



HIGHER SCHOOL CERTIFICATE EXAMINATION

1998

**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 blue or black pen, or in pencil 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.

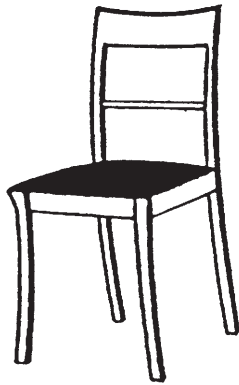
Each question is worth 1 mark.

Select the alternative A, B, C or D that best answers the question.

Complete your answers in blue or black pen, or in pencil on the Answer Sheet provided.

1. The four chairs illustrated are designed for different purposes. Which ONE would be most suitable for use by a computer operator?

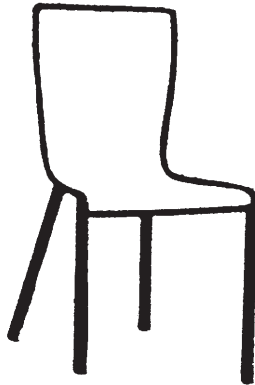
(A)



(B)



(C)



(D)



2. When selecting the material for a product, the designer would consider

- (A) the quality of the material and the available colours.
- (B) its properties, its cost, issues of sustainability and manufacturing processes.
- (C) a material that has been made in Australia and conforms to Australian standards.
- (D) the manufacturing properties, range of finishes and long-term availability of the material.

3. Occupational Health and Safety in the workplace is concerned with
  - (A) the study of the health and safety aspects of certain occupations.
  - (B) the implementation of all safety issues in the workplace.
  - (C) the application of the rules of the Occupational Health and Safety Act.
  - (D) protecting the health and safety of people in the workplace.
  
4. To evaluate a graphic design communication you would consider
  - (A) the size and colour of the type.
  - (B) the accuracy of the information it contains.
  - (C) the standards and conventions as used in the Australian graphic design industry.
  - (D) the appropriate visual forms to communicate the message to the target audience.
  
5. Researching a design project involves
  - (A) locating and analysing information on all aspects of a design project.
  - (B) investigating the nature of the target market.
  - (C) gathering information regarding the criteria required for the commercial success of a design project.
  - (D) making enquiries through the World Wide Web, professional design organisations, and patents offices.
  
6. The most significant factor influencing the adoption of sustainable technologies is
  - (A) the efficient use of electricity in manufacturing.
  - (B) the supply of ecologically sustainable energy to cities.
  - (C) the supply of renewable resources.
  - (D) the community's understanding of recycling programs.
  
7. When managing a design project, the designer is concerned with
  - (A) the time it takes for a professional designer to complete the design task.
  - (B) the progression of the design project from the design brief to the realisation.
  - (C) the total cost of the project within the design constraints of the project.
  - (D) ensuring that the product is distributed effectively into the marketplace.

- 8.** 'Built-in obsolescence' is a feature of product design that
- (A) maintains the long-term profitability of manufacturing firms.
  - (B) ensures that products adhere to current trends.
  - (C) encourages the development of new technologies.
  - (D) limits the product's useful working life.
- 9.** An ethical designer would
- (A) be concerned with all aspects of law, community, and environment when designing.
  - (B) consider the appropriateness of an advertising campaign.
  - (C) implement the code of conduct, as published by the relevant professional designer organisation.
  - (D) not risk prosecution by infringing intellectual property rights.
- 10.** The role of evaluation in designing is to
- (A) establish criteria for a financial management plan.
  - (B) analyse and meet the requirements of the marketing team.
  - (C) ensure that the full scope of the brief has been addressed.
  - (D) test possible solutions to the design brief and ensure that the final product is aesthetically pleasing.

MARKER'S USE ONLY

STUDENT NUMBER

1998

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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)

*The Lighting Company* is a fifteen-person organisation located on one site that designs, manufactures and installs lighting products. Using your understanding of organisations derived from your comparative case study, answer the following:

- (a) List **THREE** important issues that would impact on the structure of the organisation *The Lighting Company*.

Issue 1 .....

Issue 2 .....

Issue 3 .....

**Question 11 continues on page 6**

## QUESTION 11. (Continued)

- (b) Justify the selection of these issues using your understanding of the structure of the two organisations that you have studied.

Issue 1 .....

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Issue 2 .....

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Issue 3 .....

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- (c) Propose a suitable organisational structure for *The Lighting Company*. Consider the issues that would assist *The Lighting Company* in designing and manufacturing new products. Within your structure, indicate the key activities.

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## QUESTION 11. (Continued)

- (d) *The Lighting Company* considers issues of sustainability and impact on the environment when designing, manufacturing and installing its products. Compare and contrast how the organisations that you have studied deal with issues of sustainability and impact on the environment.

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- (e) Identify how each organisation that you have studied responded to Occupational Health and Safety issues.

Organisation 1 .....

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Organisation 2 .....

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- (f) *The Lighting Company* is establishing its management system for Occupational Health and Safety. Indicate how you would manage the implementation of this process.

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**SECTION III**

(15 Marks)

Attempt ONE question.

Answer the question in a SEPARATE Writing Booklet.

EITHER

**QUESTION 12**

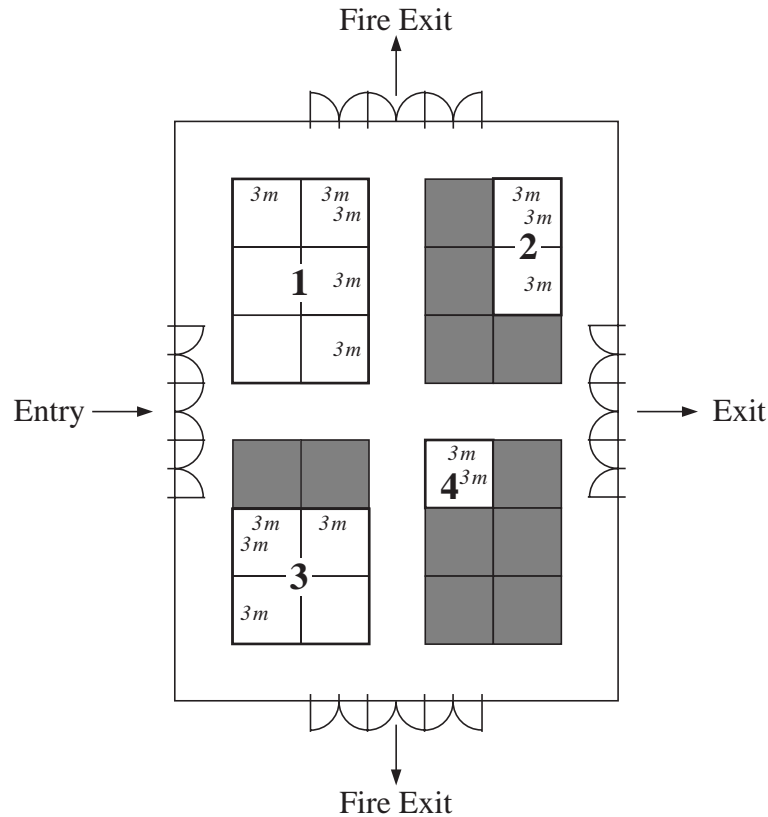
You have been asked to develop a strategy to manage the redesign of a garden tool, a household appliance, or a software program, each of which is nearing the end of its marketable life.

- (a) Indicate a specific product from ONE of the groups listed above.
- (b) Identify at least FOUR issues you would consider when preparing the management strategy.
- (c) Nominate ONE of the issues you identified in part (b) as being the most important, and explain why, in terms of the product chosen.
- (d) The strategy that you suggest will identify a number of management options. How would you go about prioritising the options? Justify your decisions.
- (e) Explain the importance of continual evaluation with reference to the development of your Major Design Project and the redesign of the product specified in part (a).

OR

### QUESTION 13

You have been asked to display your Major Design Project in an exhibition, field day or trade fair. A floor plan of the exhibition area is shown below. The exhibition space options 1, 2, 3 and 4 are shown below. All other exhibition spaces are occupied.

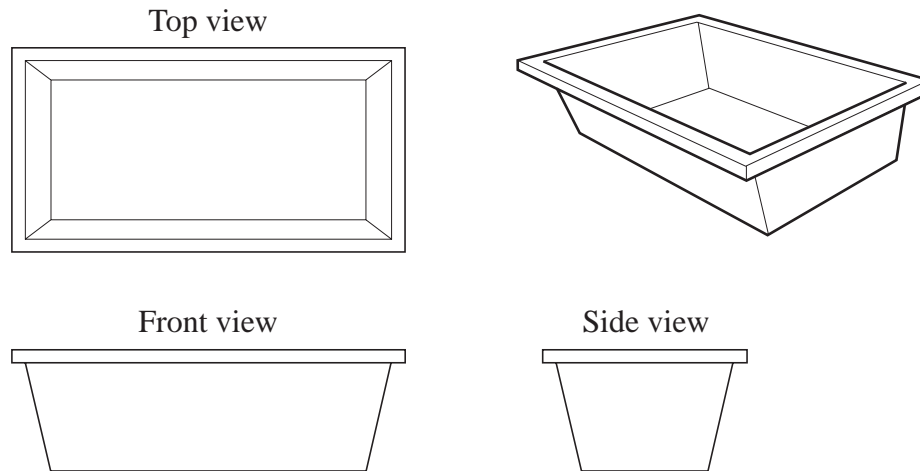


- Identify and explain the criteria that you should consider when you design your display.
- Nominate the exhibition space option you have selected.
- Sketch your display design, taking into account the shape and location of your chosen exhibition space.
- Indicate on your design how your criteria have been met.
- Suggest how you would determine the success of your display.
- Visitors to the exhibition may want information about your project. Suggest what information may be relevant and how you would communicate it.

OR

**QUESTION 14**

You are a designer who has been asked by a storage systems supplier to design a range of storage products using the plastic box shown below.



- (a) Describe THREE different storage situations where one or more boxes could be used.
- (b) Identify the design criteria for a solution to each of the storage situations described in part (a).
- (c) Sketch a separate design solution for each storage situation and clearly label the design features.
- (d) Discuss ONE important issue that needs to be addressed in the manufacture of each design solution.
- (e) When designing, functionality and aesthetics are significant issues. Compare how you dealt with functionality and aesthetic issues in your Major Design Project with how you would deal with these issues in ONE of your storage design solutions.

**End of paper**

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