



NSW Education Standards Authority

2022 HIGHER SCHOOL CERTIFICATE EXAMINATION

Design and Technology

**General
Instructions**

- Reading time – 5 minutes
- Working time – 1 hour and 30 minutes
- Write using black pen

**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 5–8)

- 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

- 4 Why do designers conduct market research prior to designing a new product?
- A. To develop a possible marketing campaign
 - B. To determine the level of consumer demand
 - C. To access alternative manufacturing techniques
 - D. To understand the impact of a life cycle analysis
- 5 Many Australian homes are currently being designed to bring the indoors to the outdoors.
- Which of the following has influenced this practice?
- A. Cultural diversity
 - B. Changing social trends
 - C. Technological changes
 - D. Changing nature of work
- 6 Which of the following should a designer first consider when conducting an analysis of a targeted audience?
- A. Market trends
 - B. Brand awareness
 - C. Purchasing power
 - D. Cost-to-value ratio
- 7 Why would a designer make prototypes after creating CAD models for a client?
- A. To save time and staff costs
 - B. To ensure funding by investors is secured
 - C. To demonstrate the final design to the client
 - D. To simulate possible issues that may arise in production

- 8** What is the purpose of a designer undertaking a ‘cradle to grave’ analysis of a pending innovation?
- A. To determine the likelihood of financial success
 - B. To indicate the possibility of future growth in market share
 - C. To determine the level of consumer demand for a new product
 - D. To understand the impact of the design on society and the environment
- 9** A designer is planning to release a line of ergonomic wheelchairs for children.
- What is the best way to evaluate the useability of this wheelchair?
- A. Invest in innovative material development
 - B. Test the product in a range of environments
 - C. Consider surveys from the specific target market
 - D. Compare the design with competitive manufacturers
- 10** The steady increase in the development of innovative and functional consumer goods that quickly become obsolete is mostly the result of
- A. demand for newer products with better capabilities.
 - B. expansion of online marketing capabilities to increase sales.
 - C. use of rapid prototyping methods that produce more products.
 - D. advancements in manufacturing methods and the ease of mass production.

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Centre Number

Design and Technology

Sections II and III

Answer Booklet

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Student Number

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.

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.

Question 11 (2 marks)

Outline how testing and experimenting can improve a design project.

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Question 12 (3 marks)

Describe how technology can assist designers in overcoming communication barriers.

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Do NOT write in this area.

Question 13 (4 marks)

Two drink bottles are shown.



Discuss the long-term environmental impacts of either drink bottle.

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Do NOT write in this area.

Question 14 (6 marks)

Mass production is the process of creating goods on a large scale and with limited human input.

Explain how the trend towards mass production may affect workplace practices.

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Section III

15 marks

Attempt Question 15

Allow about 40 minutes for this section

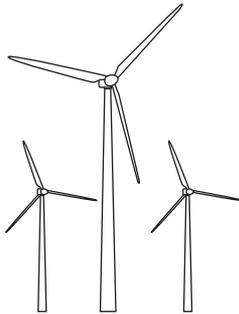
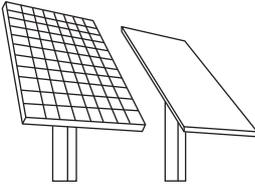
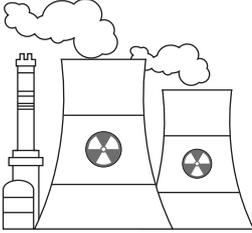
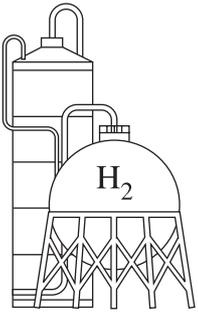
Answer the question in the space provided. This space provides guidance for the expected length of response.

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)

The images represent FOUR alternative energy systems.

			
Wind	Solar	Nuclear	Hydrogen

Analyse the effects of TWO alternative energy systems on society and the environment.

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Question 15 continues on page 10

Do NOT write in this area.

