



Victorian Certificate of Education 2009

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Letter

Figures

Words

VCE VET FURNISHING (CABINET MAKING)

Written examination

Thursday 12 November 2009

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	20	20	20
B	20	20	50
C	6	6	30
			Total 100

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners, rulers and one scientific calculator.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.

Materials supplied

- Question and answer book of 19 pages. There is a detachable insert for Section B in the centrefold.
- Answer sheet for multiple-choice questions.

Instructions

- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, **and** sign your name in the space provided to verify this.
- All written responses must be in English.

At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions**Instructions for Section A**

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

Question 1

When assembling a cabinet, which is the first task to undertake?

- A. fit the shelves
- B. find all the parts
- C. prepare the work area
- D. join the front and back

Question 2

Which term is used to refer to a vertical member of a frame and panel door?

- A. rail
- B. stile
- C. front
- D. panel

Question 3

A trimmer is best used for

- A. trenching to insert a 19 mm particle board shelf.
- B. routing rebates to house 12 mm veneered particle board.
- C. running small mouldings on a 19 mm solid timber table top.
- D. flushing off overlapping 19 mm plywood attached to the base of a box.

Question 4

Which document is used to find out the safety requirement for a new product?

- A. a PDS
- B. an MSDS
- C. a summary
- D. the product label

Question 5

Who is responsible for providing an MSDS to the end user?

- A. the employer
- B. WorkCover Authority
- C. the supplier of the product
- D. the manufacturer of the product

Question 6

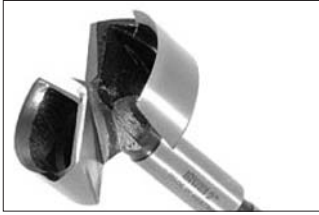
Dimensions on a cutting list are written in which format?

- A. 12
- B. 12 mm
- C. 12 cm
- D. twelve millimetres

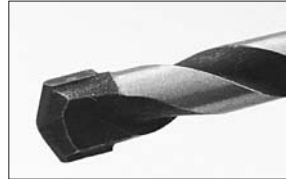
Question 7

Which drill bit should never be used in an electric drill?

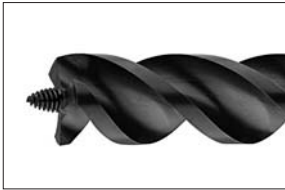
- A. forstner bit



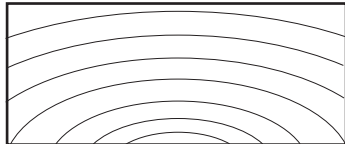
- B. masonry bit



- C. auger bit



- D. twist drill

**Question 8**

What does this symbol on a set out indicate?

- A. end grain of the timber
- B. the front of the job
- C. particle board
- D. concrete

Question 9

You are required to drill the dowel holes to assemble the solid top for a desk. The dowels are 8 mm × 50 mm.

How deep will you drill the holes into each part?

- A. 8 mm
- B. 25 mm
- C. 27 mm
- D. 50 mm

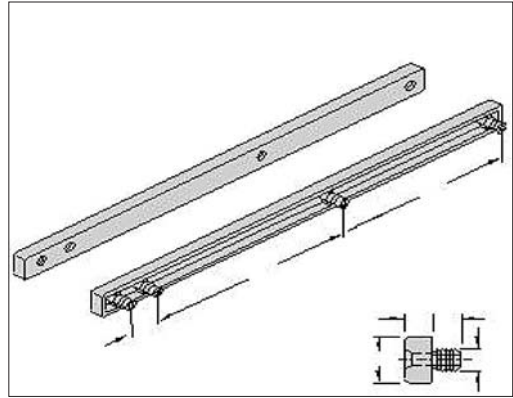
Question 10

Which of the following runners is best suited to standard kitchen drawers?

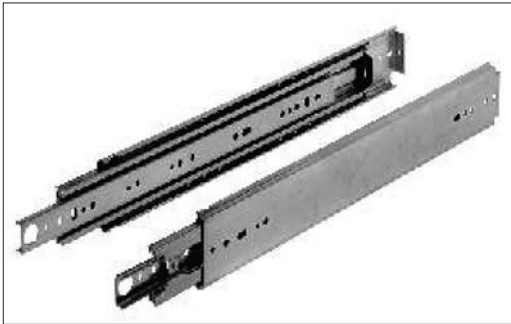
A. white standard runner



B. plastic slide/runner



C. heavy-duty full-extension runner



D. timber runner

**Question 11**

What is a suitable grade of abrasive paper for the final sanding of a solid timber desk top?

- A. 80 grit
- B. 120 grit
- C. 150 grit
- D. 220 grit

Question 12

When assembling a leg and rail frame, what are the most important checks?

- A. check for twist and wind, flatness and parallel
- B. check for flatness, parallel and diagonally square
- C. check for parallel, diagonally square and twist and wind
- D. check for diagonally square, twist and wind and flatness

Question 13

What should be used to tell the machinist the sizes of the materials required?

- A. work plan
- B. cutting list
- C. mobile phone
- D. full-size set out

Question 14

Which of the following work documents is most likely to be displayed on or adjacent to a static machine?

- A. OH&S legislation codes
- B. manual-handling procedures
- C. local safe operating procedures
- D. legislative obligations and regulations

Question 15

Which hand tool can have either a flat or a rounded sole and is used for shaping components?

- A. a wood rasp
- B. a spokeshave
- C. a gouge chisel
- D. a smoothing plane

Question 16

What is the correct amount of hardener to use if you are mixing a 2-part glue with a ratio of 5:1, and you are using 30 g of resin?

- A. 3 g
- B. 5 g
- C. 6 g
- D. 150 g

Question 17

When preparing a cupboard to be constructed from veneered board it is

- A. important to fill all holes with white putty.
- B. okay to sand in any direction because it is a board material.
- C. important to sand in the grain direction of the timber veneer only.
- D. not necessary to prepare the surfaces because they will be stained.

Question 18

Specifications, plans and elevations and full-size set outs are used to produce which other important workplace document?

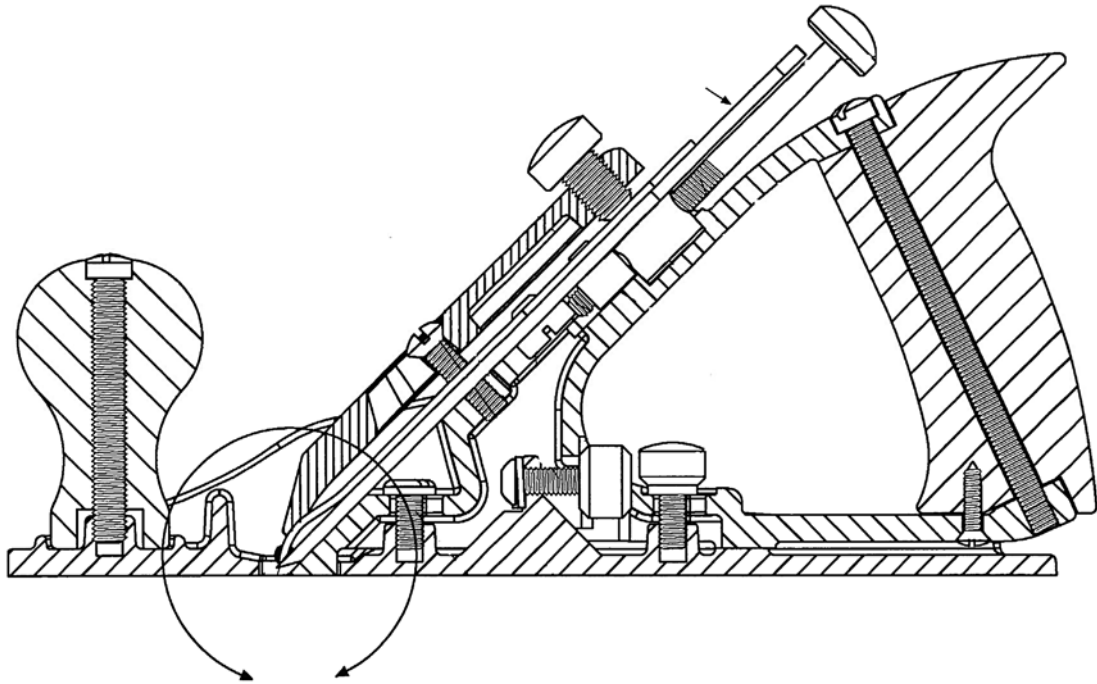
- A. a cutting list
- B. a work plan
- C. an orthogonal drawing
- D. a safe work instruction

Question 19

What is the main purpose of drawer kickers?

- A. to stop the drawer getting stuck
- B. to stop the drawer dropping down
- C. to stop the drawer kicking from side to side
- D. to stop the drawer touching the back of the carcass

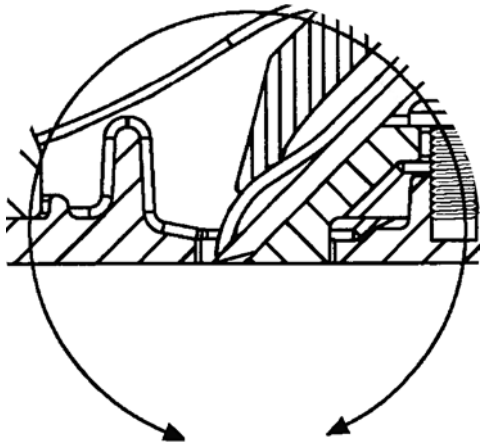
Question 20



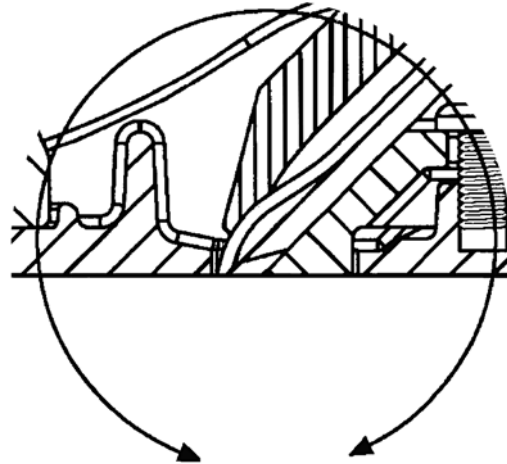
Norris type adjustment hand plane – section view

Which of the images below shows the correct position for the plane blade and cap iron?

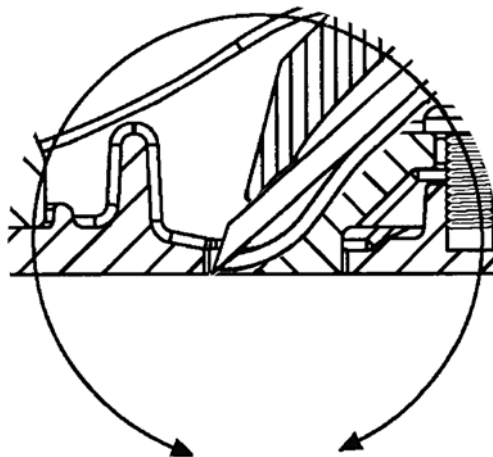
A.



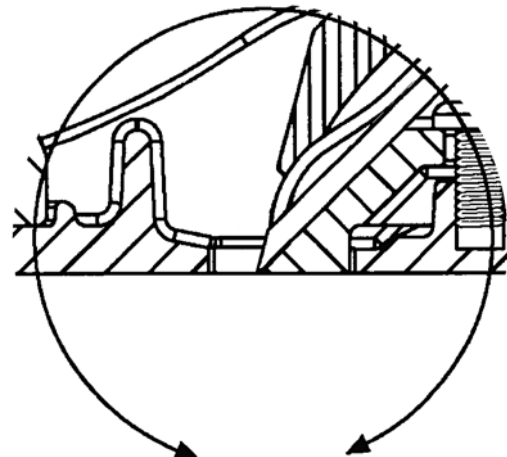
B.



C.



D.



SECTION B – Short answer questions**Instructions for Section B**

Remove the insert from the centre of this book before answering this section.

Refer to Figures 1, 2 and 3 in the insert when answering Questions 9–20 in this section.

Answer **all** questions in the spaces provided.

Use explanatory diagrams, charts and sketches if you believe they will improve your answer.

Question 1

You need to coat **both sides** of three large timber panels with sealer. Each panel measures 3 metres \times 1.5 metres.

- a. Calculate the total surface area of the panels.

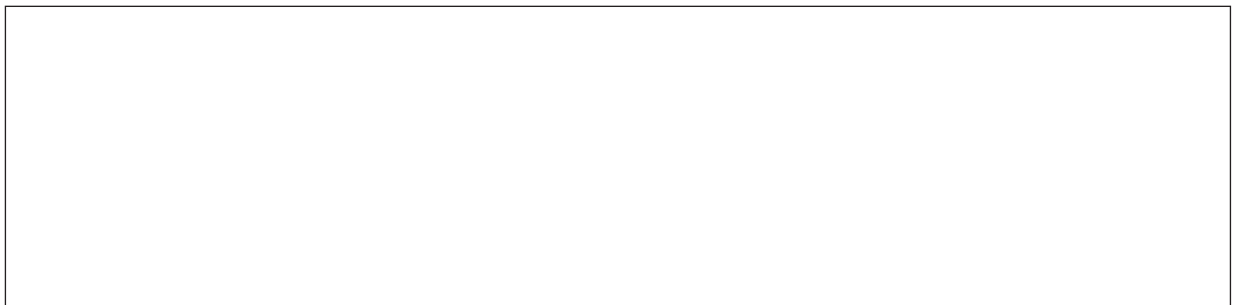
Show working out below.



2 marks

- b. If the coverage of the sealer is 1.5 m² per litre, how much sealer is required?

Show working out below.



2 marks

Question 2

In the construction of a solid timber kitchen table a cabinet maker uses 275 ml of PVA glue. He receives an order for another seven tables.

How many more containers of glue will he need to order if each container holds 500 ml?

Show working out below.

2 marks

Question 3

Select three items from the list below and explain how/why each can affect the measurement and cost of materials.

Items

- Grain direction
- Limited widths of available material
- Laminate sheet
- Making chair legs
- Drawers instead of shelves

Item 1 _____

Explanation _____

Item 2 _____

Explanation _____

Item 3 _____

Explanation _____

3 marks

Question 4

List two things to consider when measuring a room in which to install new cabinets. Use the table below to list the points you will consider and the reasons for your selection.

Selected consideration	Reason
<p>Example</p> <p>1. Position of existing windows</p>	<p>Example</p> <p>This will affect the position of cabinets and where appliances will be installed</p>
<p>2. _____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p>
<p>3. _____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p>

4 marks

Question 5

List three reasons why you should draw a full-size set out of a project before you begin construction.

1. _____
2. _____
3. _____

3 marks

Question 6

Which of the following is an acceptable method of attaching a solid timber table top to the frame?

Circle the method that is acceptable.

- i. nails and glue
- ii. table top connectors
- iii. pins and cams
- iv. timber or metal buttons
- v. metal brackets

1 mark

Question 7

Put the following work plan for making dowelled chair legs and back rail assembly in the correct sequence by placing the numbers 2–7 in the boxes provided. One has been given as an example.

- mark out dowel positions with a marking gauge
- check measurements on set out
- do a ‘dry run’ assembly
- collect glue, cramps and cramping blocks
- set up drill and check depth
- drill all holes
- glue and cramp up legs and rails

1

3 marks

Question 8

Select the most appropriate hardware (1–4) below for the following situations (i. – iii.).

1. top connector



2. pins and cam



3. shelf support with button



4. brass shelf support and bush



a. Write the relevant number (1–4) in the box provided.

- i. glass shelves
- ii. fixed shelves
- iii. adjustable timber shelving

3 marks

b. Explain what the leftover piece of hardware is used for.

1 mark

Refer to Figure 1 in the detachable insert when answering Questions 9–18.

Question 9

Explain the entanglement hazard.

1 mark

Question 10

List four other hazards visible in Figure 1.

i. _____

ii. _____

iii. _____

iv. _____

4 marks

Question 11

What does the mandatory safety sign direct the user to do?

2 marks

Question 12

In addition to the PPE indicated by the safety sign, what other PPE should the operator wear?

2 marks

Question 13

When cutting long lengths of timber, how should the timber be supported?

1 mark

Question 14

What changes should be made to the workshop/workspace in the picture to make it safe?

i. _____

ii. _____

iii. _____

3 marks

Question 15

The operator is docking a length of timber to its final length.

If you do not have a drop saw, what two other ways can this be done?

i. _____

ii. _____

2 marks

Question 16

The electrical cord for the saw has a tag on it near the plug.

a. What is this tag?

1 mark

b. What is its purpose?

1 mark

Question 17

Before starting any machining task, what two things should the operator do? (Refer to Figure 3 in the detachable insert.)

i. _____

ii. _____

2 marks

Question 18

Is there an airborne dust hazard while operating the drop saw?

No, explain why.	Yes, provide a method to reduce the hazard.

1 mark

Question 19

The saw in Figure 2 is not safe to use.

Explain

a. why it is not safe

1 mark

b. how to make it safe.

1 mark

Question 20

Using Figure 3 in the detachable insert, complete the following Job Safety Analysis (JSA) worksheet for the task shown in Figure 1.

Activity – List the tasks required to perform the activity in the sequence they are carried out.	Hazards – Against each task list the hazards that could cause injury when the task is performed.	Risk control measures – List the control measures required to eliminate or minimise the risk of injury from the identified hazard.
Ensure the tool is set up correctly	Electrocution Pinching/crushing	Make sure the tool is disconnected from the mains power supply. Ensure that the tool is securely mounted. Unlock and adjust only one movement at a time.
Connect the power	Electrocution	1.
Place the job on the saw	2.	Use correct lifting technique. Do not over reach. Bend your legs and keep the load close to your body. Ask for help if the load is too heavy for one person.
Cut the timber	3. Airborne dust Noise	Check guards before use. Check all locking and adjusting devices are tight and correctly adjusted. Do not place hand(s) in the line of cut. Do not cross over arms. Do not cut short lengths of material. Use the material clamps provided. Ensure dust bags are emptied and fitted correctly. Use a vacuum dust extractor if possible. Use PPE to prevent dust inhalation. Ensure the blade is sharp. Use PPE to protect your hearing.
Remove the job	Lifting the job – Manual handling	Use correct lifting techniques. Do not over reach. Bend your legs, keep the load close to your body and ask for help if the load is too heavy for one person. Ensure that the material does not contact the blade before or after cutting.
Remove the waste	Chance of laceration to hand	4.

4 marks

SECTION C – Case study**Instructions for Section C**

Answer **all** questions in the spaces provided.

The sofa table in Figure 1 is to be made by a local cabinet maker. The client has provided recycled ash timber to be used for the project.

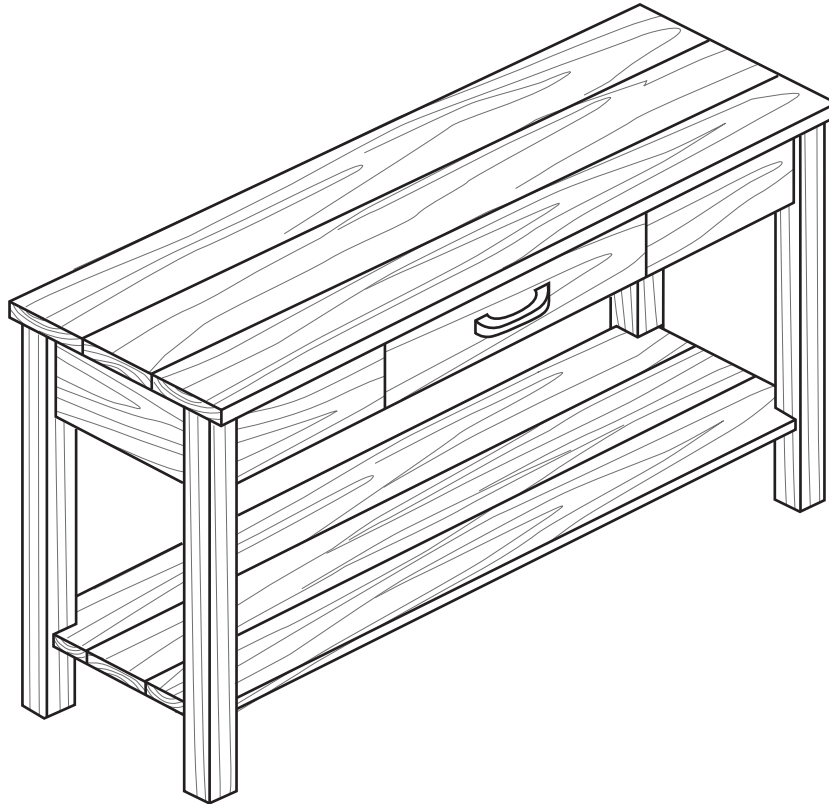


Figure 1 – Sofa table

Specifications for the sofa table shown in Figure 1

1. overall height is 810 mm
2. overall depth is 420 mm
3. overall length is 1230 mm
4. top overhang is 20 mm all round
5. legs are 50 mm × 50 mm square dressed recycled ash timber
6. back rail, end rails, front rails/drawer front and drawer guide rails are 140 mm × 20 mm dressed timber
7. top material is square dressed from 150 mm × 38 mm recycled ash timber to be finished to the final size as per cutting list
8. the shelf and rails are set back from the legs 10 mm all round and are of recycled ash timber
9. the drawer front is 520 mm long and covers the top and bottom front drawer rails
10. the drawer rails are 50 mm × 20 mm in section and are cut around the front legs and finish flush with the inside face of the end rails and dowelled to both the leg and end rail

Question 1

Using the specifications for the sofa table and Figure 1, complete the cutting list below.

Cutting list for sofa table

<i>Item No.</i>	<i>Item</i>	<i>No. of pieces</i>	<i>Length</i>	<i>Width</i>	<i>Thickness</i>	<i>Material</i>	<i>Machining/remarks</i>
1	leg	4		50		recycled ash	dowel to rails
2	top	1			30	"	3/1250 × 140 × 32
3	shelf	1	1170	360	20	"	3/1190 × 120 × 22
4	back rail	1	1090	140	20	"	dowel to legs
5	side rail	2		140	20	"	dowel to legs
6	drawer front	1	520	140	20	"	machine timber in order to match grain/groove for ply bottom
7	front rail	2			20	"	"
8	drawer rail	2	1130	50	20	"	dowel to legs/end rail
9	drawer guide	2	320	140	20	"	biscuit joint to back rail/check out & screw to drawer rails
10	drawer kicker	2	270	20	20	"	screw to drawer guide
11	drawer runner	2	270	20		"	screw to drawer guide
12	top fixing cleat	2		20	20	"	screw to end rail
13	drawer side	2	330	100	12	hoop pine	groove for ply bottom
14	drawer back	1	520	82	12	"	round along top edge
15	drawer bottom	1	504	324	4		fit to groove in drawer front/sides

10 marks

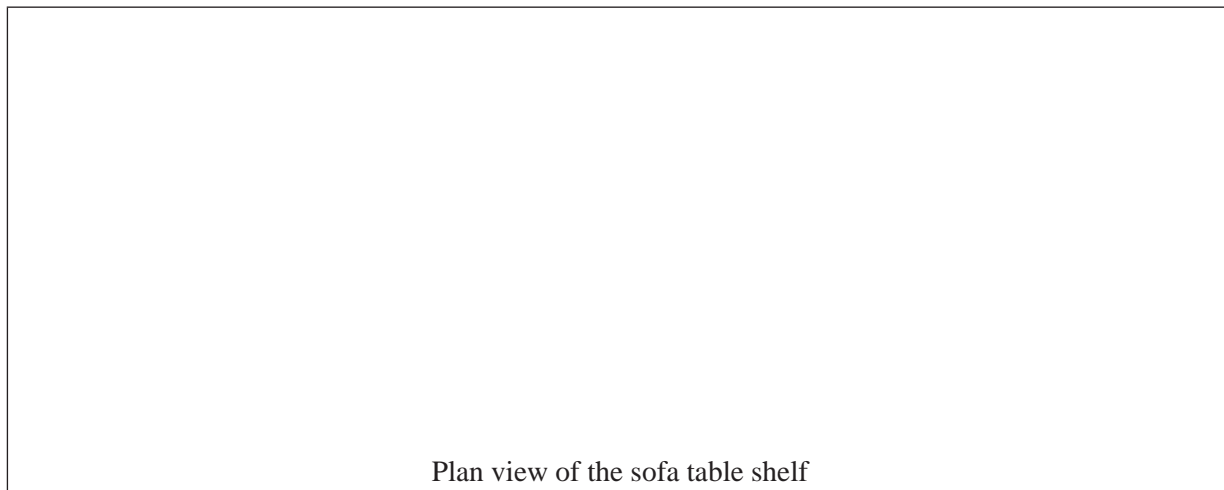
Question 2

- a. Sketch a plan view of the shelf for the sofa table.

Your sketch should include

- i. overall dimensions of the shelf
- ii. cut outs for the legs
- iii. method of joining the timber for the shelf
- iv. method of attaching to the legs.

Use the space below for your sketch.

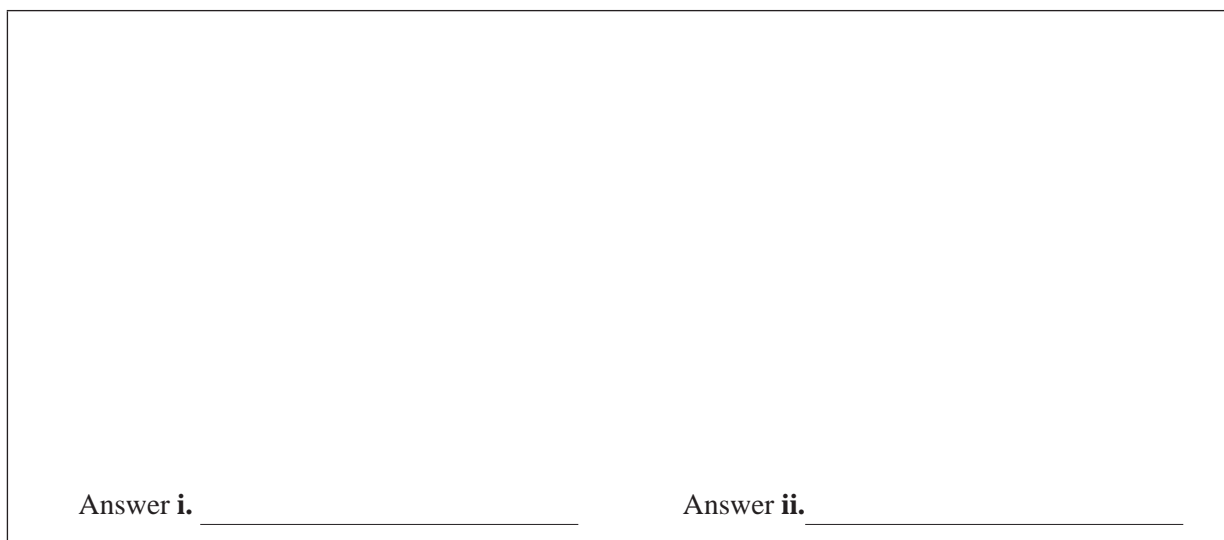


Plan view of the sofa table shelf

4 marks

- b. The specifications for the sofa table show that the material for the top is machined using three boards of 150 mm × 38 mm recycled ash timber. The client paid \$9.35 per lineal metre for this material.
- i. How many lineal metres are required to construct the top of the sofa table?
 - ii. What is the cost of the top?

Show your working out in the space below.



Answer i. _____ Answer ii. _____

2 marks

Question 3

Complete three major steps in the construction of the sofa table (Figure 1) for the work plan below.

1.	Machine dress all recycled ash timber as per the cutting list/full-sized set out.
2.	
3.	
4.	Cramp together legs and end rails making sure all checks for parallel, twist and wind, straight and diagonally square are carried out and all excess glue is removed.
5.	
6.	Sand all surfaces so that dents, scratches and machine marks are removed. The sofa table is now ready to be polished/finished.

3 marks

Question 4

Which portable power tool would be best to use to cut the shelf to the leg frame of the sofa table?

1 mark

Question 5

During the course of study you constructed a table with a fitted drawer.

List four hand tools you used and state the process for which they were used.

Hand tool	Process used
1. _____	
2. _____	
3. _____	
4. _____	

4 + 4 = 8 marks

Question 6

Calculate the cost of the recycled ash timber legs. The client paid \$7.75 per lineal metre for the material. Allow 30 mm for waste per leg. Show your working out in the space below.

Total cost = \$

2 marks

Insert for Section B

Please remove from the centre of this book during reading time.



Figure 1



Figure 2

SAFE OPERATING PROCEDURE

Operation/Plant:

Drop Saw

Workplace:

SOP No: SOP033

Staff instruction – Ensure proper induction by your supervisor and review operating manual prior to operating or supervising students.

Student instruction – Do not use machine unless a teacher has instructed you in its safe use and operation and has given permission.

Safety Equipment



Safety glasses must be worn when using this machine.



Long and loose hair must be contained.



Sturdy footwear must be worn at all times in work areas.



Close fitting/protective clothing must be worn.



Rings and jewellery must not be worn.



Hearing protection must be worn when using this machine.

Potential Hazards

1. Kickback
2. Noise
3. Flying chips and airborne dust
4. Contact with cutter at point of operation and during cleaning and adjustment

Pre-Operational Checks

1. Make sure all guards are in position, operational and correctly set up.
2. Make sure the work area is clear and safe.
3. Always support long or heavy timber.
4. Always support the timber at the cutting area. If the timber is bowed, place the round face down on the table and the round edge against the fence.
5. Always return the saw to the uppermost position after each cut before moving timber past the front of the saw.
6. Check that all locks on the machine are tight.
7. When using a stop to cut timber to length, always hold the timber down at the stop side.

Operational Checks

1. Do not cross your arms to grip the timber. Alter your stance and grip with other hand.
2. Do not drop the saw out too fast; allow the saw blade to cut through the timber.
3. Do not have any object in the path of the saw.
4. Do not place your hands in line with the cut.
5. Never leave the saw unattended with the power turned ON.
6. Do not attempt to remove off-cuts from the table with your hands.

Cutting irregular stock, branches or wood with embedded nails or screws is prohibited.

Housekeeping

1. Switch off equipment.
2. Leave the equipment and work area in a safe, clean and tidy state.

Figure 3