

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

2012

**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
Black pen is preferred
- 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** What is a predominant feature of entrepreneurial activity?

 - (A) Studying emerging technologies
 - (B) Identifying opportunities and risk taking
 - (C) Designing the manufacturing system of the product
 - (D) Conducting a suitable marketing campaign and a life-cycle assessment

- 2** What is the main purpose of developing scale models for projects?

 - (A) To demonstrate the method of construction
 - (B) To demonstrate the aesthetic aspects of the project
 - (C) To ensure working drawings of the project are correct
 - (D) To provide an effective means of communicating the project ideas to others

- 3** Which of the following is the most important consideration for designers when selecting a technique to demonstrate a client's design brief?

 - (A) Making ideas persuasive for the intended audience
 - (B) Cost of the presentation and prototype development
 - (C) Making ideas easily understood by the intended audience
 - (D) Creating an 'eye-catching' presentation for the intended audience

- 4** In a design brief for a product, system or environment, what is the main purpose of the design specifications provided by a client to a designer?

 - (A) They summarise all features used in the design.
 - (B) They outline aspects of the design in order to meet specific needs.
 - (C) They examine market trends, legal requirements and budget figures.
 - (D) They list important social and environmental considerations in the design.

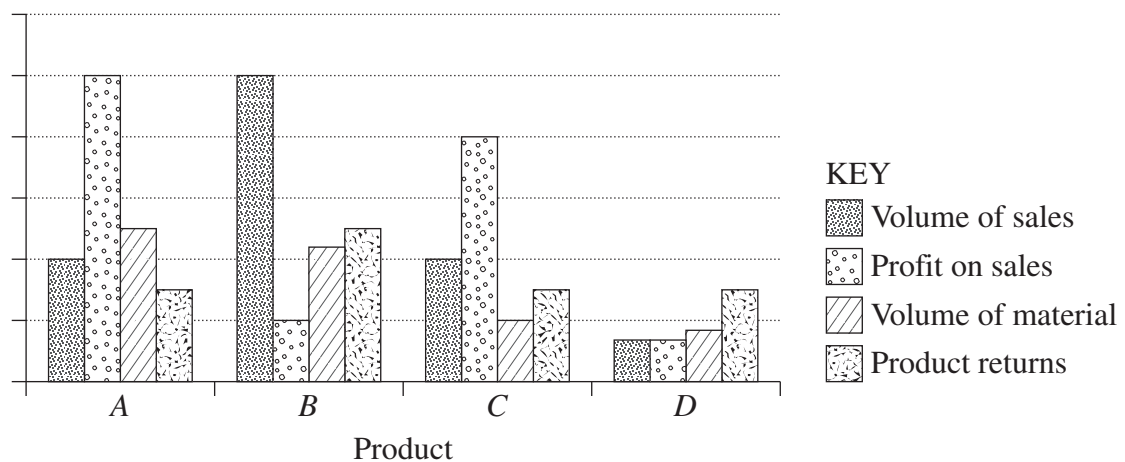
- 5** Successful completion of a major design project depends on a student making the correct link between
- (A) action and time management.
 - (B) sustainability and appropriateness of materials.
 - (C) experimentation and development of practical skills.
 - (D) generation of concept designs and organising materials.
- 6** Terry is asked to design a product that will be accessible to a range of different cultures.
- Which of the following would be a major consideration for Terry?
- (A) Targeting the needs of people
 - (B) Identifying separate market segments
 - (C) Using local employees during production
 - (D) Developing a product that is suitable for all market segments
- 7** Which of the following factors has the most significant effect on the success of a marketing plan?
- (A) The cost of the product
 - (B) Use of television and radio
 - (C) Understanding the market segment
 - (D) Effective packaging and the point of sale
- 8** What effect does obsolescence have on the development of products?
- (A) It encourages the use of new technologies.
 - (B) It ensures the production of sustainable products.
 - (C) It limits the number of products and spare parts sold.
 - (D) It creates a market for the sale of second-hand products and parts.

- 9 A designer has been commissioned to design a new hot-drink dispensing system and needs to identify suitable materials for the cups.

What is the best course of action for evaluating the most suitable materials for these cups?

- (A) Make a working model and test the operation of the system.
- (B) Invite a focus group to evaluate the range of materials that have been selected.
- (C) Investigate the properties of possible materials and trial them in similar situations.
- (D) Seek expert advice on the range of materials available and use those that have been recommended.

- 10 The graph shows information about four products (*A*, *B*, *C* and *D*) that are similar in design and production.



Which product is likely to have the greatest positive impact in terms of its social responsibility?

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



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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)

Why do designers consider ergonomic factors when designing a new product?

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Question 12 (3 marks)

Describe how the changing nature of communication technologies has affected teamwork and collaborative design processes.

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Question 13 (4 marks)

What role does aesthetics play in influencing consumer purchasing decisions?

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Question 14 (6 marks)

Describe how designers may utilise new technologies when evaluating and marketing their processes and products.

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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) Explain the technological changes that may result from the integration of emerging technologies into new products or systems. **6**
- (b) Analyse the social and economic impacts of these new products or systems. **9**

End of paper

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