



NSW Education Standards Authority

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Centre Number

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Student Number

**2023** HIGHER SCHOOL CERTIFICATE EXAMINATION

# Design and Technology

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## General Instructions

- Reading time – 5 minutes
- Working time – 1 hour and 30 minutes
- Write using black pen
- Write your Centre Number and Student Number at the top of this page

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## Total marks: 40

### Section I – 10 marks (pages 2–4)

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

### Section II – 15 marks (pages 6–8)

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

### Section III – 15 marks (pages 9–12)

- 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.

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- 1** What is the primary purpose of ongoing evaluation?
- A. To set goals
  - B. To explore ideas
  - C. To establish consumer needs
  - D. To solve design issues as they arise
- 2** A manufacturer chooses to produce cutting boards made from bamboo because it can be regrown and is inexpensive.
- Which of the following would be the manufacturer's determining factor when selecting this material?
- A. Aesthetics
  - B. Availability
  - C. Sustainability
  - D. Life cycle analysis
- 3** What is the most important factor for a designer to consider when developing an innovation with ergonomic features?
- A. Ensuring the product is user friendly
  - B. Integrating the latest emerging technology
  - C. Finding a reliable manufacturer to efficiently develop the product
  - D. Providing end users with resources to develop an understanding of the technology

- 4 What are designers responding to when they develop products to assist people in society?
- A. Emerging trends
  - B. Identified needs
  - C. Innovative processes
  - D. The natural resources available
- 5 What is the primary purpose of a work health and safety (WHS) risk assessment?
- A. To identify dangerous equipment
  - B. To evaluate workshop organisation and practices
  - C. To assess the impact of materials on the environment
  - D. To identify and assess potential injury or illness in the workplace
- 6 A product is obsolescent when
- A. it is ageing.
  - B. it is classified as an antique.
  - C. it cannot be repaired because parts are not available.
  - D. a variety of materials is considered during design and development.
- 7 Which of the following is most important for an innovative idea to be successful?
- A. A comprehensive marketing plan
  - B. Workload management and state of the art equipment
  - C. Thorough planning, research, timing and consumer demand
  - D. Using local and current technologies for immediate release in the marketplace

- 8** What is the purpose of securing protection of intellectual property?
- A. To guarantee ownership of the domain name
  - B. To prevent others from creating a similar product
  - C. To prevent breach or violation of trademarks, patents and copyright
  - D. To provide a legal framework to protect a designer's creative ideas and designs
- 9** Which of the following describes a product life cycle analysis?
- A. An overview of the environmental impact at the development phase
  - B. An assessment of the manufacturer's costs to transport and distribute the product
  - C. The examination of the extraction, manufacturing and final disposal of the product
  - D. The determination of how materials for the product will be extracted and processed
- 10** Which of the following best demonstrates a designer taking an ethical approach when creating a new product?
- A. Developing a product that avoids excessive use of resources
  - B. Using innovative technologies to ensure greater uptake in the marketplace
  - C. Targeting the aspirations of clients to develop a product that is easier to use
  - D. Adapting procedures to protect the rights and responsibilities of the designer

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Centre Number

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Student Number

### Sections II and III

### Answer Booklet

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**Instructions**

- Write your Centre Number and Student Number at the top of this page.
- Use this answer booklet for Sections II and III.
- Answer BOTH sections.
- Follow the instructions inside this booklet as to where you should write your answers.

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**Please turn over**

**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.

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**Question 11** (2 marks)

Outline ONE factor that could affect the success or failure of a design.

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**Question 12** (3 marks)

How has ONE social trend led to a higher demand for innovative solutions?

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**Question 13** (4 marks)

Explain the advantages of ONE communication technique that could be used when presenting information to a client.

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**Please turn over**

Do NOT write in this area.

**Question 14** (6 marks)

Technology has improved the lifestyle for many. However, it has come at a cost to society and the environment.

Discuss this statement in relation to ONE technology.

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### Section III

15 marks

Attempt Question 15

Allow about 40 minutes for this section

Answer the question in the space provided. This space provides guidance for the expected length of response.

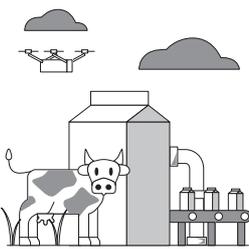
Your answer will be assessed on how well you:

- demonstrate knowledge and understanding relevant to the question
- communicate ideas and information using relevant examples
- present a logical and cohesive response

#### Question 15 (15 marks)

Complex challenges require designers to be creative in addressing the ongoing needs of society.

Analyse the ethical and social implications for designers in creating solutions to world issues. In your response, refer to TWO of the following examples.

		
Health	Food production	Living conditions

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Question 15 continues on page 10





