

B O A R D O F S T U D I E S
NEW SOUTH WALES

2010

**HIGHER SCHOOL CERTIFICATE
EXAMINATION**

Design and Technology

General Instructions

- Reading time – 5 minutes
- Working time – $1\frac{1}{2}$ hours
- Write using black or blue pen
- Write your Centre Number and Student Number at the top of page 5

Total marks – 40

Section I Pages 2–4

10 marks

- Attempt Questions 1–10
- Allow about 15 minutes for this section

Section II Pages 5–7

15 marks

- Attempt Questions 11–14
- Allow about 35 minutes for this section

Section III Page 9

15 marks

- Attempt Question 15
- Allow about 40 minutes for this section

Section I

10 marks

Attempt Questions 1–10

Allow about 15 minutes for this section

Use the multiple-choice answer sheet for Questions 1–10.

- 1 Why do Occupational Health and Safety practices need to be followed in a workplace?
 - (A) To provide employees with a safe workplace
 - (B) To ensure that employees are healthy in their workplace
 - (C) To ensure that someone is trained as a first aid officer in all workplaces
 - (D) To give employees an opportunity to complain to management about an unsafe workplace

- 2 Which of the following best describes the *ergonomic* feature of a product?
 - (A) It has a good shape and fit.
 - (B) It is easy to work with and use.
 - (C) It uses appropriate colour standards.
 - (D) It requires minimum force to operate.

- 3 As a product approaches the end of its life cycle, what factor contributes most to its decline in acceptance?
 - (A) Poor design
 - (B) New materials
 - (C) Shifting social trends
 - (D) Changing manufacturing techniques

- 4 A delay in completing a design project is most likely to be caused by
 - (A) poor timing.
 - (B) poor planning.
 - (C) lack of finance.
 - (D) lack of resources.

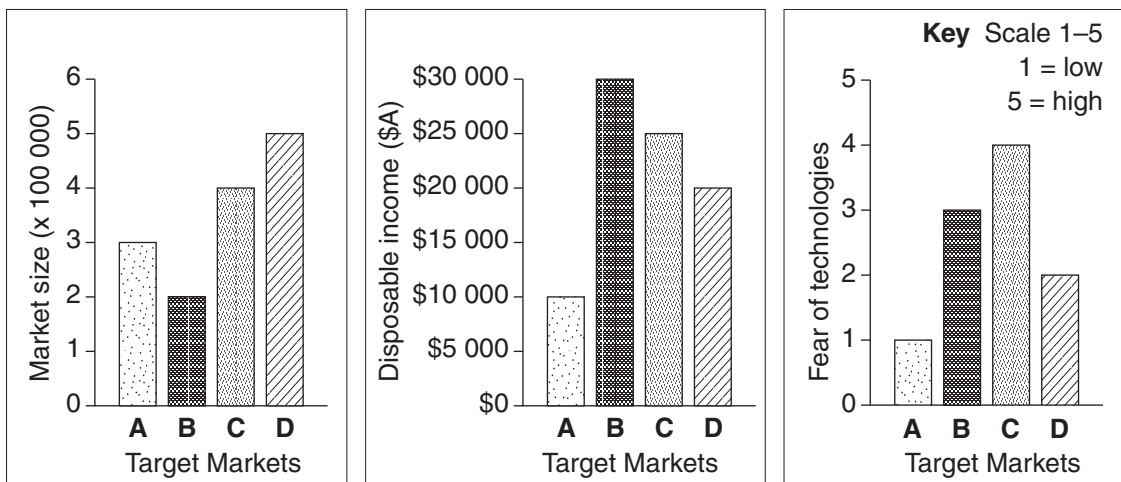
5 After developing a preliminary design concept, what would a designer do next?

- (A) Gather market research
- (B) Develop a technical illustration
- (C) Develop possible design solutions
- (D) Decide on manufacturing and production techniques

6 What is the main purpose of developing sustainable technologies?

- (A) To reduce landfill
- (B) To have longer lasting products
- (C) To make better use of natural resources
- (D) To reduce the amount of materials used

7 The following graphs show the results of market research about four target markets, **A**, **B**, **C** and **D**. Market size, disposable income and fear of technologies were investigated for each target market.



For which target market would a producer develop a next generation high-tech product?

- (A) **A**
- (B) **B**
- (C) **C**
- (D) **D**

- 8** Which of the following best outlines an entrepreneur's activities in influencing the success of an innovation?
- (A) Examining durability and cultural factors
 - (B) Analysing market research, legal and ethical issues
 - (C) Analysing industry standards and production issues
 - (D) Determining production costs and time management issues
- 9** The evaluation of a product involves an examination of its features and/or functions.
- Why is it necessary to conduct this evaluation?
- (A) To ensure that the greatest number of the product will sell
 - (B) To determine whether the product is aesthetically pleasing
 - (C) To ensure that the product performs all of its desired operations
 - (D) To determine whether the product is a quality solution to the design problem
- 10** Why does a designer need to consider the industrial and commercial practices that will be used during manufacturing?
- (A) To ensure the product will sell
 - (B) To gain access to cheaper resources
 - (C) To increase the product's rate of production
 - (D) To produce products that meet market needs



Design and Technology

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Centre Number

Section II

15 marks

Attempt Questions 11–14

Allow about 35 minutes for this section

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Student Number

Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.

Question 11 (2 marks)

Outline forms of communication used by designers.

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Question 12 (3 marks)

Describe factors a designer would consider when designing signage for a school.

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Question 13 (4 marks)

Research is important in the early stages of designing a new product.

Explain the factors a designer would need to consider when interpreting and applying research data.

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Design and Technology

Section III

15 marks

Attempt Question 15

Allow about 40 minutes for this section

Answer the question in a writing booklet. Extra writing booklets are available.

Question 15 (15 marks)

- (a) How has the emergence of new technologies impacted upon the nature of work? **6**
- (b) Analyse how designers use available and emerging technologies to innovate and further develop designs. **9**

End of paper

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