



NSW Education Standards Authority

**2018** HIGHER SCHOOL CERTIFICATE EXAMINATION

# Design and Technology

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**General  
Instructions**

- Reading time – 5 minutes
- Working time –  $1\frac{1}{2}$  hours
- Write using black pen
- Write your Centre Number and Student Number at the top of page 5

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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 5–8)

- Attempt Questions 11–13
- Allow about 35 minutes for this section

**Section III – 15 marks** (page 9)

- 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** A graphic designer has developed a new range of birthday cards.
- Which combination of factors is most likely to determine the success of the designs?
- A. Cost and function
  - B. Cost and aesthetics
  - C. Durability and function
  - D. Durability and aesthetics
- 2** Which method would be the most effective to determine the target market of a consumer product?
- A. Employ an entrepreneur to evaluate the product
  - B. Gather a focus group to complete a questionnaire about the product
  - C. Post a comment about the product on social media and ask for responses
  - D. Take a prototype of the product to the local shopping centre and ask shoppers for their opinions
- 3** At which part of the design process would a designer know that a product is viable?
- A. Production phase
  - B. Ongoing evaluation
  - C. Idea generation phase
  - D. Research of current products

- 4 An innovative gardening tool which helps the elderly plant seeds has been designed. The designer has developed some initial drawings and sketches and has created a company to produce the tool.

What will the designer need to do to protect the initial ideas?

- A. Apply for a patent
  - B. Trademark the name
  - C. Register the business
  - D. Contact Standards Australia
- 5 Which of the following best outlines why designers would use 3D modelling when presenting their designs to manufacturers?
- A. To ensure that the design is aesthetically appealing
  - B. To clarify any issues that may occur during production
  - C. To allow the manufacturers to visualise the final design
  - D. To show the manufacturers what the product must achieve
- 6 A design team is about to start developing a new range of products. Part of this process is the implementation of management plans.

These plans ensure that the products

- A. meet the intended purpose.
  - B. address all legal requirements.
  - C. are developed on time and on budget.
  - D. meet the needs of the target market.
- 7 Which of the following best outlines why designers undertake research and experimentation when developing a product?
- A. To avoid making mistakes
  - B. To determine the properties of the materials to be used
  - C. To ensure all the materials are available for production
  - D. To ensure the best tools, materials and techniques are used

**8** A designer wants to create a new computer game and has established the design brief.

What will be included in the next step?

- A. Developing a prototype
- B. Looking at similar products on the market
- C. Completing sketches and working drawings
- D. Identifying the limitations and doing working drawings

**9** Many new homes are designed with ‘open plan’ living spaces.

What is likely to have most influenced this design?

- A. Social trends
- B. Cultural diversity
- C. Technological change
- D. The increase in household numbers

**10** Which combination of factors is the most important for a designer to consider when developing a new app?

- A. Political and legal implications
- B. Marketing strategies and timing
- C. Economic and historical influences
- D. Cultural impact and emerging technologies

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Centre Number

## Design and Technology

### Section II

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Student Number

**15 marks**

**Attempt Questions 11–13**

**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** (5 marks)

**Please turn over**

**Question 11** (5 marks)

- (a) Offices are changing and many now include work stations like those shown in Figures 1–4.

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Figure 1 © 2019 HealthPostures. Used by permission.



Figure 2 © Uncaged Ergonomics (2014). Used by permission.



Figure 3 © 2019 Luxor Furniture, a division of EBSCO Industries. Used by permission.



Figure 4 Prosumer's Choice is a registered trademark of Aleratec, Inc.

Outline a different ergonomic benefit in each of the workstations shown in Figure 1 and Figure 4.

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**Question 11 continues on page 7**

Question 11 (continued)

(b) How have technological changes influenced the design of workstations such as those shown? 3

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**Question 12 (4 marks)**

Describe the difference between designing a brand new product and redesigning a product that already exists. 4

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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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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
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#### **Question 14** (15 marks)

Analyse how new and emerging technologies have improved current communication methods.

**End of paper**

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