



**Victorian Certificate of Education
2003**

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Letter

Figures									
Words									

DESIGN AND TECHNOLOGY
Written examination

Friday 7 November 2003

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	36
B	5	5	62
			Total 98

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers, coloured pencils, markers, a shape template and a female human figure template and a male 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 15 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

Select one of the following types of material and indicate your selection (**A–F**) in the box provided.

- A. knitted cotton lycra
- B. radiata pine
- C. polystyrene
- D. terracotta
- E. soda-lime-silica glass
- F. aluminium

- a. i. Name a product that could be made from your selected material.

- ii. Briefly describe the product's intended use.

1 + 1 = 2 marks

- b. Name **two** properties of the **selected** material. Give reasons why each property is important for the named product.

Properties of materials	Reasons for selection
1 _____ _____	1 _____ _____
2 _____ _____	2 _____ _____
_____	_____

2 × 2 = 4 marks

- c. i. If your selected material was unavailable, what other material could you substitute to make your product?

- ii. Explain the consequences of using the substitute material.

1 + 2 = 3 marks

- d. The properties of a material and its availability are two factors a designer would need to consider if this product was to be manufactured. Name two other factors that may affect or influence the designer.

Factor 1 _____

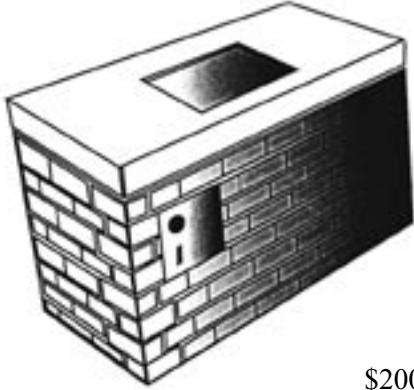
Factor 2 _____

2 marks

Question 2

An outdoor leisure store is about to introduce a range of barbeques. The management has asked you, the marketing manager, to develop a marketing plan for the barbeques illustrated below.

A.



\$2000

B.



\$1500

C.



\$275

D.



\$150

E.



\$75

Select one of the barbeques (A–E) and indicate your selection in the box below.

Use the selected barbeque to answer the following questions.

Show how the barbeque you have selected addresses the following key marketing elements.

a. i. People

Who is the potential target group for your selected barbeque? Explain your choice.

2 marks

ii. Product

What is this potential target group looking for when buying a barbeque? Explain two of their needs/wants. Describe the design features of the selected barbeque that will satisfy their needs and wants.

needs/wants	features of the barbeque
1 _____ _____	1 _____ _____
2 _____ _____	2 _____ _____

4 marks

b. Promotion

i. Name one promotion method that would suit the **potential target group**.

ii. Discuss the positive and negative aspects of this method of promotion.

Positive aspects

Negative aspects

1 + 4 = 5 marks

c. After being on the market for 12 months, the sales for your selected barbeque are very low. Discuss two reasons which may be causing the low number of sales.

2 marks

Question 3

Mobile phones have a 'planned obsolescence'.

- a. Explain what is meant by planned obsolescence.

2 marks

- b. Discuss some of the benefits and problems to **consumers** in the planned obsolescence of mobile phones.

benefits

problems

4 marks

- c. Discuss some of the benefits and problems to **companies** in the planned obsolescence of mobile phones.

benefits

problems

4 marks

- d. Discuss some of the **environmental** problems associated with planned obsolescence.

2 marks

SECTION B

Instructions for Section B

Select **one** of the design briefs provided in the Design Brief Insert. Answer questions 4–7 for only one design brief.

Selected brief _____

Selected material _____

Question 4

List **two important** specifications in the brief. For each specification develop an evaluation criteria (in question form). Justify the importance of each criterion. Explain how you would test or check the specification when the product is completed.

a. Specification one

i. Evaluation criteria

ii. Justification

iii. Test or method of checking

1 + 2 + 2 = 5 marks

b. Specification two

i. Evaluation criteria

ii. Justification

iii. Test or method of checking

1 + 2 + 2 = 5 marks

Question 5**Annotated Design Brief**

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

- clarity and detail of drawing 6 marks
- suitability for the product's intended function 3 marks
- clear annotation that satisfies the brief specifications 3 marks
- aesthetic appeal 3 marks
- innovation/creativity of design 3 marks

18 marks

SECTION B – continued

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Question 6

Tick the material category used in your design.

wood/metal/plastics

fibres/yarn fabrics

ceramics/glass

a. i. Name a **specific** material used in your design.

ii. Explain what makes this material suitable for the product you have designed.

1 + 2 = 3 marks

b. Name and draw **two** complex processes that would be used in your design in the spaces provided. Explain where and why each process would be used.

<p>i. Drawing 1</p>	<p>Name of complex process _____</p> <p>ii. Where you would use it _____</p> <p>_____</p> <p>_____</p> <p>iii. Why you would use it _____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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2 + 1 + 1 = 4 marks

<p>i. Drawing 2</p>	<p>Name of complex process _____</p> <p>ii. Where you would use it _____</p> <p>_____</p> <p>_____</p> <p>iii. Why you would use it _____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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2 + 1 + 1 = 4 marks

Question 7

Use the headings below to discuss the possible environmental impacts of the product you have designed for Question 5.

- i.** Sourcing and processing of the materials from which the product is made

- ii.** Manufacturing processes

- iii.** Transport

- iv.** Use of the product

- v.** Disposal of the product

2 + 2 + 2 + 2 + 2 = 10 marks

Question 8

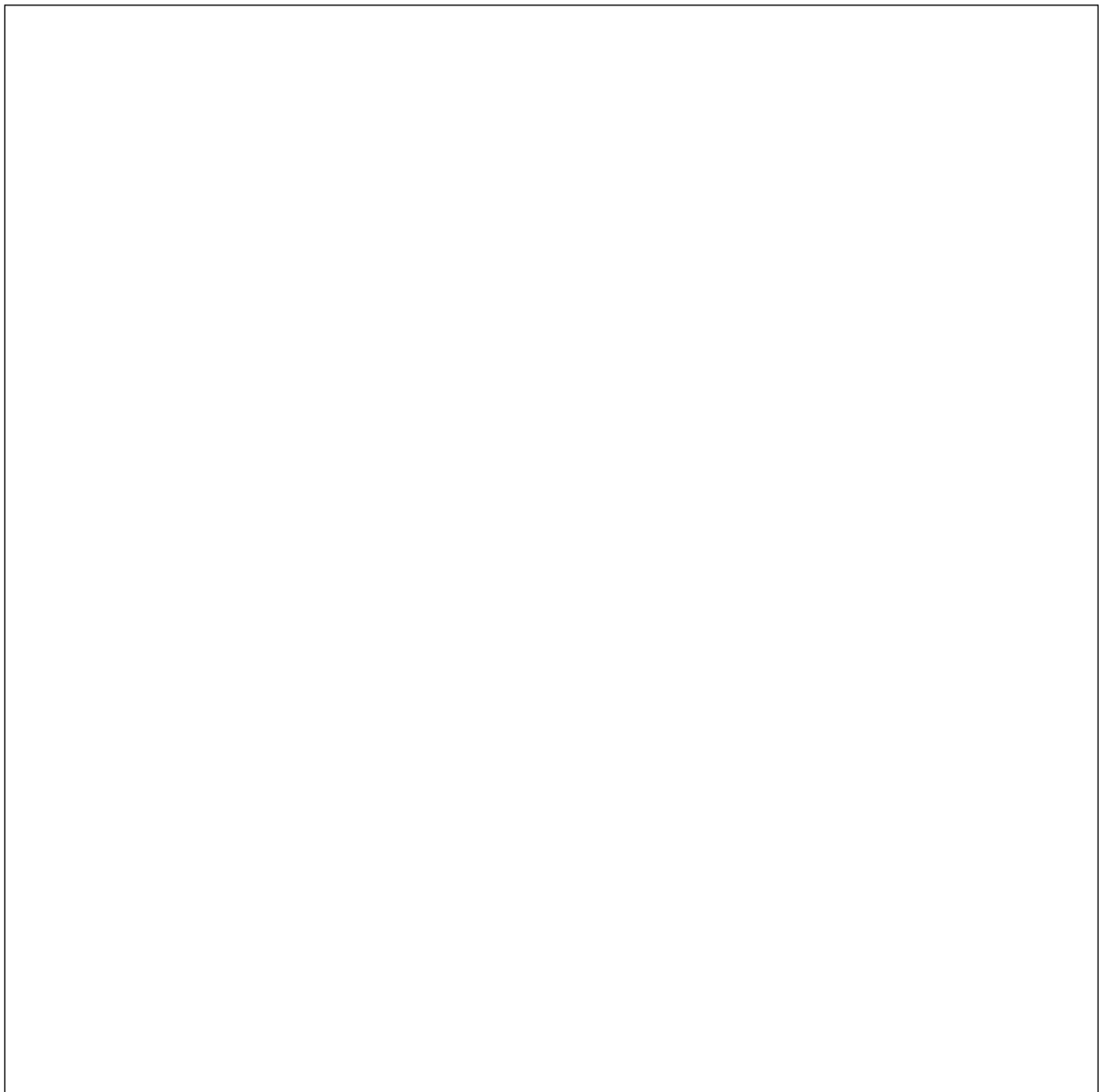
Before production of **any** product commences research and development should be conducted.

Name a product _____

- a. Discuss what type of research and development could be conducted prior to mass-producing this product.

3 marks

- b. For this product, **graphically** represent the stages of the product cycle. Indicate the processes involved for each stage.



6 marks

c. This product could be produced by the following production methods.

- one off
- mass

Explain the advantages and disadvantages of using **one** of these production methods for the product you have named.

Selected production method

Advantages

Disadvantages

4 marks

Please remove from the centre of this book during reading time

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

TURN OVER

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Rock Bay Shire Council

Designs for the
'Rock Bay Junior Games'



The Rock Bay Shire Council is to stage its first 'Junior Games' for April 2004.

The Games will be an annual major sporting spectacular planned by the shire council to involve all local primary schools.

The Games are to be staged outdoors in a park.

Submissions are invited from young designers for a variety of designs for the Rock Bay Games. In particular the submission requires the design of three distinct products.

- temporary seating
- uniforms for event officials
- a fountain as a symbol of unity

The design of the products must

- be suitable for their intended function
- be innovative in design
- capture the fun and light-hearted atmosphere of the event.

Rock Bay Shire Council is an equal opportunity employer

Wood/Metal/Plastics – Collapsible seating for spectators

Temporary outdoor seating is needed for spectators at the Rock Bay Junior Games. The image created by the seating will contribute to the atmosphere of the entire games.

Each unit of seating must

- be easily assembled and dismantled by one or two people
- utilise minimal storage when collapsed and stored
- comfortably seat at least 4 children or 3 adults. Size should not exceed 1800 mm length × 550 mm depth × 800 mm height (including any back rest)
- be suitable for all weather conditions with an easy care finish for cleaning
- be sturdy and stable when set up on uneven ground.

Fibres/Yarn fabrics – Uniform for event officials

A uniform is required for officials to be easily identified. The image created by the uniform will contribute to the atmosphere of the entire games.

- Events will be held outdoors, so uniforms will need to cater for and be adaptable to a wide range of climatic conditions.
- The officials need to look and be comfortable throughout a full day of activities. The garments will need to allow for a degree of flexibility of movement.
- Garments need to be made from easy care fabrics that can be laundered overnight and must withstand active wear and tear.
- Officials are required to carry with them a varied collection of whistles, pens, stopwatches and so on. The garments should include some method of containing these items.
- Uniforms are to display creative styling and use of fabrics and also show a thematic use of colour.

Ceramics/Glass – Fountain of unity

A design for the ceremonial fountain with a theme of unity is required. The fountain will be a highlight of the opening ceremony. The fountain will remain as a permanent fixture in the park.

- The structure will require a cavity 500 mm × 500 mm × 500 mm within the fountain to house the electrical pump and filtration equipment (you are not required to install this equipment).
- The council maintenance workers will require access to the electrical equipment, mains water and filtration system.
- The fountain base should occupy a space no larger than 1.2 m long × 1.2 m wide but there is no restriction on height.
- The fountain is to reflect the fun aspect of the event. It should also show how the event will bring the whole community together in friendly competition.
- The design should consider the finish of the materials to minimise any possibility of defacing the fountain.

END OF DESIGN BRIEF INSERT