

BOARD OF STUDIES  
NEW SOUTH WALES

HIGHER SCHOOL CERTIFICATE EXAMINATION

1999  
**DESIGN AND  
TECHNOLOGY**

2/3 UNIT (COMMON)

*(40 Marks)*

*Time allowed—One hour and a half  
(Plus 5 minutes reading time)*

**DIRECTIONS TO CANDIDATES**

**Section I** (10 marks)

- Attempt ALL questions.
- Complete your answers in either blue or black pen on the Answer Sheet provided.

**Section II** (15 marks)

- The question in this Section is COMPULSORY.
- Answer the question in the spaces provided in this paper.
- Write your Student Number and Centre Number at the top right-hand corner of page 5.

**Section III** (15 marks)

- Attempt ONE question.
- Answer the question in a SEPARATE Writing Booklet.
- You may ask for extra Writing Booklets if you need them.

**SECTION I**

(10 Marks)

Attempt ALL questions.

Each question is worth 1 mark.

**Instructions for answering multiple-choice questions**

- Complete your answers in either blue or black pen.
- Select the alternative A, B, C or D that best answers the question. Fill in the response oval completely.

**Sample:**  $2 + 4 =$  (A) 2 (B) 6 (C) 8 (D) 9  
A  B  C  D

If you think you have made a mistake, put a cross through the incorrect answer and fill in the new answer.

A  B  C  D

If you change your mind and have crossed out what you consider to be the correct answer, then indicate the correct answer by writing the word **correct** and drawing an arrow as follows.

A  B  C  D   
correct  
↑

- 1** The life cycle of a product refers to
  - (A) the environment in which the product is used.
  - (B) product recycling or product reuse.
  - (C) manufacture, use and disposal.
  - (D) the life span of a product.
  
- 2** The purpose of a final product prototype is to
  - (A) determine the method of marketing.
  - (B) test its functional suitability.
  - (C) evaluate the packaging method.
  - (D) determine production costs.
  
- 3** The social environment refers to the
  - (A) number and age of people in a given square kilometre.
  - (B) people and groups in our society and the way they interact with one another.
  - (C) impact that society has on the trees, plants and water in the community.
  - (D) way that the environment can be utilised to achieve maximum gain for our society.
  
- 4** Market segmentation is adopted so that
  - (A) businesses can target different groups of consumers.
  - (B) consumers benefit from all decisions made.
  - (C) businesses can determine production requirements.
  - (D) consumers obtain the best possible price.
  
- 5** Which one of the following generally leads to changes in the design of products, systems or environments?
  - (A) Fluctuations in national economic conditions.
  - (B) The development of new technologies.
  - (C) Increases in money spent in the development phase.
  - (D) The way management structures its workforce.

- 6** The management of organisations has the responsibility for
- (A) ensuring that all employees are performing safely and efficiently.
  - (B) ensuring that the organisation is making maximum profit.
  - (C) creating an environment that will allow the goals of the organisation to be achieved.
  - (D) creating a high turnover of products or services at the best possible quality and price.
- 7** What is the most important aspect to be considered in the design of a food preparation area in a new supermarket?
- (A) The aesthetics of the area to entice customers to the store.
  - (B) The cost of material and construction of the area.
  - (C) The layout of the area for the health and safety of workers.
  - (D) The conformity with the regulations relating to the preparation of food.
- 8** For a company proposing to develop a new breakfast product, the marketing process begins when
- (A) target groups are surveyed for their breakfast needs.
  - (B) the new product is fully developed and ready for sale.
  - (C) prototypes of the new product are available for consumer testing.
  - (D) the product needs a boost to improve sales.
- 9** The major benefit of multi-skilling employees is to develop
- (A) higher technical or management skills.
  - (B) skills in safety practices.
  - (C) skills to complete complex tasks.
  - (D) technical skills in a wider range of tasks.
- 10** Sustainable development is best described as development that
- (A) meets the needs of present and future generations.
  - (B) meets the needs of the present generation and disregards past decisions.
  - (C) compromises the needs of the present to ensure the needs of the future are met.
  - (D) provides an organisation with a competitive edge.

EXAMINER'S USE ONLY

STUDENT NUMBER

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CENTRE NUMBER

**SECTION II**

(15 Marks)

The question in this Section is **COMPULSORY**.  
Answer the question in the spaces provided in this paper.

**QUESTION 11 (15 marks)**

Name **TWO** organisations with contrasting structures. State the products and/or services that each organisation provides.

**Organisation 1**

Name .....

Products and/or services .....

**Organisation 2**

Name .....

Products and/or services .....

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(a) For **ONE** organisation, describe how the organisation monitors the quality of its products or services.

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QUESTION 11 (Continued)

- (b) Compare how each organisation responds to or could respond to consumer feedback through procedures and policies.

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- (c) For each organisation, outline what you consider to be the barriers associated with change of EITHER work practices OR resource allocation.

**Organisation 1**

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**Organisation 2**

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QUESTION 11 (Continued)

- (d) Suggest how ONE of the organisations you have studied might make use of new information technologies.

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- (e) For ONE organisation, comment on how short-term operating decisions have taken into account (or not) the long-term costs associated with the environment.

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- (f) For ONE organisation, use an example to explain how the evaluation of design and technological activities has led to changes to EITHER production, OR marketing, OR organisational efficiency.

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**SECTION III**

(15 Marks)

Attempt ONE question.

Answer the question in a SEPARATE Writing Booklet.

EITHER

**QUESTION 12**

Develop a design for ONE of the following environments:

- a landscape design for a small garden
- the interior of a music and CD store
- a play area in a childcare centre.

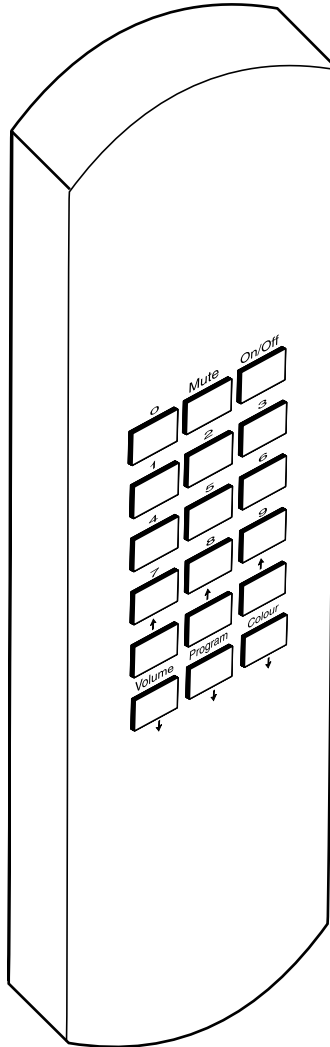
For ONE of the above environments:

- (a) Identify FOUR criteria to be considered when designing the environment.
- (b) Discuss how the criteria will influence the development of the environment's design.
- (c) Sketch and label your initial ideas for the environment.
- (d) Outline the evaluation procedures you used throughout your Major Design Project. Show how these procedures could be used in evaluating the design of your environment in part (a).

OR

**QUESTION 13**

A manufacturer plans to introduce a new remote control unit. The drawing below represents the existing model. The new unit will retain the same functions.



- (a) Analyse the existing model. Propose and justify **THREE** design changes to improve its ease of use.
- (b) Sketch your proposal for the new model, indicating its design features.
- (c) Explain details of a test(s) you would use to determine whether your proposed new model is an improvement on the existing model.
- (d) For your Major Design Project, describe a significant test that you used to compare initial design ideas. Explain how the results of the test affected subsequent design decisions.

OR

**QUESTION 14**

A manufacturing company is introducing a new range of sunglasses.

- (a) Identify a target market.
- (b) How would you establish the characteristics and needs of the target market?
- (c) Develop a marketing strategy that would appeal to the target market.
- (d) Sketch a counter display for the new range of sunglasses that complements the marketing strategy. Label the key design features.
- (e) Evaluate the appropriateness of the presentation techniques you implemented to communicate the purpose of your Major Design Project to target audiences.

**End of paper**

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