Design and Technology

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.
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.

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

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

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
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.

<table>
<thead>
<tr>
<th>Production process</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy of output</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed of operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of tools/equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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
2013 HIGHER SCHOOL CERTIFICATE EXAMINATION
Design and Technology

Section II

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

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?

..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................

Question 12 (3 marks)
Why do many designers still use hand-sketching despite the availability of computer-based graphics programs?

..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................

2201 – 5 –
Question 13 (4 marks)

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

..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
..........................................................................................................................................
.............................................................................................................................................
Question 14 (6 marks)

Discuss how the use of technology has changed designers’ work practices.
2013 HIGHER SCHOOL CERTIFICATE EXAMINATION
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