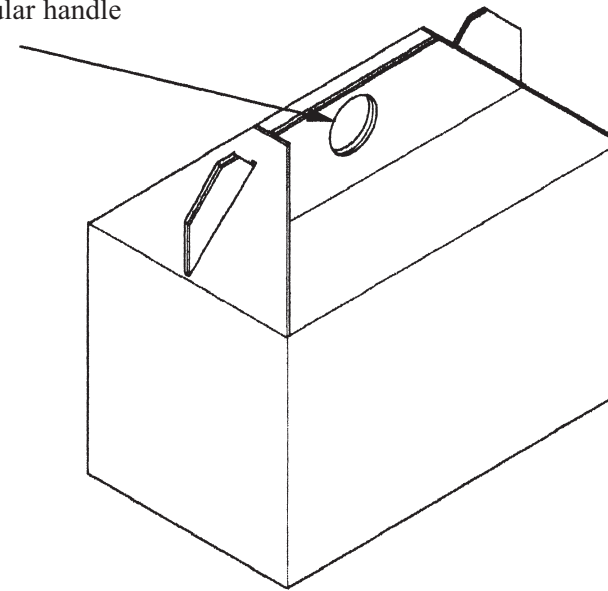
Question 4 is about evaluation and modifying a design and is worth 6 marks.

Spend about 5 minutes on this question.

When the pet carrier box opposite was tested the handle was found weak and uncomfortable.

- 4 (a) In the space below, redesign the cut out for the handle (3 marks)
- (b) Draw your modified handle design on the detail grid below. (3 marks)

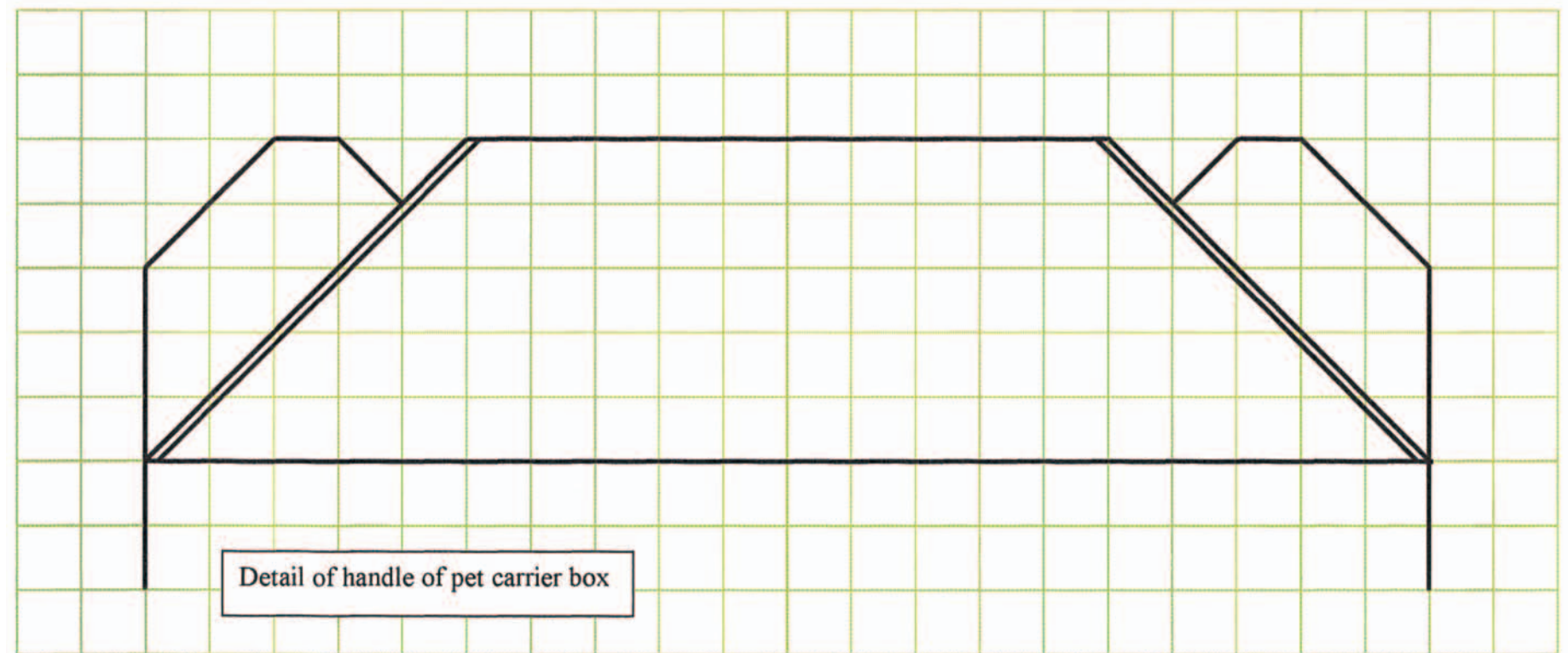
Cut out circular handle



Outline sketch of the pet carrier box.

Length 400
Width 240
Height 360

Space for ideas for the handle cut out.



Question 5 is about Third Angle Orthographic projection and is worth 10 marks.

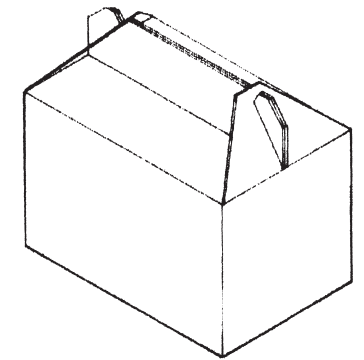
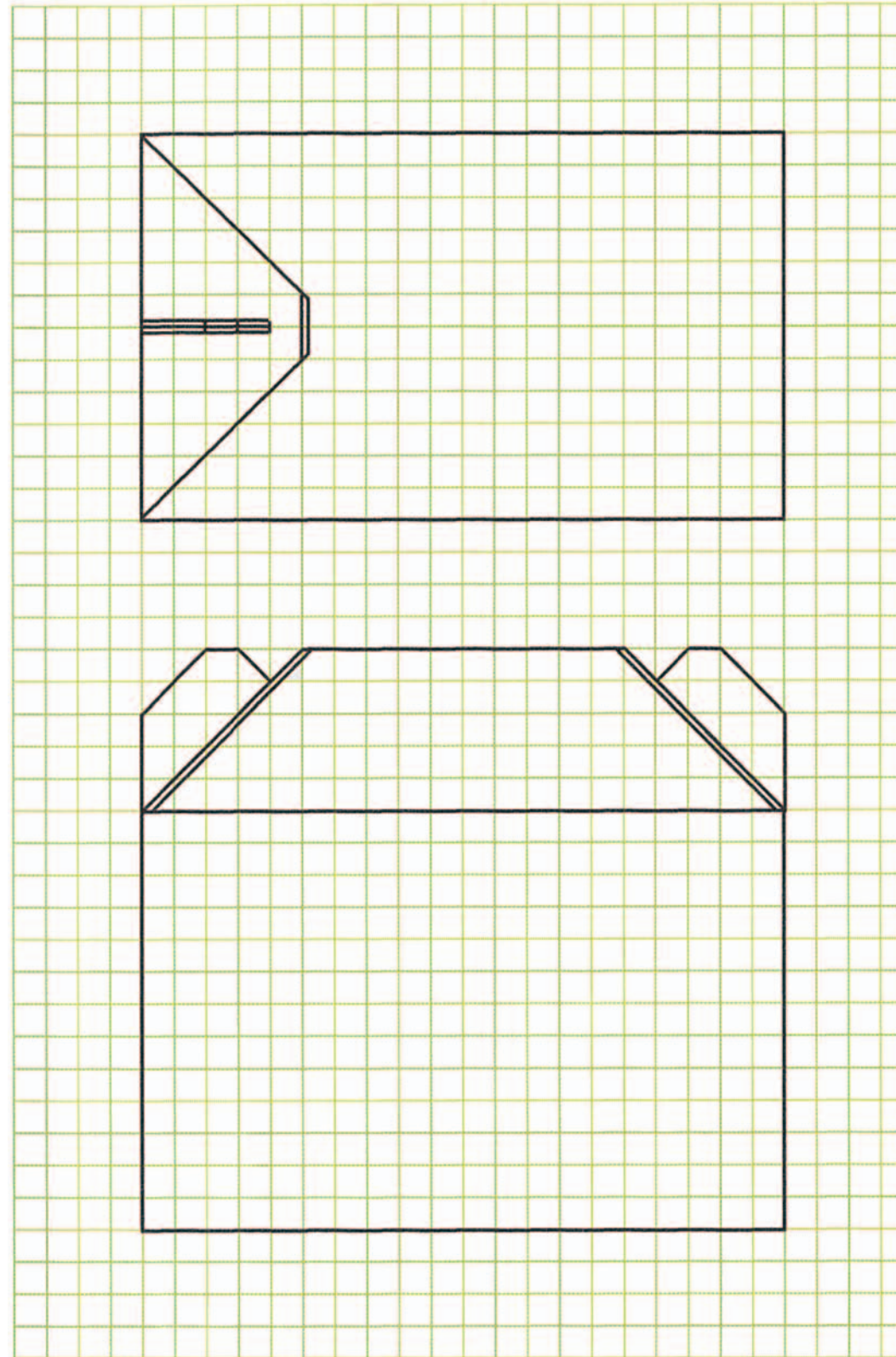
Spend about 10 minutes on this question.

- 5 The grid shows the front view and incomplete plan of the pet carrier box, drawn in third angle orthographic projection.

Complete the plan by adding the missing lines.

(10 marks)

DO NOT INCLUDE ANY OTHER DETAILS



Question 6 is about materials and is worth 19 marks.

Spend about 15 minutes on this question.

6 The pet carrier boxes are often made from corrugated cardboard.

(a) Using pictorial freehand sketches and notes, show the construction of corrugated cardboard. (3 marks)

(b) Give **one** advantage and **one** disadvantage of using corrugated cardboard for a pet carrier box. (2 marks)

Advantage

..... (2 marks)

Disadvantage

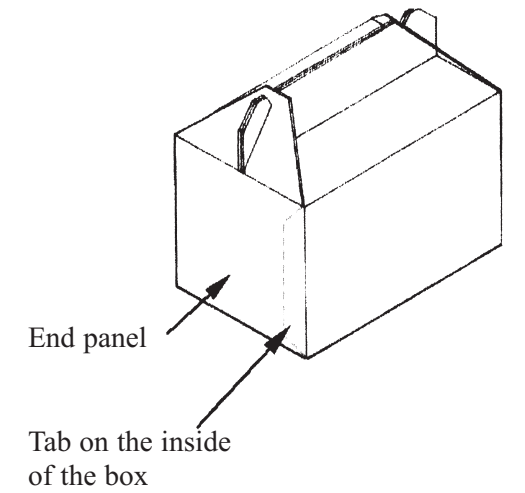
..... (2 marks)

(c) The corrugated card box is held together by “adhesive free” method of securing a tab to the end panel.

Using pictorial freehand sketches and notes show an “adhesive free” method of securing a tab to the end panel.

Marks will be awarded as follows:

- (i) sketches; (5 marks)
- (ii) notes. (2 marks)



(d) A label on some products has the message “PETS ARE FOR LIFE”. The ink used is a “smart material”. (3 marks)

(i) Explain the term “smart material”.

.....

..... (3 marks)

(ii) Explain how a thermochromatic ink reacts.

.....

..... (2 marks)

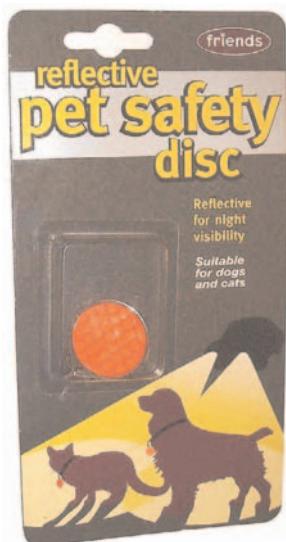
Question 7 is about environmental, cultural and social issues and is worth 19 marks.

Spend about 15 minutes on this question.

7 (a) Explain why, in some cultures and societies, certain colours and images on packages are to be avoided.

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

(b) Blister packs like the one shown are a popular way of packaging products.



(i) Give **one** reason why blister packs are popular with retailers.

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

(ii) Give **one** reason why blister packs are popular with consumers.

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

(iii) Give **one** reason why blister packs could be considered wasteful.

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

(iv) Name the non-renewable resource which provides the raw material for the “blister” element of the package.

.....
(1 mark)

(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) Some materials are *bio-degradable*. What does this mean?

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

(d) Designers are encouraged to create products that do not harm the environment.

Name **three** things that a graphic designer can do to reduce damage to the environment.

1

.....

.....

2

.....

.....

3

.....

.....

.....
(6 marks)

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END OF QUESTIONS