

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

2013

**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** When is a design solution considered to be most appropriate?

 - (A) When it satisfies the aesthetic requirements
 - (B) When it meets the needs of the target market
 - (C) When it provides strength, durability and safety
 - (D) When it fulfils its intended end-use requirements

- 2** Designers obtain patents to protect their designs to ensure

 - (A) effective marketing controls.
 - (B) the safe production of their designs.
 - (C) the effective international marketing of their designs.
 - (D) exclusive rights to license, promote and sell their designs.

- 3** Which of the following is the most important factor when considering the sustainability of a material for the manufacture of a product?

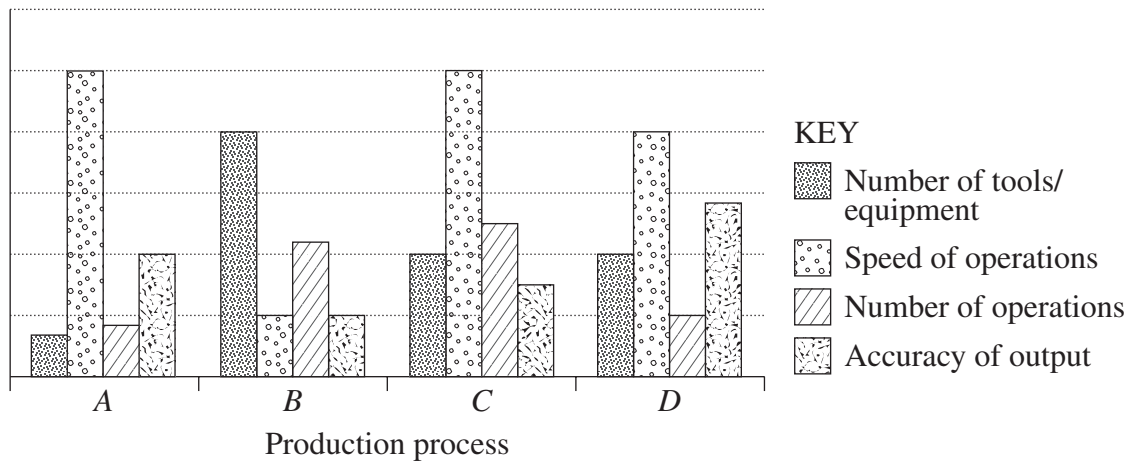
 - (A) The durability of the selected material
 - (B) The cost of manufacturing the product
 - (C) The ability of the material to be renewed
 - (D) The effect of a carbon tax on manufacturing the product

- 4** Emerging technologies provide designers with unique opportunities to

 - (A) develop products that are innovative.
 - (B) develop products that guarantee increased sales.
 - (C) design products that have a limited range of inbuilt applications.
 - (D) design products using existing technologies that have proved to be successful.

- 5** Effective product development relies mainly upon
- (A) selecting a suitable manufacturing process.
 - (B) the ability of designers to sketch original ideas.
 - (C) the ability of designers to manage financial issues.
 - (D) gathering ongoing evaluation and responding to feedback.
- 6** What is the primary purpose of conducting market research prior to product development?
- (A) To formulate finance and action plans
 - (B) To determine suitable advertising methods
 - (C) To identify the needs and wants of the target audience
 - (D) To determine the values and beliefs of various cultural groups
- 7** Which combination of factors most influences the success of an innovation?
- (A) Social demand and cultural values
 - (B) Product demand and social implications
 - (C) Timing and appropriate marketing strategies
 - (D) Ease of use and economical manufacturing processes
- 8** Which of the following best indicates that a product is becoming obsolete?
- (A) When innovative design features are incorporated
 - (B) When the product has been superseded by a newer design
 - (C) When there is a decrease in the product's sales and turnover
 - (D) When the product has undergone modifications to improve its function

- 9 The graph below shows information relating to four different production processes (*A*, *B*, *C* and *D*) being considered for use by a designer for mass production of a product.



From a designer's perspective, which production process is most likely to efficiently manufacture a quality product?

- (A) *A*
(B) *B*
(C) *C*
(D) *D*
- 10 Which of the following is the most ethically sound consideration for a designer to take into account when developing a new product?
- (A) Embracing the cultural aspects of the community
(B) Improving the lives and workplace practices for a majority of the stakeholders
(C) Increasing the overall economic benefits for the manufacturer by increasing sales
(D) Reducing the environmental issues and increasing the sustainability issues for the manufacturer



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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 is it important to consider a product’s function during its development? 2

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Question 12 (3 marks)

Why do many designers still use hand-sketching despite the availability of computer-based graphics programs? 3

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Question 13 (4 marks)

Describe how action plans and ongoing evaluation processes work together to contribute to the development of a successful design.

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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 how new technologies are affecting Australian lifestyles. **6**
- (b) Analyse the relationship between emerging technologies, society and a designer's vision in regard to the development of a new product, system or environment. **9**

End of paper

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