



NSW Education Standards Authority

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Centre Number

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Student Number

2024 HIGHER SCHOOL CERTIFICATE EXAMINATION

Design and Technology

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

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 5–7)

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

Section III – 15 marks (pages 8–11)

- 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** What is the primary reason a designer might run out of time to complete a project?

 - A. Poor planning
 - B. Meeting warranty claims
 - C. Inappropriate target market
 - D. Late final payment from client

- 2** What is the main goal of sustainable design?

 - A. To preserve the ozone layer
 - B. To reduce pollution and waste
 - C. To ensure the long-term availability of natural resources
 - D. To promote the responsible use of affordable materials by manufacturers

- 3** A designer has been asked to present a range of ideas for new greeting cards.

What should the designer initially research in response to the brief?

 - A. Existing images and symbols
 - B. Strategies for product supply and distribution
 - C. Timelines and actions for product development
 - D. The value of instore gift cards to redeem for products

- 4** What are the prime considerations for designers when producing safe and ethical products for consumers?

 - A. Social trends and convenience
 - B. Financial market share and existing products
 - C. Patent protection and niche market compatibility
 - D. End user wellbeing and environmental friendliness

- 5 Which of the following options best describes the features of a collaborative design team?
- A. Leader directed, common skills among the group, responsive to feedback
 - B. Leader directed, various fields of professional expertise, responsive to feedback
 - C. Shared understanding of the project, common skills among the team, cooperative decision-making process
 - D. Shared understanding of the project, various fields of professional expertise, cooperative decision-making process
- 6 Which of the following is the most effective method to improve the design of new housing estates?
- A. Limit the designers' creative freedom
 - B. Influence building regulations and land use policies
 - C. Mandate the use of specific brands of construction material
 - D. Require designers to prioritise ornate and decorative interior styles
- 7 A corporation has commissioned a designer to develop a new solar-powered, mobile interactive game.
- What is an ethical way to protect the intellectual property of the new design?
- A. The designer applies for a patent.
 - B. The corporation applies for a patent.
 - C. The designer applies for copyright protection.
 - D. The corporation applies for copyright protection.
- 8 What is the most important reason for undertaking a life cycle analysis of an innovative design?
- A. To establish the rights of the designer
 - B. To research the possibility of future growth in market share
 - C. To understand the impact of the project on society and the environment
 - D. To determine the level of consumer demand for the newly developed product

- 9** When communicating to an audience, what is the best method of effectively transferring information?
- A. Using language and technical jargon to impress the audience
 - B. Keeping the message simple to appeal to a broad range of people
 - C. Providing as much data as possible to cover all potential interests
 - D. Tailoring the message to address the needs and preferences of the audience

- 10** A designer has been asked to analyse the ergonomic implications of a given task.

What knowledge would the designer need to have to complete the analysis?

- A. The cost-effectiveness of innovating work practices
- B. The most common workplace injuries and their causes
- C. The physical demands and human requirements for the job
- D. The psychological wellbeing of employees in the workplace

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Design and Technology

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Student Number

Sections II and III

Answer Booklet

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)

An e-scooter is a battery-powered device that can be used for transportation or leisure activities.

Outline ONE factor of design that would be important in the development of an e-scooter.

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Question 12 (3 marks)

Describe ONE disadvantage of designing a product with a limited life span.

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Question 13 (4 marks)

Discuss ONE social trend that can affect the design of a new product.

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Question 14 (6 marks)

Explain ONE risk that a designer may face when creating an innovative product, system or environment. Provide an example to support your answer.

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Section III

15 marks

Attempt Question 15

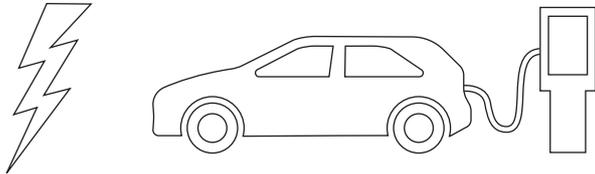
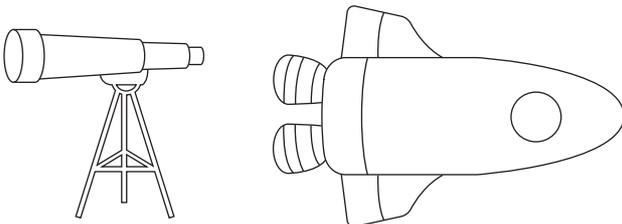
Allow about 40 minutes for this section

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)

<i>Examples of new discoveries</i>	<i>Role of designer</i>
 <p>New and innovative formulas for toothpaste.</p>	<p>Designer created the packaging to bring the product to market.</p>
 <p>New ways for cars to store and use electricity.</p>	<p>Designer created methods to support electric-powered cars such as recharging stations.</p>
 <p>New discoveries have developed greater knowledge of outer space.</p>	<p>Designer developed ideas for tourists' space travel.</p>

Question 15 continues on page 9

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