GCSE

272/02

DESIGN AND TECHNOLOGY
(SHORT COURSE)
FOCUS AREA:
RESISTANT MATERIALS TECHNOLOGY
Higher Tier

A.M. MONDAY, 2 June 2008

1 hour

	Leave Blank
Question 1	
Question 2	
Question 3	
Question 4	
TOTAL MARK	

ADDITIONAL MATERIALS

You will need basic drawing equipment and coloured pencils for this examination.

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. Where the space is not sufficient for your answer, continue the answer at the back of the book, taking care to number the continuation correctly.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.

*Answer **all** questions in the spaces provided.*

1. *(a)* (i) Complete the table below by placing these design process stages in the correct order.

[5]

Final evaluation   **Development**   **Analysis**   **Design brief**   **Initial ideas**

Design process stages

(ii) State the name of the design process stage in which designers would improve their ideas. [1]

....

(b) Explain why a designer might evaluate existing products before designing. [2]

....

....

(c) (i) Designers often make several prototypes or models before making the final product. Give **two** reasons why this is done. $2 \times [2]$

Reason 1: ....

....

Reason 2: ....

....

(ii) Describe **one** example of how CAD can be used to help in product modelling, testing or prototyping. [2]

....

....

....

2. *(a)* Product packaging is usually labelled with information. An example of packaging is shown below.

(i) Symbol **A** shows a barcode. Give **two** reasons why a barcode is used on packaging.

$2 \times [1]$

Reason 1: ....

Reason 2: ....

(ii) State what symbol **B** means. [2]

....

....

(iii) Other than to provide product information, state **two** functions of packaging. $2 \times [1]$

Function 1: ....

Function 2: ....

(b) Discuss the disadvantages of packaging products. [3]

....

....

....

....

3. *(a)* Satellite dishes are now available in a variety of colours as well as transparent.
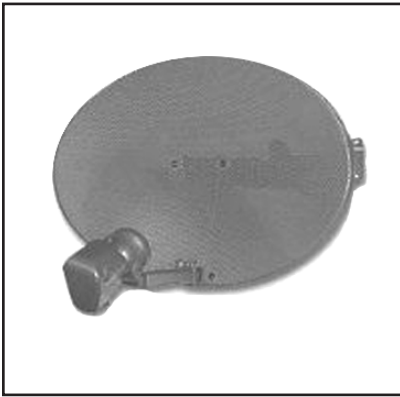
Standard black   *Transparent*   *Coloured*

Describe **one** positive effect using *transparent* satellite dishes may have on the environment.
[2]

....

....

(b) The design of television sets has changed over time.
Study the three television sets below.

Television A	**Television B**	**Television C**
• Standard screen TV.	• Widescreen TV.	• LCD TV screen.

State **one** *aesthetic* and **one** *functional* change that has been made to the televisions, and then explain how each change has benefited or helped the consumer.

(i) Television: ....

State one *aesthetic* change: .... [1]

Explain how this *aesthetic* change has benefited or helped the consumer: ....

....

.... [2]

(ii) Television: ....

State one *functional* change: .... [1]

Explain how this *functional* change has benefited or helped the consumer: ....

....

.... [2]

(c) The cost of LCD screen televisions has fallen significantly since their introduction.
Explain **two** reasons for this. 2 × [2]

Reason 1: ....

....

Reason 2: ....

....
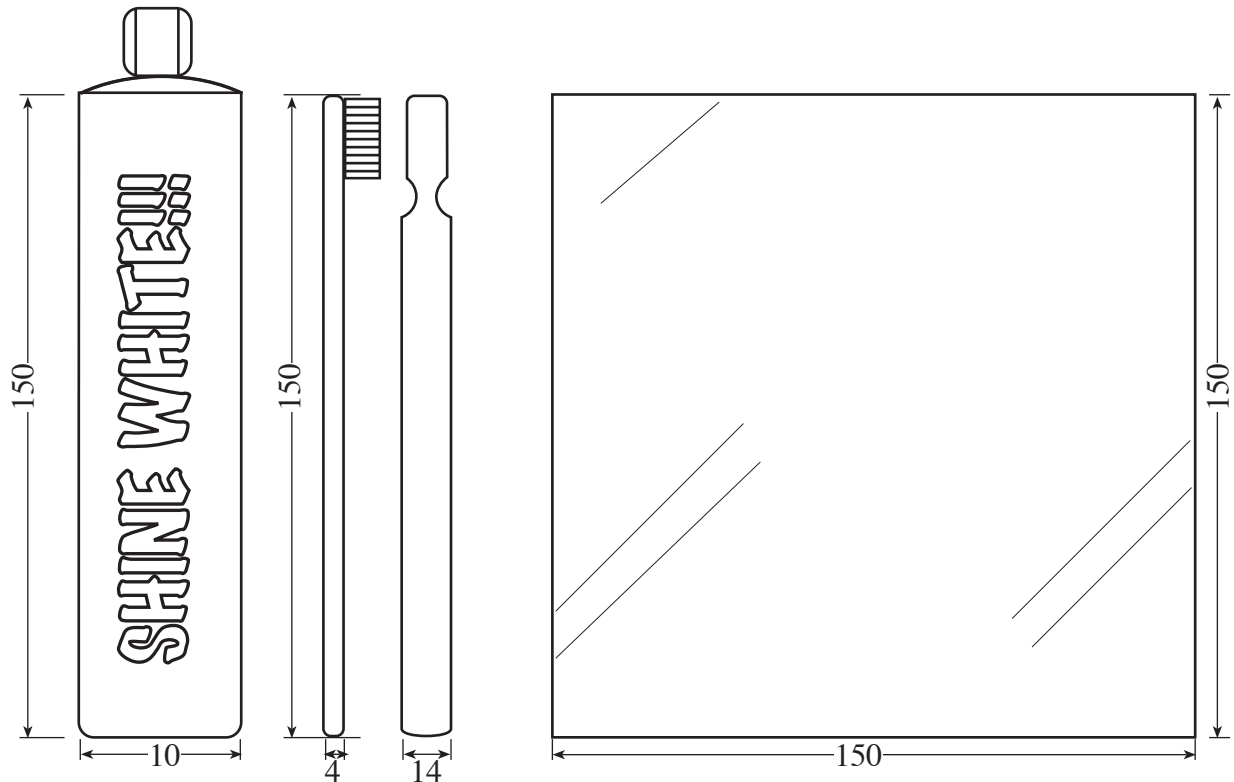
Turn over.

4. You have been asked to design a free standing 'bathroom tidy' that must incorporate the following items:

four toothbrushes;

one tube of toothpaste;

one 150mm x 150mm mirror.

All dimensions in millimetres.
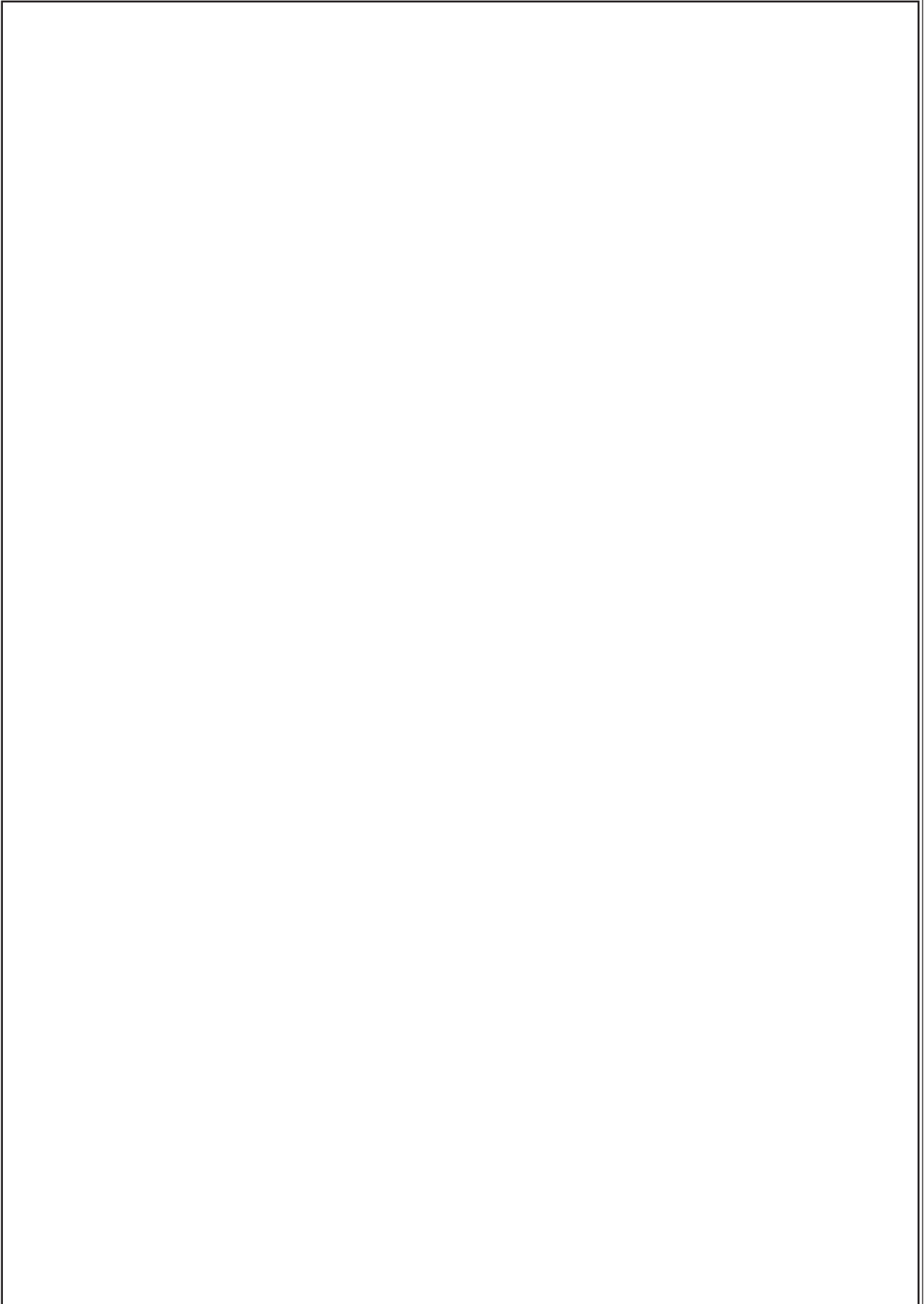

NOT TO SCALE

Specification

The design must:

- be freestanding;
- hold four toothbrushes, one tube of toothpaste and include a mirror;
- be small enough to sit on a window sill;
- be aesthetically pleasing.

Sketch your solution on the opposite page.

Marks will be awarded for:

  (i)   clear details of the overall design of the bathroom tidy showing how the mirror, toothbrushes and paste are held in place;   [6]
 (ii)   show how the design can fit onto a small space;   [2]
(iii)   constructional details of the stand;   [6]
(iv)   reference to the materials, components and processes used;   [3]
 (v)   three critical dimensions;   [3]
(vi)   quality of communication.   [5]

Turn over.

For continuation only.