BOARD OF STUDIES
NEW SOUTH WALES

Centre Number

Student Number

2001

HIGHER SCHOOL CERTIFICATE EXAMINATION

Industrial Technology
Timber Products and Furniture Industries

General Instructions

- Reading time – 5 minutes
- Working time – $1\frac{1}{2}$ hours
- Write using black or blue pen
- Draw diagrams using pencil
- Board-approved calculators may be used
- Write your Centre Number and Student Number at the top of this page and page 13

Total marks – 100

Section I Pages 2–10

60 marks

- Attempt Questions 1–3
- Allow about 55 minutes for this section

Section II Pages 13–19

40 marks

- Attempt Questions 4–5
- Allow about 35 minutes for this section

Section I

60 marks
Attempt Questions 1–3
Allow about 55 minutes for this section

Answer the questions in the spaces provided.

Marks

Use this information to answer Questions 1 and 2.

A company from the timber products and furniture industries needs to expand its operations extensively because of increased sales, improved marketing and the introduction of new products.

Question 1 (20 marks)

(a) Prior to the introduction of new products, the company had limited production capacity. New technologies were examined to overcome this problem. **8**

Identify and describe a new technology related to this industry. Explain how this technology could improve the production capacity of the company.

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Question 1 continues on page 3

Question 1 (continued)

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(b) Outline how the expansion of the company could impact on its organisation and management. **2**

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(c) Describe TWO marketing features that would support the expansion of the company. **2**

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Question 1 continues on page 4

Question 1 (continued)

(d) Owing to increased sales, mass production and quality control techniques are investigated to meet the demand for the new products and to improve services to the consumer.

(i) What is mass production? Explain how the introduction of mass production could affect the profitability of the company. **4**

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(ii) Describe how quality control could be used to improve BOTH the products and the services provided to the consumer. **4**

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End of Question 1

Marks

Question 2 (20 marks)

The same company needs to improve its efficiency in order to expand.

(a) List the implications for the company of purchasing new equipment to improve its efficiency. **2**

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(b) The company has decided to multiskill its workforce.

(i) Outline how multiskilling could make this company more efficient. **2**

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(ii) Describe personnel issues other than multiskilling that would directly influence efficient production. **4**

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Question 2 continues on page 6

Marks

Question 2 (continued)

(c) Describe how computer software applications can be used to assist in the effective planning, development and management of production projects. **6**

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(d) Discuss training methods that the company could use to ensure that staff are competent in their use of its software applications. **6**

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End of Question 2

Marks

Question 3 (20 marks)

(a) Workplace injuries account for a large amount of lost production time.

In order to address this concern, a company from the timber products and furniture industries has decided to display a number of safety signs throughout the workplace. A sample is shown.

(i) What message does the safety sign convey? **1**

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(ii) Explain how the features of this sign add to its effectiveness in communicating the intended message. **3**

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Question 3 continues on page 8

Marks

Question 3 (continued)

(iii) Why is it important to carefully consider the placement of this safety sign in the workplace? **2**

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(iv) Name strategies, other than signage, that this company could use to reduce workplace injuries. **2**

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Question 3 continues on page 9

Question 3 (continued)

(b) (i) The company has decided to develop a safety manual containing both text and graphics. Outline the range of information-processing skills required to prepare and present this manual. Make reference to appropriate computer software in your answer. **9**

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Question 3 continues on page 10

Marks

Question 3 (continued)

(ii) The company has decided to produce 80 copies of the new safety manual. Each manual contains 15 pages. **3**

Complete the table, indicating the costs of producing these manuals. All prices are inclusive of GST.

Item	*Unit cost*	*Total cost*
Artwork	$200.00	$200.00
Printing	50 cents per page	
Reams of paper	$6.00 per ream (500 sheets)	
Binding for manual	$4.00 per manual	

End of Question 3

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Section II

40 marks
Attempt Questions 4–5
Allow about 35 minutes for this section

Answer the questions in the spaces provided.

Question 4 (20 marks)

Please turn over

Marks

Question 4 (20 marks)

Use the pictorial view of a dressing-table mirror to answer Question 4.

(a) The joints at the bottom of the mirror frame are keyed (feathered) mitre joints. **2**

Identify and sketch an alternative joint that can be used to join the frame at the bottom corners and still allow the mirror to fit into a rebate in the frame.

Question 4 continues on page 15

Marks

Question 4 (continued)

(b) Describe a method that could be used to clamp all sections of the mirror frame together to ensure that it remains square and flat. Use sketches to illustrate your answer. **4**

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(c) What timber qualities need to be considered when selecting timber to manufacture the dressing-table mirror? Give examples to support your answer. **5**

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Question 4 continues on page 16

Question 4 (continued)

(d) The dressing-table mirror is to be stained, then sprayed with a nitrocellulose lacquer. **9**

Identify and discuss the safety controls the manufacturer must have in place to conform to current environmental and occupational health and safety regulations.

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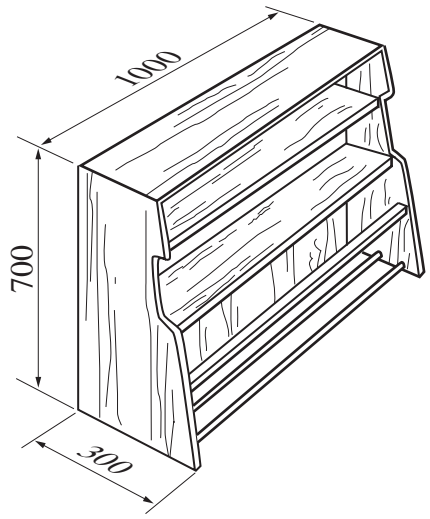
End of Question 4

Marks

Question 5 (20 marks)

The wall unit shown is mass-produced from 18 mm thick veneered medium-density fibreboard, and assembled using cabinet hardware fittings.



(a) Identify and sketch a cabinet hardware fitting that would be suitable for this purpose. **2**

Question 5 continues on page 18

Marks

Question 5 (continued)

(b) Describe a suitable manufacturing method for mass-producing the sides of the wall unit. Use sketches to illustrate your answer. **4**

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(c) Preference was given to medium density fibreboard (MDF) when designing this unit. **3**

Discuss the advantages and disadvantages of using MDF over other manufactured boards for this purpose.

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(d) Discuss the reasons why the manufacturer decided to market the wall unit using cabinet hardware fittings. **3**

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Question 5 continues on page 19

Marks

Question 5 (continued)

(e) Describe the processes the manufacturer would follow to ensure that quality was maintained throughout the mass-production of the wall unit. **8**

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