

## Design and Technology GA 3: Written examination

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### GENERAL COMMENTS

Areas of strength and weakness:

- most students completed all sections of the paper
- some marks were lost because questions were not read correctly or were poorly interpreted
- students generally had a good understanding of marketing concepts and a high proportion of students answered all of the marketing questions
- the design option section had the lowest level of response
- the drawing skills of many students were poor and they were unable to clearly communicate their ideas, annotations were not included or did not in many cases relate to the specific points included at the start of Question 5
- questions about mass-production were an area that students had difficulty in answering (some responses referred to the marketing of products rather than mass production).

General design skills stood out as the weakest area of response in the 2001 examination. Quick sketching techniques need to be developed so students can adequately communicate their ideas within the time limit. It was obvious that many students lacked a general understanding of the basic elements and principles of design. Many could not draw a basic sketch that was legible enough to convey an idea of their design.

### SPECIFIC INFORMATION

#### Section A

##### Question 1 – Material scenarios

A few students answered all scenarios instead of answering one and consequently struggled to finish the examination.

##### a. (Average mark 0.92/Available marks 1)

Many students were unable to name a specific material. For example, they used general terms like cotton or hardwood instead of specific names like Polyester Cotton Lawn or Victorian Ash.

##### b. (3.03/4)

Materials characteristics were confused with properties. Some students were confused about properties of materials but were able to logically justify why their chosen material was suitable for its purpose.

##### c. (1.74/2)

The steps to repair the product were logical and generally well done.

##### Question 2 – Marketing

Most student responses indicated a good understanding of marketing concepts.

##### a. (1.71/2)

Magazines or specific customers were both correct answers. A well thought out answer stated that the potential customer was a person who was concerned about their pet's well being.

##### bi. (2.38/3)

**Product** – Most students were able to name three marketing features from the advertisement.

##### bii. (1.59/2)

**Packaging** – A few students did not read the word 'packaging' and simply gave more features of the product. Good answers included: handles on the package, a clear window to see the product, recyclable packaging, and protective packing inside the box.

##### biii. (1.8/3)

**Price** – Most students answered this correctly. Good answers included cost of materials and production, cost of similar products, how much potential customers are prepared to pay, profit margin, distribution costs and promotion costs.

##### biv. (3.02/4)

**Promotion** – Most students answered this question well, indicating that they knew other methods of promoting the pet bowl. A common response was 'television' as this would reach the largest target audience. Pet shop demonstrations with pamphlets being handed out to interested customers was another common response.

##### bv. (1.92/2)

**Place** – This question was generally answered well by students. Common responses were: pet shop, department store, large hardware shop, stock feed supplier, and pet aisle in the supermarket.

**ci. (0.9/1)**

The volume of sales peaked at the maturity stage of the product's life cycle.

**cii. (1.44/2)**

Possible causes for peaks in sales included company expansion, increased advertising, competitors drop out of the market, seasonal purchases, lower price offer to gain competitive edge.

**ciii. (1.22/2)**

Other products in competition with the water bowl were: designer ceramic bowls, metal bowls, other self-filling bowls.

**civ. (1.71/2)**

Most students were able to provide two advantages of the water bowl over its competitors.

**cv. (1.42/2)**

Disadvantages of the water bowl was answered well by most students.

**d. (1.13/4)**

This question proved to be the most challenging of the marketing questions. Many students did not explain the connection between market mix and the product life cycle. For full marks, students needed a response such as the following: the market mix is the combination of elements that make up a marketing strategy, for example people, price, place and promotion. The combination of these elements vary according to where the product is in its life cycle, for example at the introduction stage there would be a greater emphasis on promotion to make customers aware of the product.

**e. (2.39/3)**

This question was well answered. Most students gave three clear and logical responses. Good reasons for the decline in sales included: product recall, changes in technology, changes in customer needs, lack of advertising, competition/rival company produced a better product.

**f. (1.94/4)**

Some students did not discuss how the decline of a product's life cycle could be delayed and simply gave two dot points indicating reasons for a delay. For full marks, students were expected to discuss how the decline could be avoided. For example, if a company noted that their product sales were dropping they could modify their product so that it better suited the customers needs and/or wants, change the packaging, promote the product to a wider audience, decrease the price to make it more competitive.

## **Section B**

### **Question 3 – Specifications (3.12/4)**

Generally students understood that the specifications (constraints and considerations) came directly from their chosen brief.

Answers relating to the specifications were:

- function and performance of the product selection of materials
- construction of the product and the complex processes used
- size or measurements of the product.

**i.**

Function and performance of the product.

**Fibres/yarn fabrics** – The garment's main function is the ability to be mixed and matched to create a distinctive look to wear out to restaurants with a formal dress code. The styles need to vary so that they can be mixed and matched to create an illusion of an extensive wardrobe.

**Wood/Metal** – The product's main function is to divide an open living area whilst still letting light through the divider so as not to darken the other space.

**ii.**

Selection of materials

**Fibres/yarn fabrics** – The material the garments are made from need to be drip dry and easy-care for packing.

**Wood/metal** – The materials used need to be lightweight so that the divider can be easily moved.

**iii.**

The construction of the product/the complex processes used

**Fibres/yarn fabrics** – The garments must be constructed using at least three complex processes to ensure that a distinctive look is created.

**Wood/metal** – The room divider must be constructed using at least three complex processes to ensure that it is strong, safe and a quality product at the cutting edge of design.

**iv.**

Size or measurements of the product

**Fibres/yarn fabrics** – The garment’s constraint is that it must fit a size 14 as this is the size of the client.

**Wood/metal** – The room divider’s main constraint is that it has to be 1500mm high x 2000mm long x 300mm deep.

#### **Question 4 Criteria for evaluation**

The criteria for evaluation had to be written as questions. The criteria also had to relate directly to the specifications or no marks were awarded. Most students wrote logical questions that related to the specifications. To achieve full marks students had to justify the relevance of each question.

##### **(1.67/3)**

The function and performance of the product

**Fibres/yarn fabrics** – A response could be: have I created a variety of styles of garments which can be mixed and matched to give a different look each time they are worn as a different combination?

Justification: The purpose of the four garments is that they can be mixed and matched to create several different looks and that one of these combinations is suitable to wear to a restaurant.

**Wood/metal** – Does the room divider divide the room without darkening it?

Justification: The divider needs to divide the room without darkening it so that natural lighting can be used during the day.

##### **ii. (1.66/3)**

The selection of materials

**Fibres/yarn fabrics** – Do the garment styles take advantage of drip-dry non-iron fabric properties?

Justification: My sister has asked that the clothes be made from drip-dry non-iron fabric for easy care as she will be backpacking. Many easy care fabrics drape well or are transparent so perhaps some of these qualities could influence the design of the garment.

**Wood/metal** – Have lightweight materials been used in the construction of the divider?

Justification: The divider must be easily moved and modules easily disconnected. Lightweight materials will assist in this process.

##### **iii. (1.21/3)**

The construction of the product/the complex processes used

**Fibres/yarn fabrics** – Have the three complex processes been used in the construction of the garments?

Justification: To make the garments distinctive, complex processes will improve the quality and finish, and enhance the styling of the garments.

**Wood/metal** – Have the three complex processes been used in the construction of the divider?

Justification: Complex processes used in the construction of the divider will improve the quality and finish, and could be used as a feature in the styling of the divider.

##### **iv. (1.58/3)**

The size or measurements of the product

**Fibres/yarn fabrics** – Are the garments the correct size for my sister who wears size 14 and is 160 cm tall?

Justification: The garments need to fit my sister correctly as she is travelling and needs to be comfortable.

**Wood/metal** – Has the divider been made to the client’s size constraints?

Justification: The divider must be made to the specified size as its size is relevant to the room it is dividing.

#### **Question 5 – Design Option (7.2/15)**

The general brief responses were disappointing. The quality of sketches were poor and creativity of responses limited. A typical general brief student response was, a statue, carved from wood or modelled from clay. ‘Reflecting interests’ usually consisted of a figure with a surfboard under its arm or something similar. More than half the students completed the Wood/metal brief. The quality of sketches was weak: they were unclear, not annotated to specific criteria, poorly drawn, and not coloured. Textile responses were not generally as clearly drawn or creative (compared with previous responses in Technological Design and Development). More successful students were able to clearly convey their design, demonstrate some creativity and annotate all four garments.

Two of the more successful responses are presented as samples at the end of this report.

#### **Question 6 – Evaluation**

Most students were able to evaluate their product to some degree but there were few excellent responses. Some students did not relate the evaluation comments back to their specific evaluation questions.

A sample response follows:

##### **a. (1.41/3)**

###### **Function and performance**

Garment 1 is formal in style with its draped black chiffon bodice and can be worn with Garment 2 (the black crepe pants) for a formal look. Garment 3 is a sleeveless button front top made from turquoise embroidered transparent fabric and can be mixed and matched with jeans. Garment 4 is a pair of pull-on purple lycra pants that can be worn with t-shirts or with garments 1 or 3, all creating different quite different looks.

**b. (1.34/3)**

**Materials**

The materials used were polyester crepe, embroidered nylon, lycra and polyester chiffon. These are all drip dry and easily cared for. They will compact easily for packing and will require no ironing when unpacked. The fabric colours are turquoise to match with client's shoes, black for formality and purple for a distinctive and fashionable look.

**Question 7 – Mass production**

Some students interpreted this as a marketing question but it related to mass production and the factors had to relate specifically about the product or the processes of manufacturing. If students had read more carefully they would have been aware that Question 8 referred to modification of the design to make mass production more feasible.

A sample response follows:

**i. (1.32/3)**

**Factor – Machinery**

There is hand carving on the divider which is one of the main design features. This would be too expensive to reproduce in huge quantities by hand so machinery will need to be leased to replicate this process.

**ii. (1.09/3)**

**Factor – Availability of materials**

A large quantity of materials will be needed to mass produce the room divider so it is important to check if enough materials will be available within the time limit.

**iii. (0.87/3)**

**Factor – Skilled labour**

Skilled workers will need to be employed to make the dividers ensuring that quality products will be produced. Labour costs will also determine local or off shore production.

**iv. (0.67/3)**

**Factor – Cost**

Materials, labour, production, distribution and marketing costs will need to be estimated to establish the overall cost of the product. Market research would also need to be conducted to see if production will be worthwhile.

**Question 8 – Mass production**

Most students answered this section well although some had difficulties explaining their ideas.

**Modification**

**a. (0.6/1)**

Make the divider in four sections instead of three so that standard size sheets of timber can be used.

**b. (0.86/2)**

Standard size sheets of timber would save on material wastage thus reducing costs.

**Quality control**

**ci. (0.6/1)**

**Students were asked to name a point at which a quality check would occur.**

Most students were able to name a logical quality control checkpoint.

- some students gave very general responses
- a good answer specified where in the production the check occurred, e.g. when materials arrived ready for construction.

**cii. (1.04/2)**

**What is being checked?**

- a general response: 'materials'
- a good response, indicated specifically what was being checked, for example the materials are checked for any defects so that these defective materials are discarded and not used in production.

**ciii. (0.95/2)**

**Why is this check needed?**

- a general response: 'to ensure a quality product'
- a good response, indicated specifically why the check is needed, for example this check is needed to ensure that defective materials are eliminated at an early stage and not used in the production. Faulty products cost the manufacturer money and reputation.

all garments can be worn to a restaurant with a strict dress code. All are designed for a semi-formal/formal occasion.

ANNOTATED DESIGN OPTION

\* all outfits incorporate colours that can be worn together and with aqua heels/shoes

\* all outfits design for size 14 body and 160cm tall height

\* tops and bottoms can go with each other in any combination

relatively high waisted for comfort.

sheer netting fabric (hot pink)

160cm

white silk skirt

160cm

embroidered stripes down the side (cotton) (aqua cotton)

high waisted and no waist band for comfort.

aqua silk ruffle going around the end of the skirt on an angle (current fashion trend)

aqua lace stitched on to front  
cotton black underlay to emphasise bright colours  
comes out a bit lower to add a layered look.

adds an exciting touch to the skirt. Adds an individual edge.

\* all colours go with brown hair

\* all colours are bright as specified by client

S214

S214

shoulders emphasised

contemporary one shoulder look

loose fitting to flatter shape

black sequined edging

off the shoulder - current fashion trend holds the off the shoulder look in place.

bright pink lycra

tight waisted to emphasise curves

160cm

\* all garments are inspired by current fashion trends

black sequined  
160cm aqua  
silk with toning singlet adds a good shape to the garment

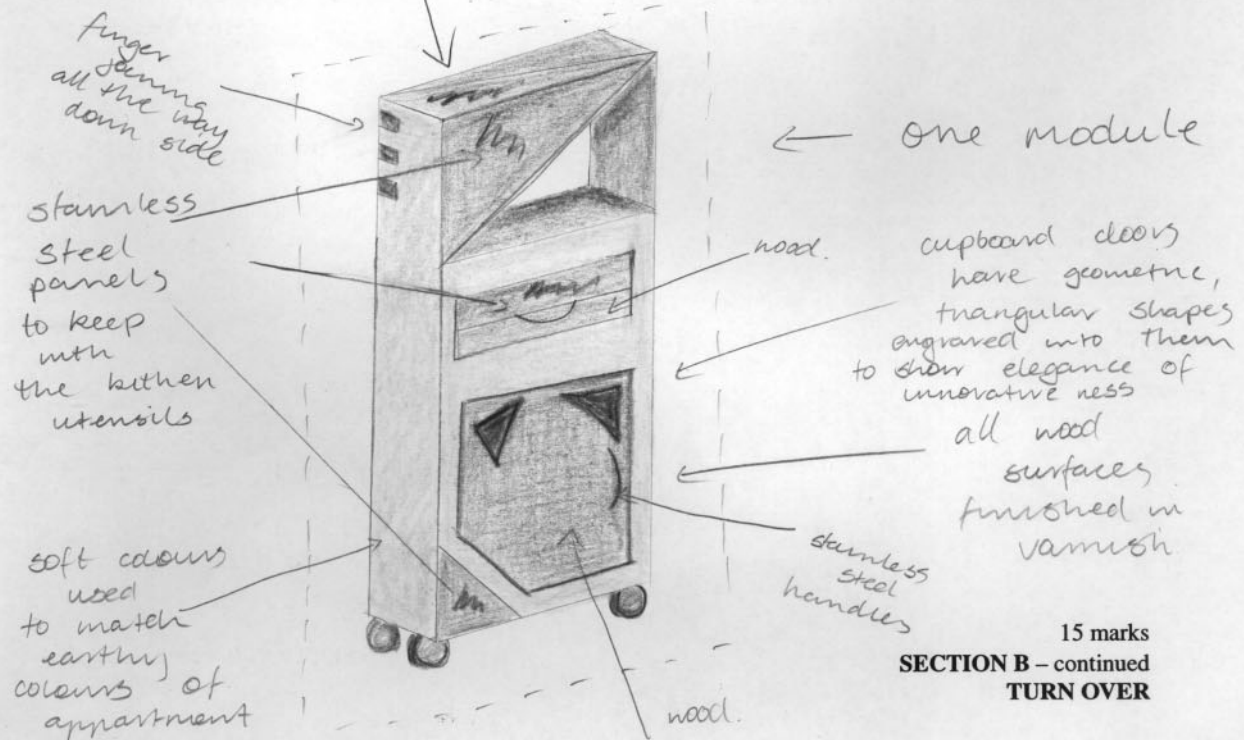
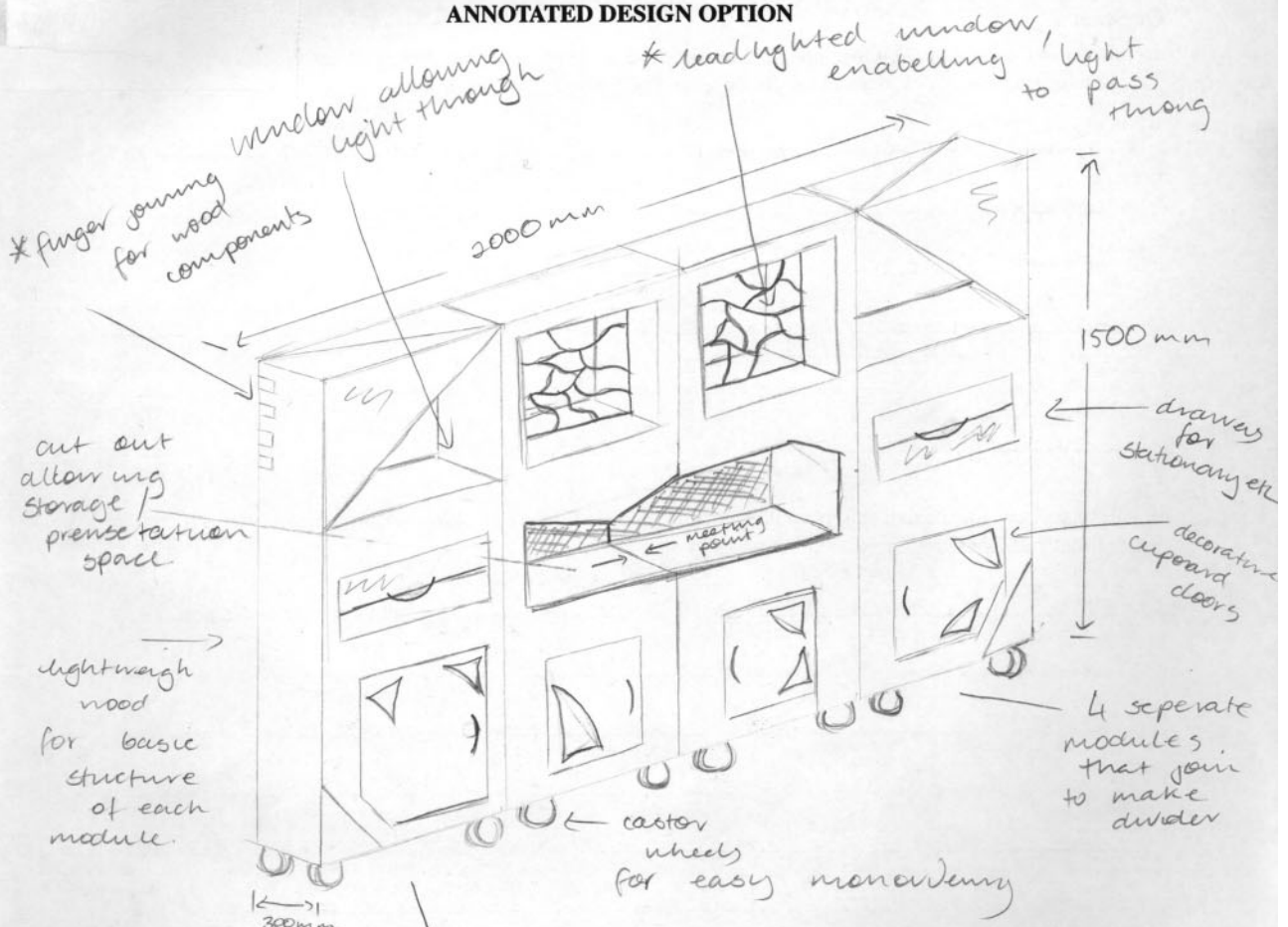
aqua lycra

S214

15 marks  
SECTION B - continued  
TURN OVER

S214

ANNOTATED DESIGN OPTION



15 marks  
SECTION B – continued  
TURN OVER