

BOARD OF STUDIES
NEW SOUTH WALES

HIGHER SCHOOL CERTIFICATE EXAMINATION

STUDENT NUMBER

CENTRE NUMBER

2000

**INDUSTRIAL
TECHNOLOGY**

2 UNIT

SECTION II

**GRAPHICS AND MULTIMEDIA
INDUSTRIES**

OPTION—MECHANICAL DRAFTING

*Total time allowed for Sections I and II—One hour and a half
(Plus 5 minutes reading time)*

DIRECTIONS TO CANDIDATES

- Write your Student Number and Centre Number at the top right-hand corner of this page.
- Where appropriate, show all working for solutions neatly and clearly.
- You may use Board-approved drawing instruments and calculators.

Section II—Mechanical Drafting (15 marks)

- Question 4 is **COMPULSORY**.
- Attempt **TWO** questions from Questions 5, 6, and 7.
- Answer the questions in the spaces provided in this paper.

MARKER'S USE ONLY

Question				
4				
5				
6				
7				

SECTION II—MECHANICAL DRAFTING OPTION

(15 Marks)

QUESTION 4 This question is **COMPULSORY**. (5 marks)

- (a) A leading architectural hardware supply company is updating its catalogue to include the stainless steel door handle shown in Figure 1.

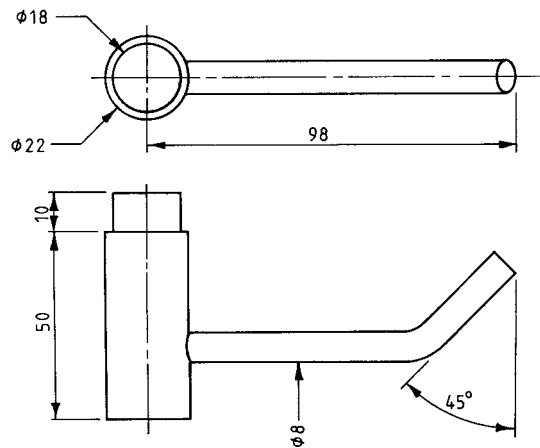


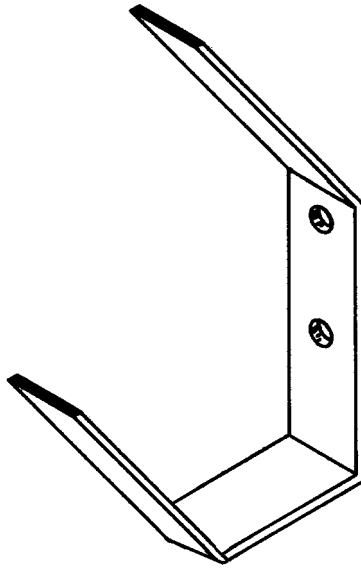
FIG. 1

The stainless steel door handle (Figure 1) is drawn to scale.

In the space below, complete a rendered freehand isometric sketch of the product.

QUESTION 4 (Continued)

(b)



ISOMETRIC PROJECTION

Complete (in third-angle projection) an orthogonal sketch of the coat hook illustrated above. Show sufficient views to represent every surface as a true shape. Label each view.

QUESTION 4 (Continued)

(c) Drawing office personnel have become aware of the need for ergonomic workspaces.

(i) Explain what is meant by *ergonomic*.

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(ii) List FOUR factors that should be taken into account when a person is organising an ergonomic workspace for people working with computer terminals.

1
2
3
4

Attempt TWO questions from Questions 5, 6, and 7.

QUESTION 5 (5 marks)

Pictorial drawings are used to convey the idea of the shape and form of an object.

- (a) Name and state the advantages and disadvantages of TWO different types of pictorial drawings.

Pictorial drawing 1

Advantages

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Disadvantages

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Pictorial drawing 2

Advantages

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Disadvantages

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Question 5 continues on page 6

QUESTION 5 (Continued)

(b) Presentation drawings can be created by traditional hand methods, by using appropriate software on computers, or by a combination of these. Discuss the advantages of each method.

(i) By hand

Advantage
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(ii) Using software

Advantage
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(iii) By a combination of hand and software

Advantage
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(c) Explain the purpose of presentation drawings.

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Attempt TWO questions from Questions 5, 6, and 7.

QUESTION 6 (5 marks)

The design department of a leading eyewear manufacturer has been commissioned to extend their range of sunglasses. The designer has produced a sketched pictorial (Figure 3).

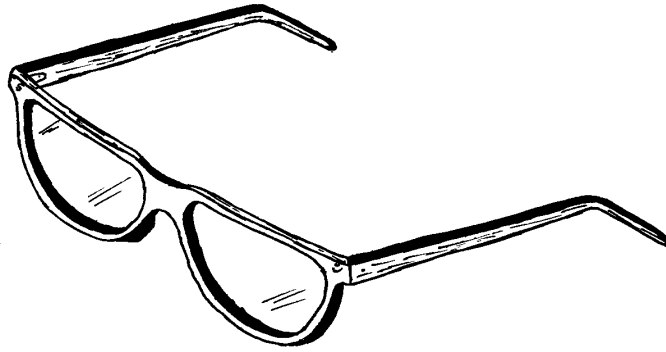


FIG. 3

- (a) List and explain FOUR essential considerations that must be discussed in the planning stages of the product development of the sunglasses.

Consideration 1

Explanation

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Consideration 2

Explanation

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Consideration 3

Explanation

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Consideration 4

Explanation

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QUESTION 6 (Continued)

- (b) Explain TWO different ways in which mechanical drawings are used in the manufacturing process of the sunglasses.

Method 1

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Method 2

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- (c) Describe THREE areas in which computer technology can be used to assist in the development of a prototype of this product.

Area 1

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Area 2

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Area 3

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Attempt TWO questions from Questions 5, 6, and 7.

QUESTION 7 (5 marks)

In order for information to be presented clearly to various people involved in the design and construction of a product, different types of drawings are used.

(a) Explain the purpose of the following:

(i) detail drawings;

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(ii) general assembly drawings;

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(iii) working assembly drawings.

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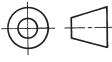
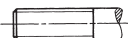
(b) Describe the function of a materials list.

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QUESTION 7 (Continued)

(c) (i) The table below indicates AS1100 symbols.

In the spaces provided in the table, name or describe each symbol and explain where each symbol is used.

<i>Symbol</i>	<i>Name or description</i>	<i>Where the symbol is used</i>
		
		
		
∅6 □ ∅12		
∅12		
		

(ii) Discuss the importance of AS1100.

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(d) Explain the difference between functional dimensions and non-functional dimensions.

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