

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

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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.

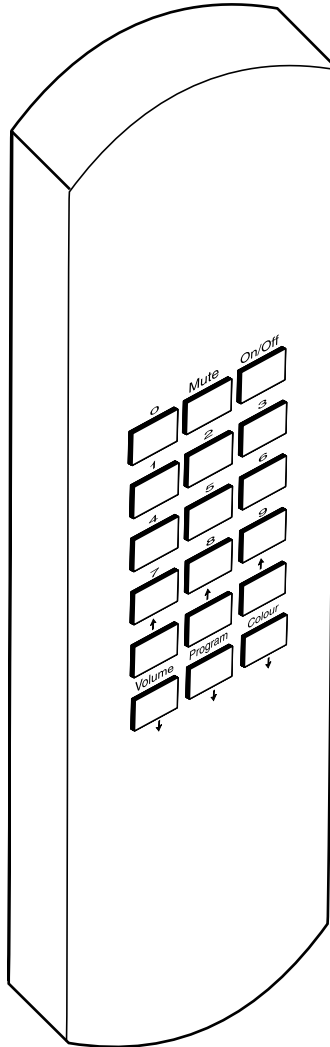
For ONE of the above environments:

- (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.



- Analyse the existing model. Propose and justify **THREE** design changes to improve its ease of use.
- Sketch your proposal for the new model, indicating its design features.
- Explain details of a test(s) you would use to determine whether your proposed new model is an improvement on the existing model.
- 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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