



# Victorian Certificate of Education 2011

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

## STUDENT NUMBER

Letter

Figures

Words


# VCE VET FURNISHING (CABINET MAKING)

## Written examination

Monday 7 November 2011

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	17	17	50
C	3	3	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 16 pages. There is a detachable insert for Sections B and C 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

Which is the most appropriate tool to use for levelling a kitchen cabinet kicker or base?

- A. laser level
- B. spirit level
- C. post level
- D. line level

#### Question 2

You are using a new glue to assemble chairs in your factory.

Which document explains the safety precautions for using the glue?

- A. the label on the container
- B. a pamphlet on glue safety
- C. a Job Safety Analysis Sheet
- D. a Material Safety Data Sheet

#### Question 3

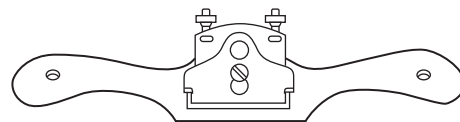
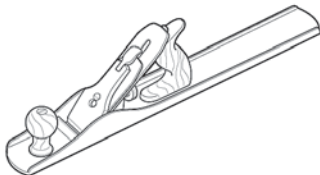
The most appropriate tool for 'finish sanding' a table top is a

- A. belt sander.
- B. orbital sander.
- C. delta sander.
- D. disc sander.

#### Question 4

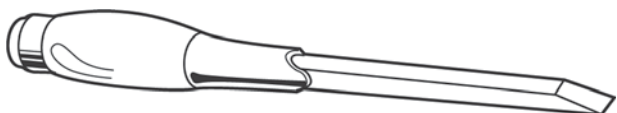
The most appropriate hand tool for shaping solid timber curved chair components is a

- A. jointer plane.
- B. spokeshave.



- C. wood rasp.

- D. chisel.



**Question 5**

The types of PPE required for use by employees will depend on the different hazards present in the workplace. To determine what the risk hazards are, which of the following does **not** need to be considered when completing a risk assessment?

- A. The PPE can be adjusted to fit the wearer correctly.
- B. The PPE is appropriate for the risks that are present.
- C. The PPE is appropriate for the conditions in which it is to be used.
- D. The PPE will control the risk by increasing the overall level of risk.

**Question 6**

Which is the most appropriate product to use for cleaning kitchen cabinets before installation?

- A. turpentine
- B. cream cleanser
- C. lacquer thinners
- D. methylated spirits

**Question 7**

Which is the most appropriate hinge to use for kitchen cabinet doors?

- A. steel piano hinge

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- B. soss hinge

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this material is not supplied.

- C. concealed hinge

Due to copyright restriction,  
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- D. butt hinge

Due to copyright restriction,  
this material is not supplied.

**Question 8**

Why are stretcher rails used in many chair designs?

- A. They are decorative and save timber.
- B. They are a place for resting your feet.
- C. They provide support for the back of the chair.
- D. They provide a stronger leg and rail construction.

**Question 9**

Which method of construction is most appropriate for the legs/rail of a timber table?

- A. a mitre joint using biscuits or dowels
- B. a hand-cut haunched mortise and tenon joint
- C. a hand-cut halving joint at each corner of the table
- D. a machine-made bridle joint at all corners of the table

**Question 10**

The seat of a chair should

- A. always be upholstered with fabric.
- B. be levelled by sawing the bottom of the legs.
- C. have a slight angle downwards to the front.
- D. have a slight angle downwards to the back.

**Question 11**

Which clamp is the most appropriate for assembling a number of mitred frames?

- A. 'G' clamp
- B. sash clamp
- C. band clamp
- D. spring clamp

**Question 12**

What is used to develop a cutting list?

- A. set out
- B. JSA sheet
- C. rough sketch
- D. isometric drawing

**Question 13**

Which workplace documents could be used to assist you when assembling a knock-down drawer unit?

- A. jigs and patterns
- B. final design sheets
- C. plans and elevations
- D. assembly sequence notes

**Question 14**

Before you begin assembling a knock-down drawer unit you should

- A. glue the dowels in position using PVA glue.
- B. paint all components with a waterproof paint.
- C. ensure all components and hardware are available.
- D. lubricate the drawer runners and the inside of the cabinet.

**Question 15**

While planing the plinth of a vanity unit, you accidentally cut the outer sheath of the power cord of the planer you are using.

What should you do?

- A. temporarily repair the cord with duct tape or something similar
- B. inform your co-workers to be careful with it when they want to use it
- C. tag the tool, report the damage to your employer, and use another planer
- D. replace the power cord when you have spare time, after you finish planing the vanity unit

**Question 16**

You are using a low angle block plane to trim the end grain on the legs of the base of a table. After sharpening the blade you replace it

- A. with the bevelled side up.
- B. with the bevelled side down.
- C. fitting the cap iron correctly.
- D. making sure the screw is tight.

**Question 17**

Which is the most appropriate hardware for attaching a 6 mm veneered ply back to a small chest of drawers?

- A. 20 mm cut tacks
- B. 40 mm flathead screws
- C. 20 mm bullet head nails
- D. 40 mm Philips head screws

**Question 18**

Which is the most appropriate tool to use when chiselling?

- A. claw hammer
- B. pein hammer
- C. rubber mallet
- D. wooden mallet

**Question 19**

Which of the following is the most suitable to use when assembling flat pack furniture?

- A. cams and dowels
- B. 50 mm bullet head nails
- C. coach screw and washers
- D. 50 mm countersunk screws

**Question 20**

In a widening joint, the biscuits are most effective when

- A. they are left to dry in the sun before use.
- B. there is only an even number in each joint.
- C. they are glued into one part of the joint before assembly.
- D. they are placed in the centre of the thickness of the material.

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

Remove the insert from the centre of this book during reading time.

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

Answer Questions 1 and 2 using the adapted version of the MSDS in Section B in the insert.

*Use the following information for Questions 1–3.*

Your company has recently purchased a new beam saw. As a result of this, your company has made a decision to replace particle boards with MDF products.

**Question 1**

According to the MSDS, MDF is composed of which four substances?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

4 marks

**Question 2**

List the PPE you should use when handling MDF.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

4 marks

**Question 3**

Other than the MSDS, name two different **workplace documents**. Outline their purpose.

Workplace document 1 \_\_\_\_\_

Purpose \_\_\_\_\_

Workplace document 2 \_\_\_\_\_

Purpose \_\_\_\_\_

4 marks

**Question 4**

Describe how you would check if a job is square. You may explain your answer by referring to a project completed during your course.

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4 marks

**Question 5**

What is the initial procedure used before beginning to assemble a solid timber coffee table?

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4 marks

**Question 6**

Below are some detailed instructions for assembling the coffee table.

**A.**

Due to copyright restriction,  
this material is not supplied.

**B.**

Due to copyright restriction,  
this material is not supplied.

**C.**

Due to copyright restriction,  
this material is not supplied.

Which tools will you need to assemble a coffee table?

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2 marks

**Question 7**

You are required to set up the edge bander for a run of thirteen doors. Each door must be edged on two long sides and one short side. The doors are 674 mm × 420 mm.

In the space provided, show your calculations for how many lineal metres of edge tape you will need to do this. Add 15% for waste.

TOTAL \_\_\_\_\_ lineal metres

2 marks

**Question 8**

- a. Describe **two** checks you are required to complete before you use a power tool on a worksite.

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2 marks

- b. You are required to attach a cabinet back using a pneumatic staple gun. The pneumatic staple gun jams. What should you do next?

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2 marks

**Question 9**

You arrive to install a customer's kitchen and realise that the plans you have and the plans the carpenter has are not the same.

What simple check can be made to determine which plans should be used?

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2 marks



**Question 10**

After a visit to a factory by a client, the client requires some changes to be made to the original plans. Outline how agreed changes/variations made to plans should be recorded.

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2 marks

**Question 11**

You have completed the installation of bathroom cabinets and return to the factory with the tools, off cuts, plans and other documentation.

What should you do with the plans?

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1 mark

**Question 12**

What construction method is commonly used for making a red gum dining table?

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1 mark

**Question 13**

Before sanding a dining table top you are making, you have to remove a dent made when a claw hammer was dropped onto it.

Explain the steps you will take to remove the dent.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

3 marks

**Question 14**

Explain what 'daily noise dose' measures.

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2 marks

**Question 15**

When finishing a piece of furniture, before polishing it, what grade/grit of abrasive paper should you use?

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1 mark

**Question 16**

Using four steps, describe your **work plan** for constructing the chair you made during your course.

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_
4. \_\_\_\_\_  
\_\_\_\_\_

4 marks

**Question 17**

You are assembling a flat pack chest of three drawers.

Complete the following table by indicating the tools needed and the steps you will follow.

<b>Task</b>	<b>Tool/Equipment/Information</b>
<b>Step 1</b> <ul style="list-style-type: none"> <li>• Check all components to match plans</li> </ul>	<ul style="list-style-type: none"> <li>• All dowel pins, cams, nails and screws, drawers and slides</li> <li>• Assembly instructions</li> <li>• Tape measure, metre rule</li> <li>• Hardware checklist</li> </ul>
<b>Step 2</b>	
<b>Step 3</b> <ul style="list-style-type: none"> <li>• Assemble the carcass</li> <li>• Fit the ply back</li> <li>• Check for square</li> </ul>	<ul style="list-style-type: none"> <li>• Pozidriv screwdriver</li> <li>• Tape measure</li> <li>• Hammer, 20 mm bullet head nails</li> </ul>
<b>Step 4</b>	
<b>Step 5</b>	
<b>Step 6</b> <ul style="list-style-type: none"> <li>• Attach handles</li> <li>• Adjust clearances for drawer fronts</li> <li>• Check drawer operation</li> <li>• Check for damage</li> <li>• Final quality inspection</li> </ul>	<ul style="list-style-type: none"> <li>• Pozidriv screwdriver</li> <li>• Screws for handles</li> <li>• Tape measure, rule</li> <li>• Battery drill and drill bits</li> <li>• Checklist for assembly</li> </ul>

6 marks

**END OF SECTION B  
TURN OVER**

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

Answer all questions in the spaces provided. Refer to Section C in the insert when answering Questions 1–3. Use explanatory diagrams, charts and sketches if you believe they will improve your answer.

**Question 1**

Complete the cutting list below for each part of the chair in the insert.

<b>Cutting list for the ash chair</b>					
<b>Item</b>	<b>Description</b>	<b>No. of pieces</b>	<b>Length (mm)</b>	<b>Width (mm)</b>	<b>Thickness (mm)</b>
<b>A</b>	Back leg	2	860	To pattern	34
<b>B</b>	Front leg	2		46	
<b>C</b>		1		55	20
<b>D</b>	Back rail	1	362	55	20
<b>E</b>	Side rail	1	370		20
<b>F</b>	Corner block	4	140		34
<b>G</b>		2		To pattern	
<b>H</b>	Seat	1	470		18

10 marks

**Question 2**

- a. In the cutting list, which two components could be used as a cost saving if the process known as ‘nesting’ was used?

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2 marks

- b. Calculate the cost of the front, back and side rails for the six chairs (55 mm × 20 mm) if the timber is sourced from 75 mm × 25 mm costing \$4.25 per lineal metre. Show calculations below.


Total cost \$ \_\_\_\_\_

3 marks

c. The chair seats are made up using 150 mm × 25 mm ash timber.

In the space provided

- i. set out the timber plan for the seat (2)
- ii. draw an outline of the seat showing the finished shape of the seat (2)
- iii. provide dimensions on the drawing (including width and length) (1)
- iv. show how the timber will be joined. (2)



7 marks

- d. Calculate the cost of the 150 mm × 25 mm ash timber for the timber seats. The cost per metre is \$8.70. Allow 30 mm extra per piece to enable each seat to be cut to shape. Show your calculations in the space provided.

Total cost \$ \_\_\_\_\_

4 marks

**Question 3**

List four different hand and/or power tools that you used when making a chair during your course of study. Explain how each tool was used and describe on which parts of the chair each tool was used.

<b>Hand/power tool</b>	<b>How each tool was used/parts of chair</b>

4 marks



**Insert for Sections B and C**

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

**SECTION B**

*Questions 1 and 2 refer to sections of the adapted version of the MSDS below and opposite.*

<b>MATERIAL SAFETY DATA SHEET</b> <b>Identification of Material and Supplier</b>
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**Product: Medium Density Fibre Board**

**Recommended use:**

Construction of furniture, cabinets and doors

General purpose building boards

<b>Composition/Information on Ingredients</b>
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**Substances**

Chemical name	Proportion
Wood from plantation softwood and eucalyptus	> 78%
Urea Formaldehyde (UF) resin	< 20%
Melamine Urea Formaldehyde resin (MUF)	< 20%
Paraffin Wax	< 2%

**Note:**

- i. The ingredients are bound together under heat and pressure. The process cures the resin but small amounts of formaldehyde from the resin may be released from the finished product. The finished product contains less than 1.0 mg/lit of formaldehyde when tested to AS/NZS 4266.16 (desiccator test).

**Material Safety Data Sheet – MDF panels and mouldings**

- ii. The proportion of paint on coated products is less than 1% of the board mass.
- iii. A proportion of less than 1% of dyes and/or pigments may be used to colour wood fibres in certain products.

<b>Exposure controls/Personal protection</b>
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<b>National exposure standards</b>	NOHSC[1003 (1005)] Australia / OSH New Zealand (May 1995)
<b>Wood dust (softwoods)</b>	5 mg/m <sup>3</sup> TWA 10 mg/m <sup>3</sup> STEL Listed as a sensitiser
<b>Wood dust (hardwoods)</b>	1 mg/m <sup>3</sup> TWA Listed as a sensitiser
<b>Formaldehyde</b>	1.0 ppm (1.2 mg/m <sup>3</sup> ) TWA 2.0 ppm (2.5 mg/m <sup>3</sup> ) STEL (short-term exposure limit of 15 minutes) Listed as a sensitiser and Category 2 carcinogen (probable human carcinogen)
<b>Paraffin wax fumes</b>	2 mg/m <sup>3</sup> TWA

**Engineering controls:**

All work with these boards should be carried out in such a way as to minimise the generation of, and exposure to, dust. Under factory conditions, sawing, drilling, sanding, etc. should be done with equipment fitted with exhaust devices capable of removing wood dust at source. Hand power tools should be fitted with dust bags and used in well-ventilated work areas that are cleaned at least daily, and dust removed by vacuum cleaning or wet sweeping method.

Inhalation of airborne particles from other sources in the work environment, including those from cigarette smoke, may increase the risk of contracting lung diseases associated with exposure to dust from this product. It is recommended that all work and storage areas be smoke free and other airborne contaminants be kept to a minimum.

For fire prevention avoid build-up of dust and keep working areas well ventilated. Avoid sources of heat and ignition including those associated with electrical equipment and ones associated with dust extraction equipment.

**Ventilation:**

Local exhaust ventilation should be provided at areas of cutting to remove airborne dust. General dilution ventilation should be provided as necessary to keep airborne dust below the applicable exposure limits and guidelines. The need for ventilation systems should be evaluated by a professional industrial hygienist, while the design of specific ventilation systems should be conducted by a professional engineer.

**Personal Protective Equipment:**

Skin protection: Wear loose, comfortable clothing. Long-sleeved shirts and trousers are recommended to prevent skin irritation. Wash work clothes regularly and separately from other clothes. Wear comfortable work gloves (AS 2161 or NZS 5812) to avoid hand cuts when handling panels.

**Eye protection:**

Wear industrial safety glasses or non-fogging goggles (AS/NZS 1336) when machining products.

**Respiratory protection:**

Avoid breathing dust. Wear a class P1 or P2 replaceable filter or disposable half face-piece respirator when machining products. Respirators should comply with AS/NZS 1716 and be selected, used and maintained in accordance with AS/NZS 1715.

<b>Health and Safety Information to Users</b>
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**Health and Safety Warning  
Wood panels product**

**Ingredients:** Wood fibre or particles and heat-cured resin

**Risk:** Dust and smoke from this product are irritating to eyes, skin and respiratory system. May cause sensitisation by inhalation (asthma) and skin contact (dermatitis). Repeated inhalation of the dust increases the risk of nasal cavity cancer and may increase the risk of lung fibrosis (scarring).

**Safety:**

Avoid repeated or prolonged contact with skin.

Avoid contact with eyes.

Avoid breathing dust and smoke.

Wear suitable clothing, standard duty gloves (AS 2161), and dust resistant eye protection (AS/NZS 1336). If machining without adequate dust or smoke extraction, respiratory protection (air-purifying dust mask) must be worn (AS/NZS 1715 and 1716). Keep work areas clean by wet sweeping and/or vacuuming.

Wash work clothes regularly and separately from other clothes.

**First-aid:**

Irrigate eyes with plenty of water.

Wash skin with soap and water.

**Disposal:**

Follow above safety instructions, and collect in containers for disposal as trade waste in accordance with local authority guidelines.

**The intact product and dust must not be burnt in barbecues, combustion stoves, or open fires in the home, as irritating gases are emitted.**

**TURN OVER**

## SECTION C

*Use the following information to answer Questions 1 and 2.*

A set of six dining chairs is required for a customer to match a table they have purchased from another supplier.



### **Specifications for the ash dining chair**

- Overall size is 860 mm high  $\times$  470 mm wide at the front  $\times$  430 mm wide at the back and the seat height is 450 mm overall at the front of the seat.
- The back legs are cut from timber machined to 34 mm thick.
- The front legs are made up from timber machined to 46 mm  $\times$  36 mm. The back leg is 46 mm wide at seat level.
- The seat is constructed from three boards machined to 20 mm thick, biscuited together and remachined to 18 mm thick as a finished size. Grain on the seat runs from side to side.
- The seat is then cut to size to enable a 7 mm overhang over the front legs, the back rail and finish even with the back leg at the side of the chair.
- The front, back and side rails are cut to length from 55 mm  $\times$  20 mm machined ash timber. The back rail is centred on the leg.
- The two top curved back rails are machined to pattern from timber machined to 90 mm  $\times$  45 mm to enable the two rails to be band sawn in a nested pattern.
- All rails are to be dowelled to the legs with the side rail dowel holes to be drilled so as **not** to make contact with the dowel holes in the front and back rails.
- Corner blocks are to be fitted using 4  $\times$  140 mm  $\times$  70 mm  $\times$  34 mm thick timber to suit. The corner blocks are to be fitted to the inside corners of the chair using countersunk screws and glued to the chair frame.
- The seat is to be screwed to the rails using two countersunk screws per rail.

**END OF INSERT FOR SECTIONS B AND C**