



# Victorian Certificate of Education

## 2007

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

### STUDENT NUMBER

Letter

Figures

Words


# 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)

### 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	13	13	47
C	5	5	35
			Total 102

- 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 20 pages.
- 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 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. semiconcealed 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 m<sup>2</sup>
- B. 4.83 m<sup>2</sup>
- C. 5.678 m<sup>2</sup>
- D. 5.76 m<sup>2</sup>

**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 combustibile 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**

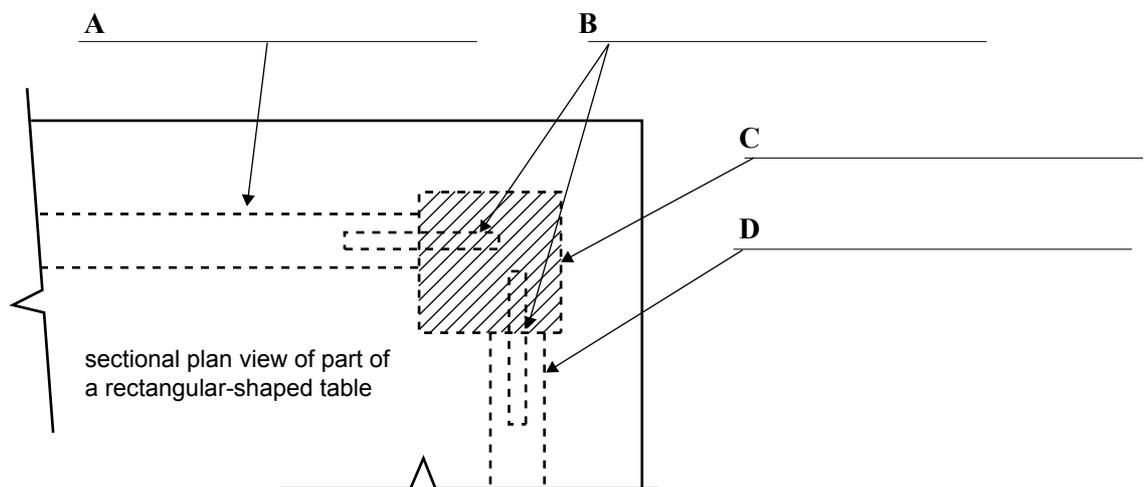
List two purposes of a cutting list.

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?

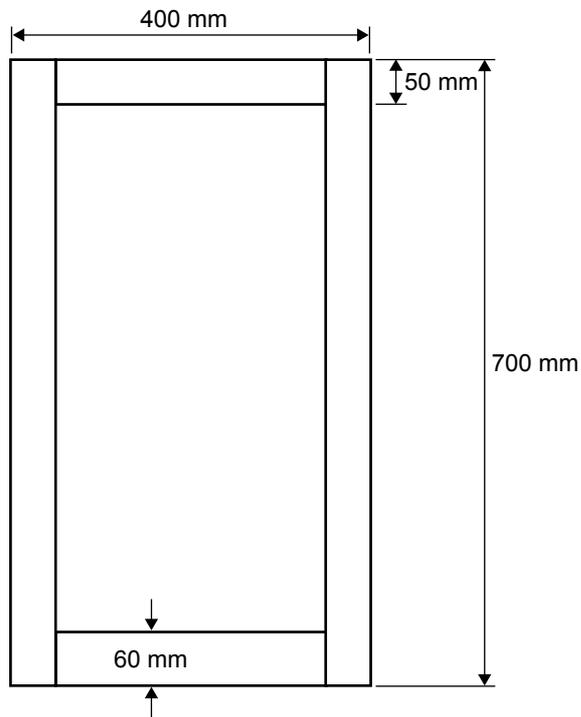
1. \_\_\_\_\_

2. \_\_\_\_\_

2 marks

**Question 11**

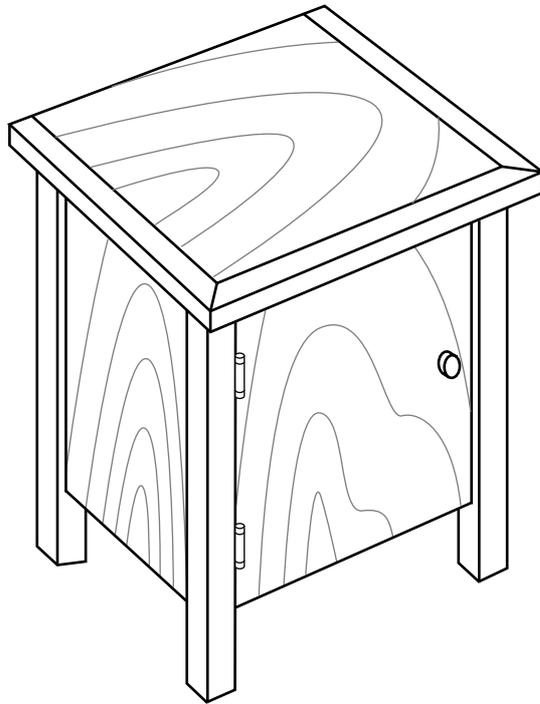
Indicate the most appropriate location for 50 mm brass butt hinges to be positioned on a framed solid timber door.



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.



**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

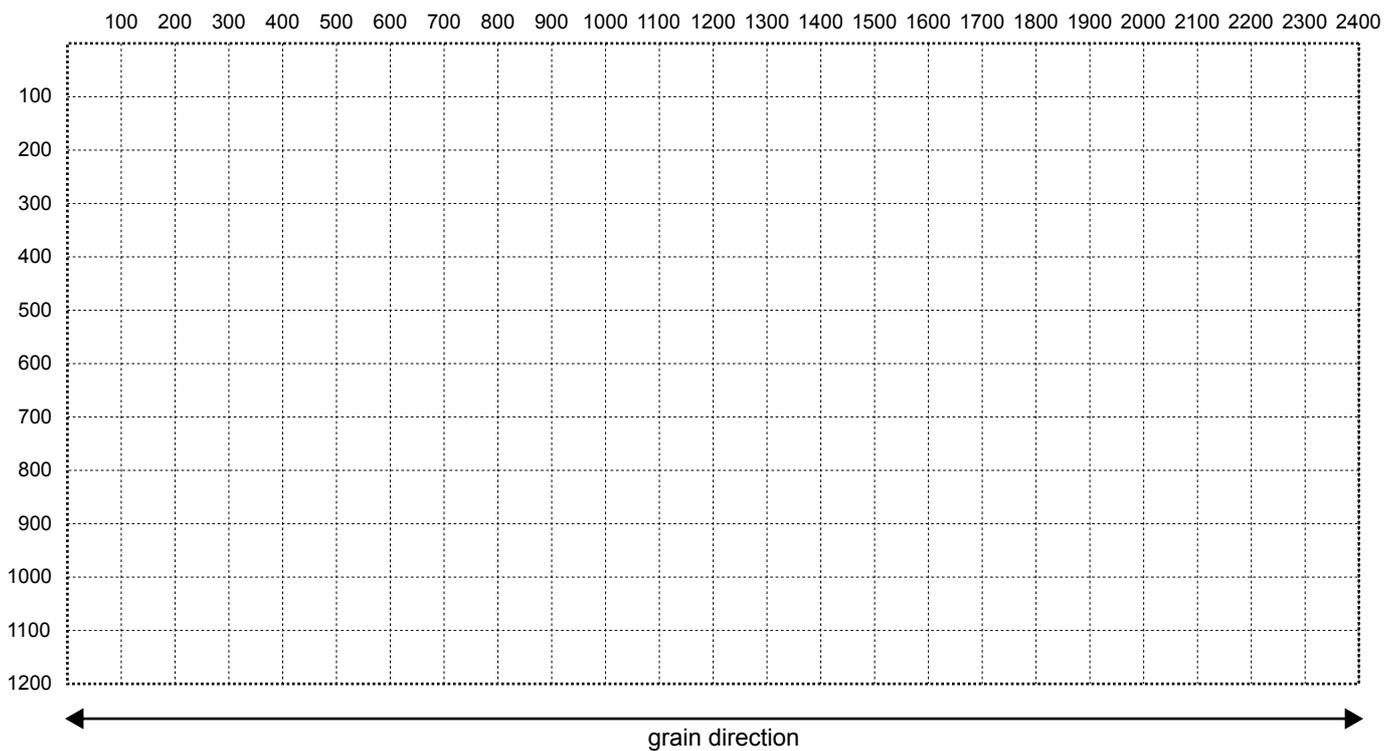
- d. Use the cutting list below for the 19 mm veneered particle board components for the **pair (2) of bedside tables**. Complete the sheet cutting plan using the grid provided.

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.

Cutting list for a pair (2) of bedside tables in ash VPB					
Item no.	Description	No. of pieces	Length (mm)	Width (mm)	Thickness (mm)
1.	top insert	2	530	365	19
2.	side	4	520	290	19
3.	door	2	385	400	19
4.	bottom	2	400	345	19
5.	shelf	2	400	340	19

Grid

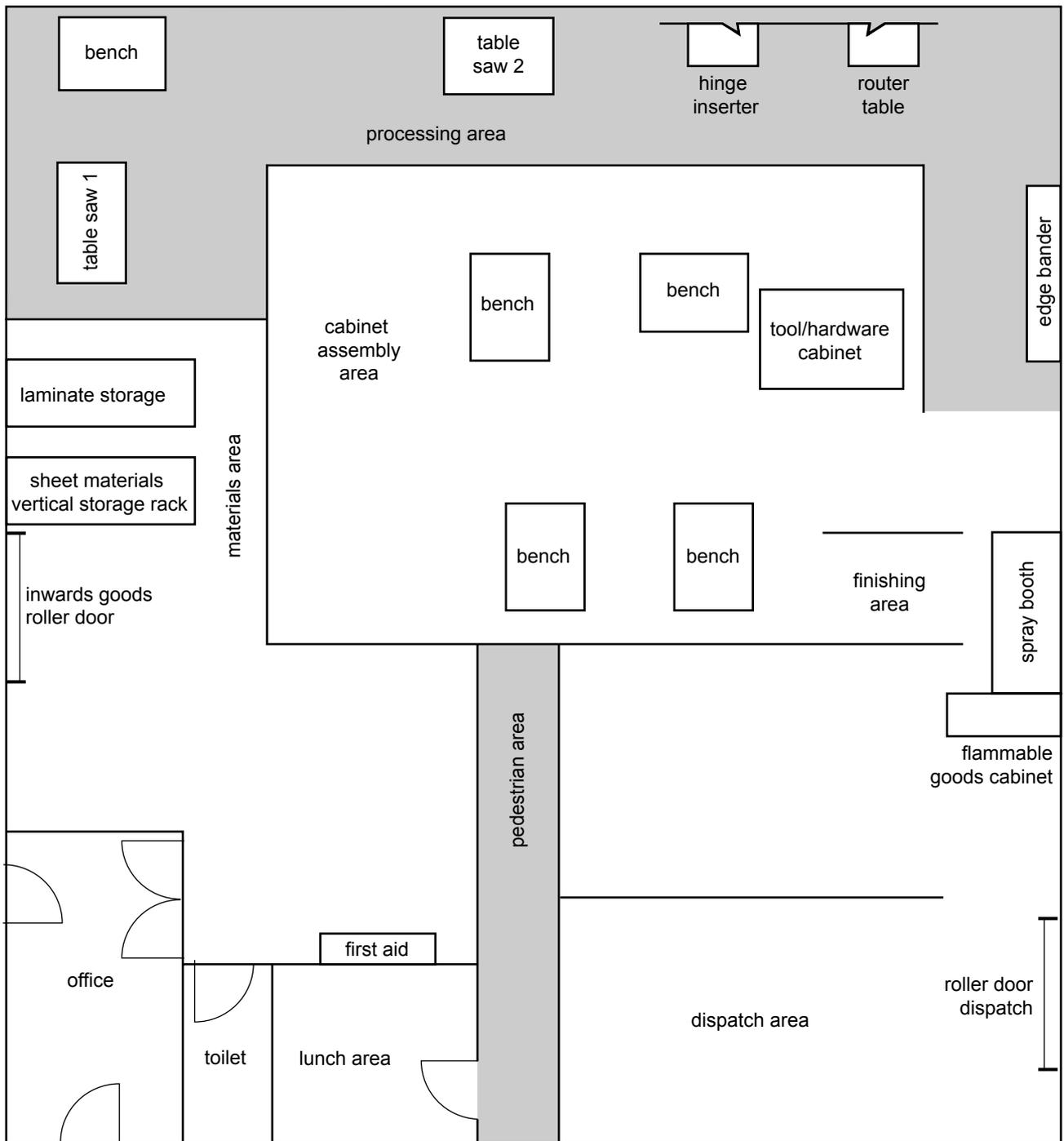
Standard 2400 mm × 1200 mm × 19 mm sheet



10 marks

**Question 13**

Refer to the factory layout below (Figure 2) when answering the following questions.



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

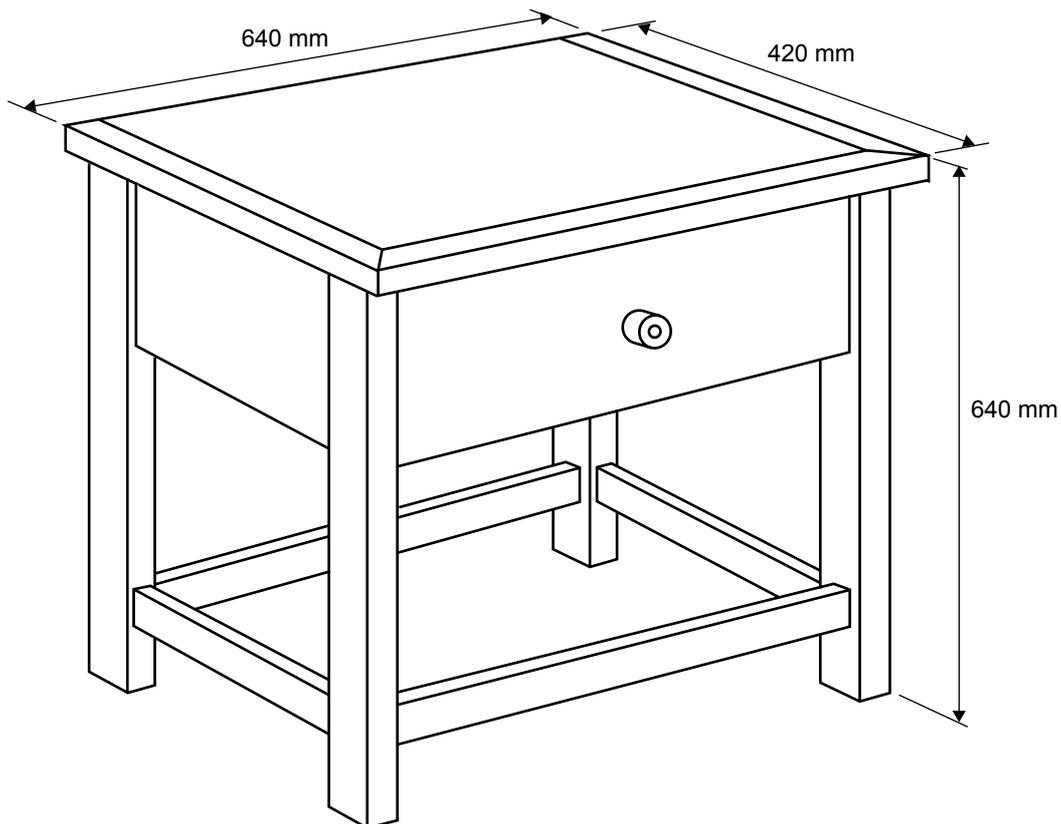
Total 47 marks

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

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

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

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**

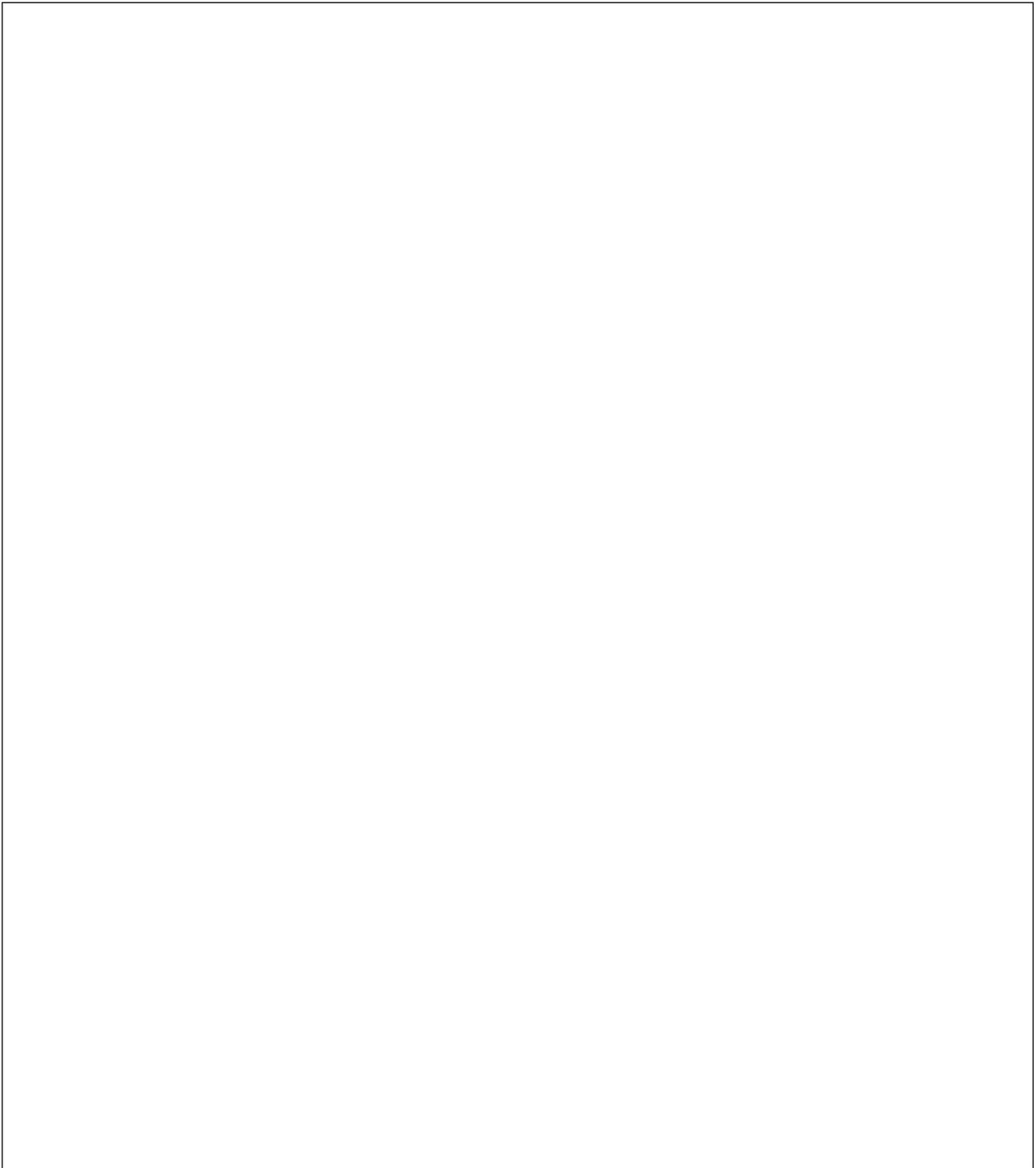
Part	No. of pieces	Length	Width	Thickness	Material	Remarks
leg	4		40	25	cedar	dowelled to all rails
top insert	1	530	365	19	cedar VPB	
top facing (front)	1	640+	55	20	cedar	
top facing (side)	2	420+	55	20	cedar	
side rail	2		135		cedar VPB	dowelled to legs
back rail	1	540	135	19	cedar VPB	dowelled to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

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 carcass.

**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 –  $2.7 \text{ m} \times 50 \text{ mm} \times 38 \text{ mm}$  @ \$4.62 per lineal metre
2. Top insert –  $530 \text{ mm} \times 365 \text{ mm} \times 19 \text{ mm}$  VPB @ \$33.52 per square metre ( $\text{m}^2$ )
3. Top facings –  $1.6 \text{ m} \times 75 \text{ mm} \times 25 \text{ mm}$  @ \$4.58 per lineal metre
4. Back/side rails –  $1040 \text{ mm} \times 135 \text{ mm} \times 19 \text{ mm}$  VPB @ \$33.52 per square metre ( $\text{m}^2$ )

Show all working out in the space below.

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.

<b>Hand tool</b>	<b>Process/how the tool is used in the process</b>
1.	
2.	
3.	
4.	

8 marks

Total 35 marks