

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

**2011**

**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 11–13
- Allow about 35 minutes for this section

**Section III** Page 9

### 15 marks

- Attempt Question 14
- Allow about 40 minutes for this section

## Section I

**10 marks**

**Attempt Questions 1–10**

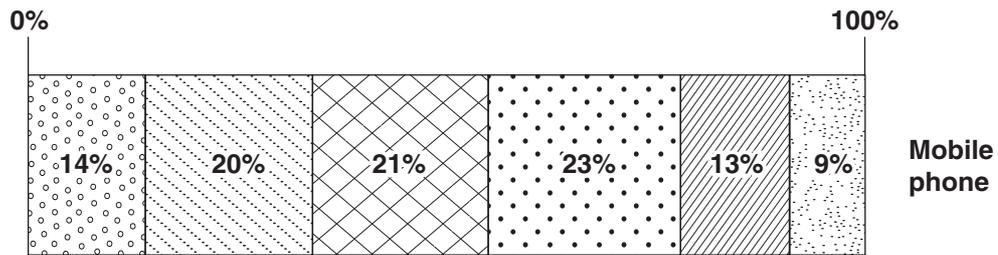
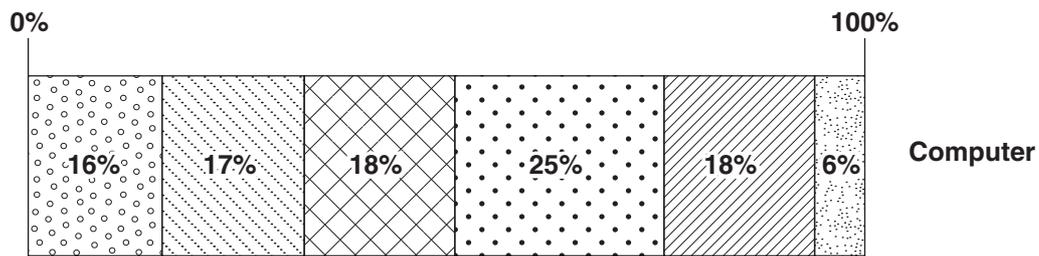
**Allow about 15 minutes for this section**

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

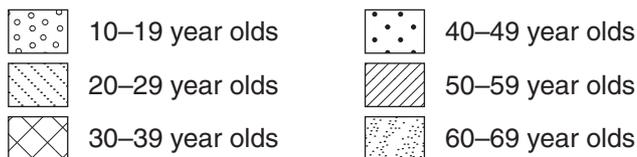
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- 1** Which of the following is most likely to result in a high quality product?
- (A) Using appropriate production processes
  - (B) Assessing available Government rebates
  - (C) Developing good functional and/or aesthetic features
  - (D) Implementing environmentally friendly production processes
- 2** Which of the following contributes most to sustainability during manufacturing?
- (A) Analysing the economic aspects
  - (B) Monitoring the amount of energy used
  - (C) Recycling materials to minimise waste
  - (D) Using materials and processes that have minimal effect on the environment
- 3** The final prototype of a new product was evaluated and its features and functions were closely examined.
- What was being determined by this evaluation?
- (A) Whether it is aesthetically pleasing
  - (B) Whether it performs its desired functions
  - (C) Whether it is a quality solution to the design problem
  - (D) Whether it will sell the greatest number of units at the best price
- 4** Which of the following strategies is most likely to influence the use of energy saving devices by consumers?
- (A) Adhering to industrial patents
  - (B) Integrating emerging technology
  - (C) Releasing the product at a suitable time
  - (D) Evaluating current marketing techniques

- 5 The users of current social networking applications on a computer and/or mobile phone, grouped by age, are shown in the following graphs.



**Key**



Which age group would be best to target for research into the development of a new social networking application?

- (A) 50-59 year olds  
 (B) 40-49 year olds  
 (C) 30-39 year olds  
 (D) 20-29 year olds
- 6 Which of the following best describes the nature of entrepreneurial activity?
- (A) It provides financial backing and technical support for a new product.  
 (B) It provides inspiration and creativity in the development of a new product.  
 (C) It takes responsibility for the creative and social aspects of a new product.  
 (D) It assumes the responsibility, vision and economic support for a new product.

- 7 At which point in the design process would a working prototype be most useful to communicate design solutions?
- (A) When setting up for production
  - (B) When analysing problems with production
  - (C) When developing initial concepts with designers
  - (D) When presenting the final design to the focus group
- 8 A design team works best when
- (A) tasks are allocated to individuals based on expertise.
  - (B) the designer's work flow is structured and organised.
  - (C) design teams work in direct competition with each other.
  - (D) team members always work independently towards a goal.
- 9 What is the most likely reason for designers and manufacturers to use environmentally friendly resources?
- (A) To maintain resources for future use
  - (B) To increase environmental awareness
  - (C) To ensure the use of recycled materials
  - (D) To improve the quality of the natural environment
- 10 What are the primary considerations when designing products to meet the needs of society?
- (A) Individual needs and wants
  - (B) Social trends and expectations
  - (C) Cultural expectations and beliefs
  - (D) Environmental implications and expectations



# Design and Technology

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Centre Number

## Section II

15 marks

Attempt Questions 11–13

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.

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### Question 11 (2 marks)

Outline occupational health and safety (OHS) factors that a designer should consider when designing a mass-produced office chair. 2

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**Question 12 (5 marks)**

There is growing consumer demand for innovative products that enhance the quality of life.

**5**

Explain a range of factors that contribute to the success of these products.

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## Design and Technology

### Section III

15 marks

Attempt Question 14

Allow about 40 minutes for this section

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

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#### Question 14 (15 marks)

- (a) What activities would a designer undertake to determine whether an existing product needs further development? **6**
- (b) Analyse why it may be necessary to further develop an existing product even though the current model is still functional and aesthetically appealing. **9**

**End of paper**

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