

2010

**HIGHER SCHOOL CERTIFICATE
EXAMINATION**

Industrial Technology

Timber Products and Furniture Technologies

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 page 9

Total marks – 40

Section I Pages 2–5

10 marks

- Attempt Questions 1–10
- Allow about 20 minutes for this section

Section II Pages 9–12

15 marks

- Attempt Questions 11–16
- Allow about 35 minutes for this section

Section III Page 13

15 marks

- Attempt Question 17
- Allow about 35 minutes for this section

Section I

10 marks

Attempt Questions 1–10

Allow about 20 minutes for this section

Use the multiple-choice answer sheet for Questions 1–10.

- 1** What type of screw is the most suitable to achieve a flush fitting surface in timber?

 - (A) Countersunk
 - (B) Pan head
 - (C) Raised head
 - (D) Round head

- 2** What is the most suitable timber adhesive for furniture that is going to be used outdoors?

 - (A) Contact
 - (B) Hot melt glue
 - (C) Polyvinyl acetate
 - (D) Resorcinol formaldehyde

- 3** What is marquetry?

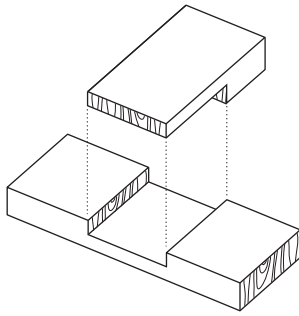
 - (A) A decorative edge treatment
 - (B) An initial step in marking out timber for cutting
 - (C) A wood carving technique that results in a 3D image
 - (D) The process of cutting and fitting veneers together to form a design

- 4** Which of the following hand tools will produce the smoothest timber finish?

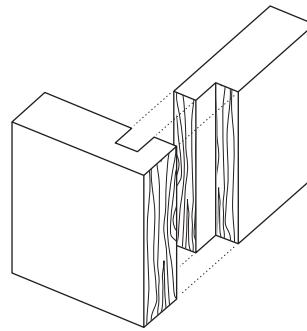
 - (A) Hand scraper
 - (B) Block plane
 - (C) Smoothing plane
 - (D) Cork block and 80 grit garnet paper

5 Which of the following diagrams shows a halving joint?

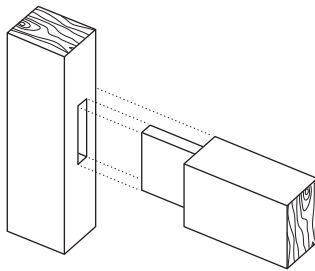
(A)



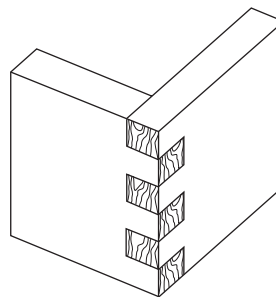
(B)



(C)



(D)



6 Which of the following conversion processes will produce the most stable board?

(A) Back sawn

(B) Quarter sawn

(C) Rotary peel

(D) Through sawn

7 Which of the following manufactured boards has uniform strength in both directions?

(A) Coreboard

(B) Blockboard

(C) Composite board

(D) Medium density fibreboard

8 How do you prevent splitting when nailing near the ends of hardwood?

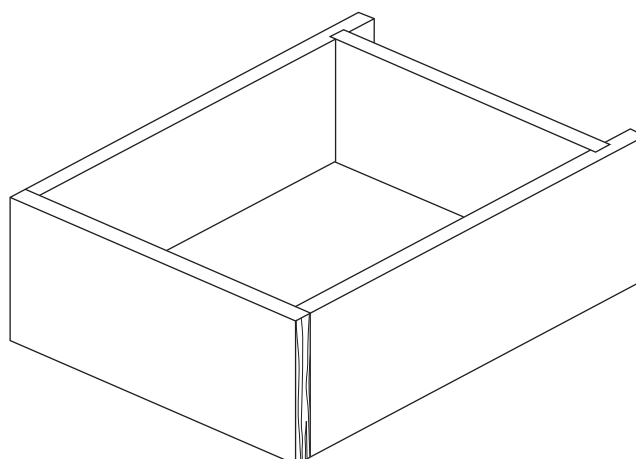
(A) Use a bradawl.

(B) Drill a pilot hole.

(C) Use small diameter nails.

(D) Drive the pointed end of a marking knife into the wood.

- 9 The diagram shows the details of a drawer.



All measurements are in millimetres.

<i>Part</i>	<i>Length</i>	<i>Width</i>	<i>Thickness</i>	<i>Quantity</i>
Drawer front	400	190	19	1
Drawer side	450	190	12	2
Drawer back	380	175	12	1
Drawer base	440	380	3	1

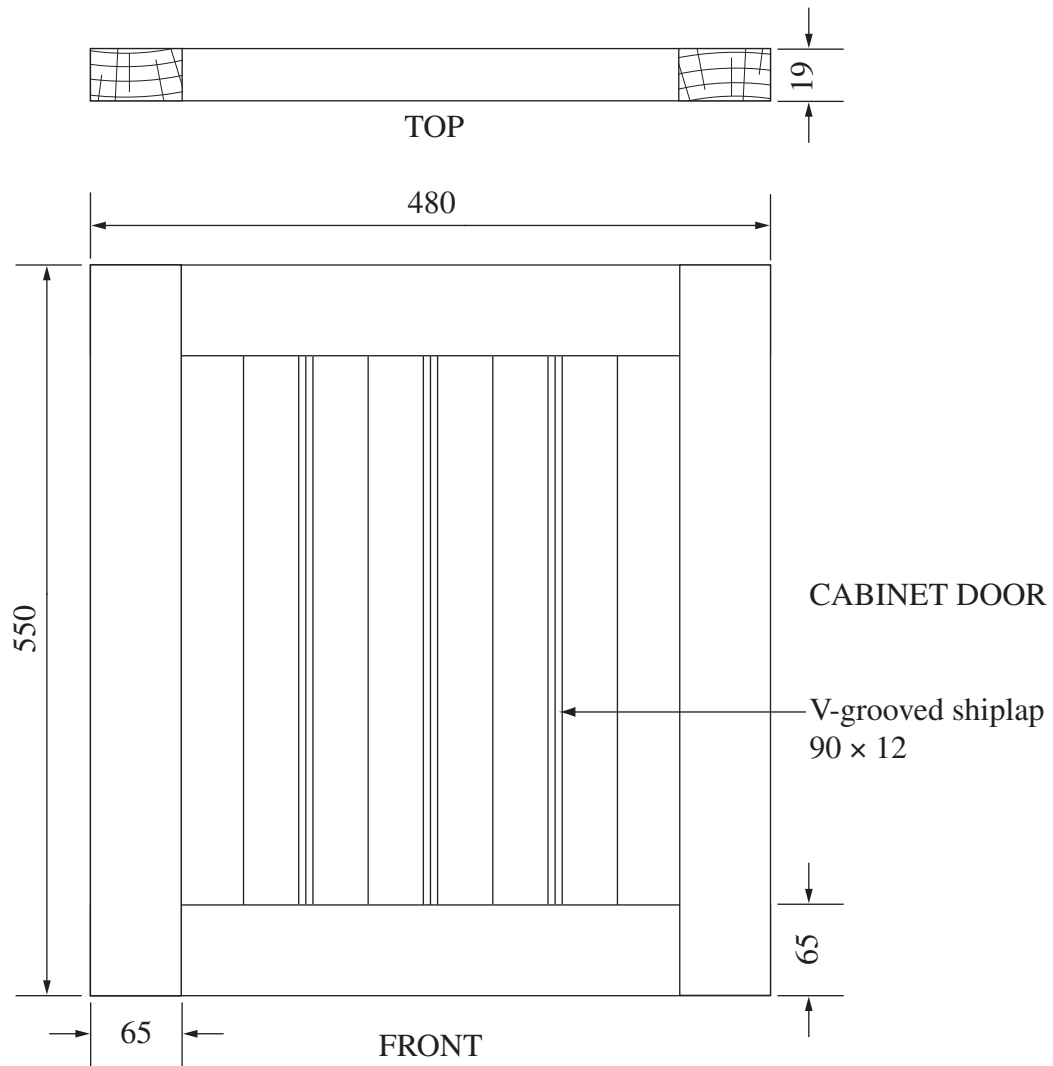
Material costs

190×19 hoop pine costs \$8.50 per metre
 190×12 hoop pine costs \$8.25 per metre
 $440 \times 380 \times 3$ plywood costs \$0.25 per piece

What is the total cost of the materials required to produce one drawer?

- (A) \$13.86
(B) \$14.11
(C) \$14.21
(D) \$14.53

- 10 A diagram and details of a cabinet door are shown.



Material costs

140 × 19 hoop pine costs \$7.50 per metre
 70 × 12 hoop pine costs \$6.50 per metre
 140 × 12 hoop pine costs \$6.50 per metre
 70 × 19 hoop pine costs \$3.80 per metre

What is the most cost effective timber order for the cabinet door frame?

- (A) 1 × 1800 × 70 × 19
- (B) 1 × 1800 × 70 × 12
- (C) 1 × 900 × 140 × 19
- (D) 1 × 900 × 140 × 12

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Industrial Technology Timber Products and Furniture Technologies

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Centre Number

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Student Number

Section II

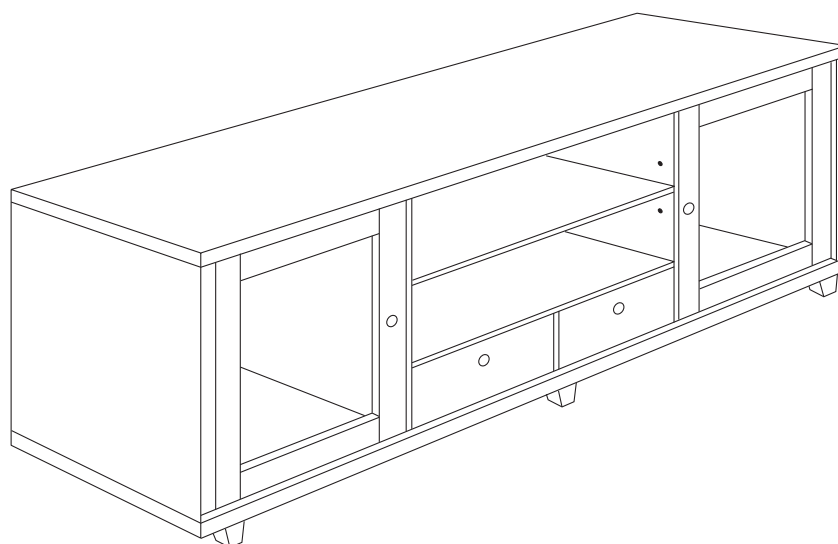
15 marks

Attempt Questions 11–16

Allow about 35 minutes for this section

Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.

Questions 11–16 refer to the diagram of an entertainment unit below. The unit is to be manufactured as a ‘flat pack’.



Question 11 (1 mark)

Sketch a knockdown fitting that could be used.

1

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Question 12 (2 marks)

What are the advantages of producing the entertainment unit as a ‘flat pack’?

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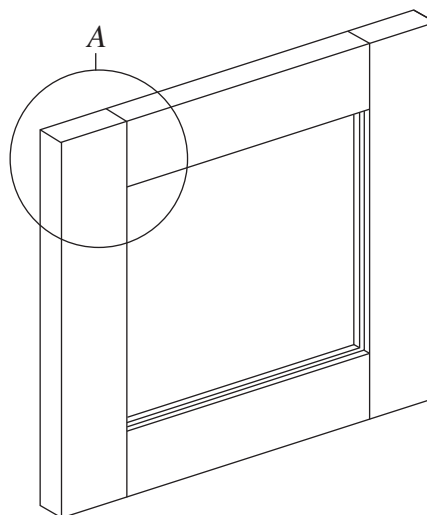
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Question 13 (2 marks)

The details of a glass door frame from the entertainment unit are shown.

2



Name and describe, with the aid of sketches, a suitable framing joint that could be used in the area marked at A in the door frame.

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Question 14 (3 marks)

Describe the safety precautions that need to be considered when constructing and finishing cabinet furniture made from manufactured boards.

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Question 15 (3 marks)

What are the advantages and disadvantages of using solid timber as opposed to manufactured board for the top of the entertainment unit?

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Question 16 (4 marks)

Describe techniques used when making furniture from manufactured boards.

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Industrial Technology

Timber Products and Furniture Technologies

Section III

15 marks

Attempt Question 17

Allow about 35 minutes for this section

Answer the question in a writing booklet provided. Extra writing booklets are available.

Question 17 (15 marks)

A small family-owned company is operating successfully in a local market. The company is assessing the feasibility of relocating to a larger facility in order to expand production.

- | | | |
|-----|--|-----------|
| (a) | Outline environmental considerations that may affect the expansion of the company. | 3 |
| (b) | Analyse the structural, technical and personnel issues to be considered prior to relocating and expanding. | 12 |

End of paper

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