



Victorian Certificate of Education 2002

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Letter

Figures

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Words

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DESIGN AND TECHNOLOGY

Written examination

Friday 8 November 2002

Reading time: 11.45 am to 12.00 noon (15 minutes)

Writing time: 12.00 noon to 1.30 pm (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

| <i>Section</i> | <i>Number of questions</i> | <i>Number of questions to be answered</i> | <i>Number of marks</i> |
|----------------|----------------------------|---|------------------------|
| A | 3 | 3 | 35 |
| B | 6 | 6 | 60 |
| | | | Total 95 |

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners, rulers, coloured pencils, markers, a shape template and a human figure template (fibres/yarn fabrics students).
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied

- Question and answer book of 13 pages with a detachable Design Brief Insert in the centrefold.

Instructions

- Detach the Design Brief Insert from the centre of this book during reading time.
- Write your **student number** in the space provided above on this page.
- You may use diagrams, notes or sketches to help explain your answers.
- All written responses must be in English.

At the end of the examination

- You may keep the detached Design Brief Insert.

Students are NOT permitted to bring mobile phones and/or any other electronic communication devices into the examination room.

SECTION A**Instructions for Section A**

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

Question 1

Designers have to make decisions about the most suitable materials for the products they design.

Designers need to know:

- what the materials look like
- their major properties/characteristics
- suitable uses for materials
- how materials can be cared for and maintained in good condition.

Choose **two** materials and using the chart fill in the relevant information a designer would need to know to create a successful product:

| | | | | |
|--------------|--------------|------------------|-------------------|-----------------|
| Lycra knit | Woollen felt | Red gum | Huon pine | Polystyrene |
| Corduroy | Blackwood | Silver | Lead crystal | Melamine |
| Radiata pine | Earthenware | Polyester resins | Tin plate | Wool crepe |
| Concrete | Cypress pine | Acrylic | Epoxy resin | Polyester crepe |
| Cotton knit | Copper | Victorian ash | Mild steel | PVC |
| Aluminium | Stoneware | Soda lime | High carbon steel | Porcelain |

| MATERIAL | DESCRIPTION [what does it look like] | PROPERTIES/ CHARACTERISTICS | ONE SUITABLE USE [based on the properties and characteristics you have identified] | CARE AND MAINTENANCE [based on the use you have nominated] |
|----------|---|--------------------------------|---|---|
| 1. | | | | |
| 2. | | | | |

$(2 \times 2) + (2 \times 3) + (2 \times 1) + (2 \times 2) = 16$ marks

SECTION A – continued

Question 2

A good designer will have concerns about the **environmental** impact of a product throughout its life cycle.

Select **one** product and explain the **environmental** concerns that may exist for this product.

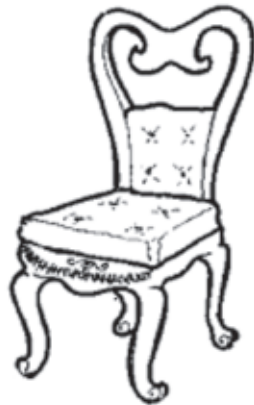
- printed cotton t-shirt
- mahogany chair
- plastic patio chair (PVC)
- ceramic handbasin
- aluminium saucepan

Environmental concerns _____

3 marks

Question 3

A large furniture distributor wants to develop a marketing plan for each of the chairs displayed below. Choose and circle **one** chair.



A
\$795



B
\$595



C
\$190



D
\$220



E
\$60



F
\$900



G
\$195



H
\$49

Develop a marketing plan for the chair you have circled by completing the questions below.

- a. **Product** – Describe the marketable design features of the chair in detail including the materials from which you think it could be made.

3 marks

- b. **People** – Describe a target group who would purchase the chair and why?

2 marks

- c. **Price** – The furniture manufacturer has recommended a retail price for the chairs. Explain how the manufacturer would have decided on this price.

3 marks

- d. **Promotion** – The client’s advertising budget is limited and will **not** extend to television. Name another effective way to advertise the chair. Justify your answer.

2 marks

e. Place – Where is the best place to sell the chair? Justify your answer.

2 marks

f. A competitor is marketing a similar chair. Your distributor wants you to change your marketing plan so that the company can increase sales quickly and ‘beat the competition’.
Describe two changes to your marketing plan that might increase consumer demand for your chair.

i.

ii.

4 marks

Total 16 marks

SECTION B**Instructions for Section B**

Select **one** of the design briefs provided in the Design Brief Insert. Answer **all** questions for only one design brief.

CONTINUED OVER PAGE

Selected brief

Question 4

List the three most important specifications in the brief that will help design your product. From these specifications develop three evaluation criteria (in question form). Justify the **relevance** of each criterion to the elderly people for whom you are designing the product.

i. Specification

Evaluation criteria

Justification

1 + 1 + 2 = 4 marks

ii. Specification

Evaluation criteria

Justification

1 + 1 + 2 = 4 marks

iii. Specification

Evaluation criteria

Justification

1 + 1 + 2 = 4 marks

Total 12 marks

Question 5**Annotated Design Option**

Design your product in the space provided below. You must pay particular attention to the following:

- clarity and detail of drawing 6 marks
- clearly annotated specifications 3 marks
- creativity and aesthetic appeal 3 marks
- a clever/innovative feature. 3 marks

15 marks

SECTION B – continued

Question 6

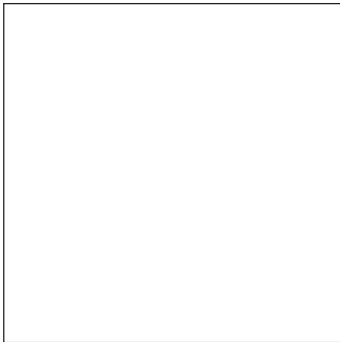
To clarify your drawing, provide the following information.

i. materials used

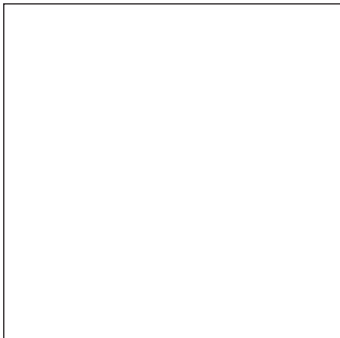
ii. reasons for use

2 + 2 = 4 marks

iii. Draw two processes that would be used in construction of your design option. Explain where they would be used in the construction of the product.

1. 

Explain

2. 

Explain

3 + 3 = 6 marks

iv. intended colour scheme and reasons for use of colour

3 marks

v. intended finish and reasons for use of finish

3 marks

vi. feature that makes your product ‘clever’/innovative

3 marks

Total 19 marks

Question 7

How will the product you have designed improve the elderly person’s quality of life?

4 marks

Question 8

Your design has been chosen as the winning design and will now be mass produced. Explain **four** major steps you would take to mass produce your product, after making the prototype and completing your marketing strategies.

Step 1

Step 2

Step 3

Step 4

 $4 \times 2 = 8$ marks**Question 9**

Describe two ways of checking the quality of your product during mass production.

2 marks

Please remove from the centre of this book during reading time.

D E S I G N B R I E F S

The Design Council of Victoria
and the Age Care Authority
Young Designer Competition

New Ideas for Old



The Design Council of Victoria and the Age Care Authority
are asking young designers to create products that
better suit the needs of our ageing population in
maintaining confidence and independence in their homes.

'By 2020 every second adult will be over 50 years of age. Growing evidence suggests that improved diet, advances in medicine and improved living conditions not only prolong life expectancy but also make for an active life. Older people measure themselves in terms of what they can do, not what they cannot do.'

(*The Age* 17 November 2001)

It is important that products and services assist the elderly to maintain their vitality and interest in life. Older people now are often active but may require modified products that suit their needs.

You are entering a competition to design a 'clever' product that will improve the quality of life of our senior citizens. The products which are designed, must:

- be *functional*
- demonstrate a high level of *design skill*
- be *aesthetically* pleasing
- be *sensitive* to the needs of the elderly.

Read the following design briefs. **CHOOSE ONE** and design a 'clever' product.

The winning design will be mass produced.



Plastics and/or Metal design brief: Watering can

Design a watering can that allows the user to easily fill, carry and water a small garden. You must pay particular attention to the following:

- The user needs to be able to hold the watering can with one or two hands as strength and agility diminish with age.
- The watering can needs to be no larger than 200 mm × 200 mm × 200 mm (including handle and spout) to assist user with balance and steadiness.
- The surface pattern must be both attractive and assist the user with grip.
- A lid is required to stop water spillage which could cause the user to fall.



Wood and/or Metal design brief: Garden bench seat

Design a bench seat that will allow at least two people to enjoy a conversation together in a garden setting. You must pay particular attention to the following:

- Getting in and out of a seat becomes increasingly difficult as people get older.
- An elderly person's skin is more sensitive to sunlight so some shade must be provided.
- Comfort is important, as elderly people cannot sit for long periods of time on hard surfaces.
- The seat will be situated outside and should be a focal point in the garden setting.



Ceramics design brief: Ceramic garden structures

Design attractive ceramic structures which will contain garden beds. The structures must be suitable for herbs, vegetables and small flowering plants. They will need to be designed so that only small gardening tools are used to care for the plants. You must pay particular attention to the following:

- The ceramic structures cannot be too wide, as stretching is difficult for the elderly.
- Balance and steadiness diminishes as people age, so the design needs to incorporate structures to assist with balance.
- Varying heights of the structures will allow easy access to care for the plants.
- The ceramic structures should be a focal point in the garden setting.



Fibres/Yarn Fabric design brief: Travel wear

During the colder months older Victorians join organised senior bus tours that take them to Northern Australia where the climate is warmer. The passengers will be sitting for long periods in the air-conditioned bus and those who are fit enough to walk will explore the destinations at their own pace.

Your task is to design a suitable outfit for an older traveller. They want to look well dressed and tracksuits are NOT acceptable. You must pay particular attention to the following:

- The wearer may be sitting for a few hours at a time in the bus. Comfort must be considered as tight fitting clothing can affect blood circulation.
- The elderly take pride in their appearance and like to look fresh and well groomed at sight-seeing stops and hotel arrivals.
- Clothing should be made from easy care materials because they will be washing clothes in the hotel basin, often with arthritic hands. Irons may not be available.
- An elderly person's skin is more sensitive to sunlight.