

Candidate Name	Centre Number	Candidate Number
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GCSE

273/02

DESIGN AND TECHNOLOGY

(SHORT COURSE)

FOCUS AREA:

SYSTEMS AND CONTROL 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, a calculator 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 × [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 × [1]

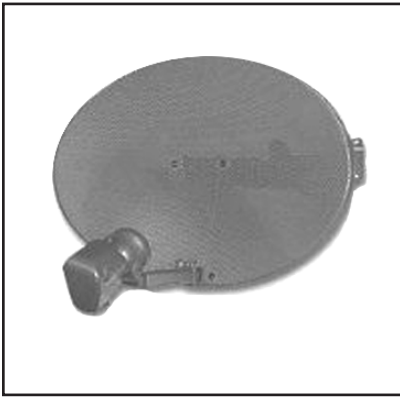
Function 1:

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

- Standard screen TV.

Television B

- Widescreen TV.

Television C

- 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:

4. A clown who works as a children's entertainer, requires an animated / moving advertisement to promote his act.

SPECIFICATION

The system must:

- start when a switch is pressed;
- be free standing, portable and battery powered;
- produce a fun / novelty movement to promote the entertainer.

Sketch your design in the boxes given.

Marks will be awarded for:

- | | |
|--|-----|
| (i) a labelled sketch showing the front of the advertisement; | [5] |
| (ii) a labelled circuit diagram showing details of any electronic components used; | [4] |
| (iii) labelled details of the mechanical system used to create movement; | [4] |
| (iv) including three important dimensions; | [3] |
| (v) names of any materials used; | [3] |
| (vi) quality of communication. | [6] |

(i) Labelled sketch showing the front of the advertisement.

(ii) Labelled circuit diagram.

(iii) Labelled details of the mechanical system.

