VCE VET FURNISHING (CABINET MAKING)

Written examination

Friday 2 November 2007
Reading time: 3.00 pm to 3.15 pm (15 minutes)
Writing time: 3.15 pm to 4.45 pm (1 hour 30 minutes)

Structure of book

<table>
<thead>
<tr>
<th>Section</th>
<th>Number of questions</th>
<th>Number of questions to be answered</th>
<th>Number of marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>B</td>
<td>13</td>
<td>13</td>
<td>47</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>102</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 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
- 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.

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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 one of the following should be used when completing a cutting list?
A. a full-size setout
B. a clear photograph
C. an isometric sketch
D. a rough prototype model

Question 2
You need to cut some kitchen doors from a particle board sheet. The doors need to be 735 mm × 375 mm × 19 mm. You have a melamine-faced particle board sheet which is a standard 2400 mm × 1200 mm × 19 mm and has a walnut grain pattern.
What is the maximum number of doors that can be cut from this standard sheet?
A. 6
B. 8
C. 3 along the grain and 6 across the grain
D. 9

Question 3
The most suitable material to use in the construction of a cabinet that will be painted is
A. softwood.
B. veneered particle board.
C. a plantation grown hardwood.
D. raw medium density fibreboard.

Question 4
When selecting a portable router from a tool cabinet, you find the 3 pin plug is damaged and the power lead is not fully attached to the plug. What should you do?
A. wind electrical tape around the plug joint and use the tool correctly
B. tag the tool appropriately and report the problem
C. plug in the tool and use it to complete the job as required
D. use the router to complete the task and then tag the tool
Question 5
Which type of joint is most appropriate to use when constructing a solid timber kitchen cabinet door?
A. through mortise and tenon
B. dowel
C. halving
D. corner bridle

Question 6
For a material to meet Australian Standards it must be
A. suitable to use in Australian conditions.
B. manufactured to perform to its stated purpose.
C. better than imported materials of the same type.
D. more expensive than other materials of the same type.

Question 7
What is the purpose of a Material Safety Data Sheet?
A. to promote the sale of the product
B. to give a good impression of the product
C. to comply with all industry expectations
D. to provide safety information regarding the product

Question 8
To ensure a solid timber table top displays good figure, you would select a
A. back sawn board.
B. right-angled grain.
C. quarter sawn board.
D. veneered particle board.

Question 9
What type of hinge would be best used for a reproduction sideboard or bookcase?
A. tee hinge
B. brass butt hinge
C. folding leaf hinge
D. semiconealed hinge

Question 10
Which hardware fittings are suitable for flat pack construction of furniture?
A. furniture dowels and glue
B. dyna bolts or loxins
C. cams and dowels
D. 100 mm wood screws
Question 11
The most appropriate material to use for cabinet construction in wet areas such as kitchens and bathrooms is
A. HMR MDF.
B. solid timber.
C. 16 mm plywood.
D. veneered particle board.

Question 12
From the range of joints listed, which is the most acceptable trade practice for chair construction?
A. biscuit joint
B. lapped dovetail joint
C. furniture dowels
D. screwed butt joint

Question 13
How many square metres are in two sheets of 2400 mm × 1200 mm × 19 mm melamine-faced particle board?
A. 2.88 m²
B. 4.83 m²
C. 5.678 m²
D. 5.76 m²

Question 14
What type of dovetail joint is used at the back of solid timber hand-made drawers?
A. mitred dovetail
B. through dovetail
C. single pin dovetail
D. large dovetail

Question 15
Which one of the following tools is best used to hold legs and rails while the glue sets and dries?
A. band cramp
B. sash cramp
C. F clamp
D. G clamp

Question 16
The document which tells you how to safely use, store and handle materials in a factory is known as
A. MSDS.
B. MDS.
C. RPL.
D. MDF.
Question 17
Why is it necessary to report ‘near misses’ when referring to safety?
A. to get funding to fix the problem
B. so the person responsible is blamed
C. to reduce the risk of it happening again
D. you are required to by law, if someone is injured

Question 18
Which personal protective equipment (PPE) is essential to use when operating a jig saw?
A. eye protection and hearing protection
B. hearing protection and dust mask
C. steel-capped boots and dust mask
D. eye protection and hair net

Question 19
Which type of extinguisher should be used on Class A fires involving ordinary combustible material such as wood or paper?
A. dry chemical powder
B. foam
C. water
D. carbon dioxide gas

Question 20
Which type of hand plane is the most appropriate to prepare a butt joint for a solid timber top?
A. rebate plane
B. compass plane
C. trying or jack plane
D. smoothing plane
SECTION B – Short answer questions

Instructions for Section B
Answer all questions in the spaces provided. Use explanatory diagrams, charts and sketches if you believe they will improve your answer.

Question 1
You have been given a full-size setout of a coffee table with a drawer in the centre of one of the long sides. What is the next work document you need to produce?

1 mark

Question 2
You have been given a new contact adhesive product and are unsure of the flammable danger of the product. What should you do before using it?

1 mark

Question 3
List two purposes of a cutting list.

1. 
2. 

2 marks

Question 4
On the sectional plan view below indicate which components are represented by the broken lines in A, B, C and D.

4 marks
Question 5
A back leg of a chair is 865 mm long, 65 mm wide and 42 mm thick (dressed size). How many lineal metres of 75 mm × 50 mm is required to construct back legs for 10 standard chairs? Add 15 mm docking allowance for each chair back leg.
Show all working out in the space below.

3 marks

Question 6
Calculate the total square metres required to attach plywood to the backs of 9 bookcases. Each bookcase back measures 1160 mm × 914 mm and the plywood to be used is 4 mm thick.
Show all working out in the space below.

2 marks

Question 7
Name three personal protective equipment items that must be used when operating a drop saw.
1. 
2. 
3. 
3 marks
Question 8
a. A cabinet-maker made 6 vanity units. The cost for labour only was $1770.00. How much was the labour cost for 1 unit?

1 unit cost $ ________________________ 1 mark

b. Calculate the labour cost per hour if one unit took 6.5 hours to make.

labour cost for 1 hour $ ________________________ 1 mark

Question 9
a. Rewrite the following list of abrasive papers in order from most abrasive to the finest finish.
   aluminium oxide 80 grit, 150 grit, 100 grit, 240 grit

   1. __________  2. __________  3. __________  4. __________ 1 mark

b. Name one other standard grade abrasive grit paper and fine-finishing grit paper.

   abrasive grit paper ____________________________________________

   fine-finishing paper ____________________________________________ 2 marks

Question 10
What are the two most important checks to be made when gluing up a solid timber door frame?

1. ____________________________________________ 2 marks

2. ____________________________________________ 2 marks
**Question 11**

Indicate the most appropriate location for 50 mm brass butt hinges to be positioned on a framed solid timber door.

2 marks
Question 12
As a manufacturer of bedroom furniture you see an opportunity to produce a new design for a pair (2) of bedside tables to display in your showroom. The design features full length veneered particle board sides and door, an adjustable shelf and top insert in the same material, with solid ash timber surrounds as a feature. This is shown below in Figure 1. Ash timber and ash veneered particle board are to be used.

![Bedside table with door](image)

Figure 1. Bedside table with door

a. Name three items of hardware required for the door to operate correctly.

1. ______________________________________________________

2. ______________________________________________________

3. ______________________________________________________

3 marks

The door, top insert, bottom, shelf and sides are to be cut from a sheet of veneered particle board that matches the solid ash timber used.

b. What product is suitable to edge these components?

_______________________________________________________

1 mark

c. Name one item of hardware used with the adjustable shelf.

_______________________________________________________

1 mark
d. Use the cutting list below for the 19 mm veneered particle board components for the pair (2) of bedside tables. Complete the sheet cutting plan using the grid provided.
Mark out, label each part and include the dimension for each component. Your plan should take grain direction and the economical use of the sheet into account.

<table>
<thead>
<tr>
<th>Cutting list for a pair (2) of bedside tables in ash VPB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item no.</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
</tr>
<tr>
<td>4.</td>
</tr>
<tr>
<td>5.</td>
</tr>
</tbody>
</table>

Grid
Standard 2400 mm × 1200 mm × 19 mm sheet

10 marks
Question 13
Refer to the factory layout below (Figure 2) when answering the following questions.

A. B. C. D. E.
hand protection dust mask half face respirator safety glasses ear protection

Figure 2. Factory layout
a. Which three safety signs (A–E) are needed in the processing area?

1 mark

b. Which three safety signs (A–E) are needed in the spray booth?

1 mark

c. Give one reason why the sheet materials vertical storage rack is next to the inwards goods area.

1 mark

d. Name two manual handling devices that should be used to unload sheet materials from a delivery truck.

1. 

2. 

2 marks

e. List two reasons for the positioning of the tool/hardware cabinet.

1. 

2. 

2 marks

Total 47 marks
A customer has ordered a bedside table as pictured below in Figure 3. It is to be constructed using plantation grown cedar timber.

Figure 3. Plantation grown cedar bedside table

Specifications for plantation grown cedar bedside table
- overall size is 640 mm high \times 640 mm wide \times 420 mm deep
- finished thickness of top is 19 mm, top overhang is 25 mm including back
- top insert, back and side rails are 19 mm plantation grown cedar veneered particle board
- legs are 40 mm \times 25 mm
- drawer front, side rails and back rail are set back 5 mm from the outside of the legs and are 135 mm \times 19 mm. The drawer front is machined from the plantation grown cedar timber
- stretcher rails are 35 mm \times 20 mm and set back 5 mm from the outside of the legs and 100 mm from the bottom of the leg to the underside of the stretcher rail
- top facings are 55 mm \times 20 mm (front and sides)
Question 1
Using the specifications for the plantation grown cedar bedside table and Figure 3, complete the cutting list below.

Cutting list for the plantation grown cedar bedside table

<table>
<thead>
<tr>
<th>Part</th>
<th>No. of pieces</th>
<th>Length</th>
<th>Width</th>
<th>Thickness</th>
<th>Material</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>leg</td>
<td>4</td>
<td>40</td>
<td>25</td>
<td></td>
<td>cedar</td>
<td>dowelled to all rails</td>
</tr>
<tr>
<td>top insert</td>
<td>1</td>
<td>530</td>
<td>365</td>
<td>19</td>
<td>cedar VPB</td>
<td></td>
</tr>
<tr>
<td>top facing (front)</td>
<td>1</td>
<td>640+</td>
<td>55</td>
<td>20</td>
<td>cedar</td>
<td></td>
</tr>
<tr>
<td>top facing (side)</td>
<td>2</td>
<td>420+</td>
<td>55</td>
<td>20</td>
<td>cedar</td>
<td></td>
</tr>
<tr>
<td>side rail</td>
<td>2</td>
<td>135</td>
<td></td>
<td></td>
<td>cedar VPB</td>
<td>dowelled to legs</td>
</tr>
<tr>
<td>back rail</td>
<td>1</td>
<td>540</td>
<td>135</td>
<td>19</td>
<td>cedar VPB</td>
<td>dowelled to legs</td>
</tr>
<tr>
<td>back/front stretcher</td>
<td></td>
<td>540</td>
<td>35</td>
<td>20</td>
<td>cedar</td>
<td>dowelled to legs</td>
</tr>
<tr>
<td>side stretcher</td>
<td>2</td>
<td>35</td>
<td>20</td>
<td></td>
<td>cedar</td>
<td>dowelled to legs</td>
</tr>
<tr>
<td>drawer front</td>
<td>1</td>
<td>135</td>
<td>19</td>
<td></td>
<td></td>
<td>grooved for ply bottom</td>
</tr>
<tr>
<td>drawer side</td>
<td></td>
<td>330</td>
<td>95</td>
<td>12</td>
<td>hoop pine</td>
<td>grooved for ply bottom</td>
</tr>
<tr>
<td>drawer back</td>
<td>1</td>
<td>400</td>
<td>77</td>
<td></td>
<td>hoop pine</td>
<td>top edge set down 6 mm and rounded over</td>
</tr>
<tr>
<td>drawer bottom</td>
<td>1</td>
<td>384</td>
<td>322</td>
<td>4</td>
<td>hoop pine</td>
<td>plywood</td>
</tr>
<tr>
<td>drawer rail</td>
<td>2</td>
<td>50</td>
<td>20</td>
<td></td>
<td>hoop pine</td>
<td>dowelled to leg and side rail</td>
</tr>
<tr>
<td>drawer runner</td>
<td>2</td>
<td>270</td>
<td>20</td>
<td>20</td>
<td>hoop pine</td>
<td></td>
</tr>
</tbody>
</table>

10 marks
Question 2
In the space provided below, explain how you would construct the top of the bedside table. You must include a work plan, dimensioning, labelling and sketched details. Use the cutting list and the sketch of the plantation grown cedar bedside table (Figure 3) to assist you.

a. Your plan must show how the top facings are to be joined to the top insert.
b. Draw and label the joint used at the front corners of the top and indicate the type of joint used.
c. Describe how the top will be fixed to the carcase.

Construction of the plantation grown cedar bedside table top

4 marks
Question 3
Calculate the total cost of the plantation grown sawn cedar timber and matching cedar veneered particle board sheeting (VPB) for the bedside table in Figure 3 using the following items and costing per unit.
1. Legs – 2.7 m × 50 mm × 38 mm @ $4.62 per lineal metre
2. Top insert – 530 mm × 365 mm × 19 mm VPB @ $33.52 per square metre (m²)
3. Top facings – 1.6 m × 75 mm × 25 mm @ $4.58 per lineal metre
4. Back/side rails – 1040 mm × 135 mm × 19 mm VPB @ $33.52 per square metre (m²)

Show all working out in the space below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Dimensions</th>
<th>Material Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legs</td>
<td>2.7 m × 50 mm × 38 mm</td>
<td>$4.62 per lineal metre</td>
</tr>
<tr>
<td>Top insert</td>
<td>530 mm × 365 mm × 19 mm VPB</td>
<td>$33.52 per square metre (m²)</td>
</tr>
<tr>
<td>Top facings</td>
<td>1.6 m × 75 mm × 25 mm</td>
<td>$4.58 per lineal metre</td>
</tr>
<tr>
<td>Back/side rails</td>
<td>1040 mm × 135 mm × 19 mm VPB</td>
<td>$33.52 per square metre (m²)</td>
</tr>
</tbody>
</table>

Total cost for all material $ __________

5 marks
Question 4
Complete four other major steps in the construction of the plantation grown cedar bedside table (Figure 3) for
the work plan below.

Work plan for the bedside table

1. Machine dress all plantation grown cedar, hoop pine and cut all required cedar veneered particle board for
the bedside table as per cutting list and full-size setout.

2.

3.

4.
5.

6. Sand all surfaces so that dents, scratches and machine marks are removed. The bedside table is now ready to be polished.

8 marks
**Question 5**
List four different **hand tools** that would be used to construct the plantation grown cedar bedside table in Figure 3. Explain the process each tool would be used for.
It may help you to consider the tools you used on projects during the year.

<table>
<thead>
<tr>
<th>Hand tool</th>
<th>Process/how the tool is used in the process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>

8 marks

Total 35 marks