



2010 VCE VET Furnishing GA 2: Written examination

GENERAL COMMENTS

In 2010, the number of students sitting the VCE VET Furnishing written examination was consistent with previous years. The examination assessed the underpinning knowledge and skills of all units of competence from Units 3 and 4 of the program.

Areas of strength

- completing a cutting list
- occupational health and safety
- recognition of timber joints
- basic tool selection and use

Areas of weakness

- hardware selection and construction knowledge
- generalised and basic work plans
- understanding of basic mathematical problems
- ability to describe with diagrams
- familiarity with sawn timber sizes

It was evident that students and their teachers had worked very hard to produce some excellent work and results. They are to be commended on their good work and achievements in this study.

Teachers and trainers are reminded that 2011 will conclude the current program and a new revised program will be introduced in 2012.

SPECIFIC INFORMATION

Section A – Multiple-choice questions

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	% No Answer	Comments
1	26	17	18	39	0	The smoothing plane was the only option. The spokeshave is used for shaping, sanding block for cleaning up, and the battery drill is the principle driver for a range of drill bits to drill holes.
2	7	61	31	0	1	The trimmer is used in conjunction with a small router cutter to remove the excess overhanging laminate when it has been stuck down with contact adhesive.
3	2	10	49	39	1	Few students answered this question correctly. The best height to use when assembling kitchen cabinets in the workshop is 450 mm, as the other options were either too low or too high.

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Question	% A	% B	% C	% D	% No Answer	Comments
4	8	18	65	9	1	'Knock-down' furniture can be assembled and dismantled, therefore the metal dowel and cam fitting, option C, was the only correct option.
5	0	95	1	4	0	The retracting steel tape measure was the most appropriate tool to measure up for kitchen cabinets.
6	18	77	5	1	0	The jigsaw (option B) was the best option as both curved and straight lines can be negotiated using this power tool.
7	55	15	14	17	0	Few students answered this question correctly. The front elevation showed the most information about a cabinet; for example, the plan would only show the top view; the cutting list denotes the list of parts and work instructions without a drawing could be very difficult to interpret. The front elevation could also indicate whether there were shelves, doors and/or drawers, therefore providing the most information.
8	1	69	24	5	0	When working it is essential to use only a current drawing. The version number provides this information.
9	13	6	13	68	0	The mortise and tenon joint (option D) was the only option as the butt joint can only be glued. The finger joint is used for a moving support rail or bracket and the biscuit joint is not appropriate or strong enough for this application.
10	5	18	62	15	0	A 32 mm chisel (option D) was the most appropriate response as narrow chisels would make it more difficult to keep the joint straight both across and along the grain.
11	3	12	79	5	1	The sharpening process required two steps: the grinding of the blade on a grinding wheel and the honing of the blade on water stone, oilstone or diamond stone to remove the burr.
12	5	23	45	27	0	The general industry standard for this type of door is 1 mm.
13	13	79	5	3	0	To calculate the amount of plywood in a cutting and costing list, multiply the length by the width in metres and then multiply by the number of pieces.
14	43	34	3	20	0	The correct answer was 50 mm x 25 mm as this was the only 'rough sawn' standard measurement given.
15	8	8	11	73	0	The correct response was 220-grade abrasive paper (option D). The higher the grade number, the better the finish.
16	27	34	37	2	0	Options A, B and D omitted one or more of the four checks required to assemble a leg and a rail joint correctly.
17	3	57	40	0	0	The cutting list should always be taken from the full-size set out.
18	8	47	7	38	0	The set out would best show details of the joints required.
19	21	2	75	2	0	A 5-degree angle sloping back (option C) was best used for a chair seat as an aid for comfort and as a design feature.
20	32	33	31	5	0	For the two-door base component, 1 mm colour edging is specified.



Section B – Short-answer questions

Question 1a.

Marks	0	1	Average
%	66	34	0.4

One of:

- cam and connecting pin
- dowel
- bolt.

Question 1b.

Marks	0	1	Average
%	68	32	0.4

The correct answer was a Pozidriv screwdriver, or a screwdriver.

Some students wrote a Phillips screwdriver, but this was incorrect. Other secondary tools were a mallet, claw hammer or a wooden block.

Question 2

Marks	0	1	2	3	4	5	Average
%	11	42	31	12	1	2	1.6

Assembly operation or task	Order (1, 6 and 13 were provided)
Clear the work area	1
Check all parts are available as per plans	2
Knock dowels in holes	3, 4, 5
Insert the cams into the cam holes	3, 4, 5
Screw pins into pin holes	3, 4, 5
Assemble top and bottom to LH side	7, 8
Fit plinth rail to assembled parts	6
Join assembled parts to RH side	7, 8
Tighten all cams	9
Fix back with nails provided	10
Insert shelf pins	11
Install shelves	12
Check and return all tools and equipment	13

Where there were multiple numbers, responses with a varying order were acceptable but only according to the table above.

Question 3

Marks	0	1	2	Average
%	7	24	70	1.7

- Ensure that the route is clear.
- Ask another person to assist.
- Use safe lifting procedures (bend the knees and/or keep your back straight).

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Question 4

Marks	0	1	2	3	4	Average
%	3	4	12	30	50	3.2

Symbol	Description of symbol
	Plan view of the stovetop (four elements)
	Dishwasher plan view
	Exhaust fan plan view
	Sink, including drain board and possible disposal

Question 5a.

Marks	0	1	2	3	Average
%	2	7	56	35	2.3

PPE that should be used when undertaking the operation in the photograph includes:

- safety glasses
- eye protection
- dust mask.

Question 5b.

Marks	0	1	2	3	Average
%	0	3	16	80	2.8

Students were required to state three other ways to make the operation in the photograph safer. Acceptable responses included (three of):

- clamp material to hold it more firmly
- clear work bench of other equipment
- change stance of operator to something more stable
- remove power tool cord from bench.

Question 5c.

Marks	0	1	2	Average
%	21	1	78	1.6

The question asked students to use three pieces of timber to make a top for a coffee table. Each joint had five biscuits in it. Therefore, ten biscuits were required.

Question 5d.

Marks	0	1	2	Average
%	5	35	60	1.6

The item that could be used to help ensure a dust-free workplace was a portable dust extraction unit or a properly fitted dust bag.

Question 5e.

Marks	0	1	2	3	4	Average
%	4	4	26	51	16	2.7

Steps required to successfully join the three solid timber parts for the top of a coffee table shown in the photograph were any four of:

- mark and use the biscuit machine as suggested, using five biscuits to each butt joint
- place three cramps on the workbench, two on the bottom and towards each end to support the three boards

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- lay three boards on the two cramps and adjust cramps spacing to support the boards (students could have said they might do a dry run here at this stage)
- glue all biscuits in place, run the glue along the length of the joint, place the third cramp on top and tighten the joint
- wipe off excess glue, and check that the boards are flat across the width of the top and that both joints are fixed together tightly.

Question 6

Marks	0	1	2	3	Average
%	3	20	44	33	2.1

All of:

- mitre joint (there may be biscuits or dowels used to secure the joint)
- mortise and tenon joint or through mortise and tenon
- dowel joint.

Question 7

Marks	0	1	2	3	Average
%	74	16	6	5	0.5

Students were required to list three standard sizes for rough sawn Victorian Ash. Examples for answers included: 100 mm x 25 mm; 100 mm x 38 mm and 150 mm x 50 mm. Widths of sawn timber start at 50 mm, 75 mm, 100 mm, 125 mm, 150 mm, 175 mm, 200 mm, 250 mm, and 300 mm. Thicknesses start at 25 mm, 38 mm, 50 mm, 75 mm, 100 mm, 125 mm, and 150 mm.

Question 8

Marks	0	1	2	Average
%	46	42	12	0.7

Sample answers included: to give the customer an idea of what it looks like; to provide information to complete a full-size set out and cutting list; to show the basic design of the project; and to provide the overall measurements.

Question 9

Marks	0	1	2	3	Average
%	10	8	24	59	2.3

Joint; mortise and tenon joint/dowel joint. The reason these were selected was that it was a very strong joint; it took a longer time, but also provided good mechanical strength done with correct proportions and has high surface gluing area.

Question 10

Marks	0	1	2	3	4	Average
%	28	14	14	17	27	2

This question asked for information that should be included in the title block of the plans for the job required. Students could have responded using any four of:

- address, location of the job
- type of material used on top; for example, melamine or granite
- the company making the project
- customer's name and phone number
- the title of the project.

Question 11

Marks	0	1	Average
%	13	87	0.9

After having completed a job, the drawings, cutting lists, work instructions and specifications should have been stored in numerical, logical order for possible future use. They could also have been stored on a hard drive.

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Question 12

Marks	0	1	Average
%	21	79	

MSDS is an acronym for **M**aterial **S**afety **D**ata **S**heet.

Question 13

Marks	0	1	2	3	4	5	6	Average
%	2	4	15	32	27	17	3	

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 minimize the risk of injury arising from the identified hazard.
Ensure that the tool is correctly set up	Rotating cutter	<ul style="list-style-type: none"> disconnect power ensure all blade guards are fitted securely, stops set correctly and all fastenings tightened
Connect the power	Electrocution, faulty cord, wires	Check the tag date for currency
Secure the timber	Pinching and crushing	Use suitable lifting technique and ensure that the material is placed correctly.
Cut the biscuit slots	<ul style="list-style-type: none"> rotating blade noise flying chips airborne dust 	<ul style="list-style-type: none"> do not place hands in front or to the side of the blade hold the tools firmly make sure the material can't move all guards and fittings secured wear PPE use hearing and eye protection use dust extraction
Remove the timber	Lifting/manual handling	<ul style="list-style-type: none"> use correct lifting techniques do not over reach bend your legs keep the load close to body ask for assistance with heavy loads do not rotate back – move your feet

The answers listed above are possible answers. Not all answers were needed for full marks.



Section C – Case Study

In the case study, an employer requested the construction of a large coffee table that was to be made using Victorian Ash timber and was to feature a storage drawer. Figures for this table as well as specifications were provided in the examination.

Question 1

Marks	0	1	2	3	4	5	6	7	8	9	10	Average
%	6	3	8	6	8	11	17	13	17	10	1	5.5

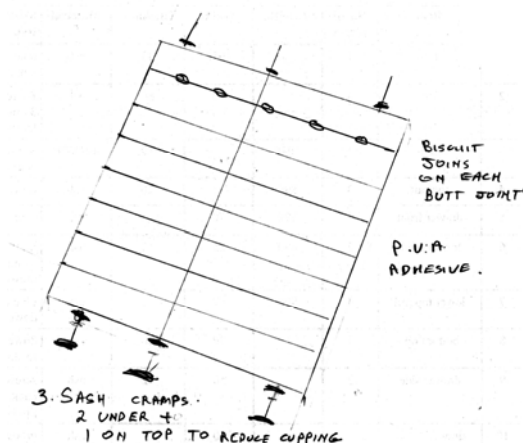
Item No	Item	No of Pieces	Length	Width	Thickness	Material	Machining/Remarks
1	top	1	1056	1056	33	ash	machine from 8 equal pieces
2	leg	4	430	60	60	ash	8/440 x 62 x 31 mm to be laminated
3	shelf	1	1010	1010	19	ash VPB	iron-on veneer edging
4	top rail	3	890	70	20	ash	dowelled to legs
5	drawer front	1	890	70	20	ash	screwed to drawer
6	drawer guide	2	890	25	15	ash	fixed to 2 top rails to support metal drawer slide
7	lower top rail	4	890	40	20	ash	glued to top rail, dowel to legs
8	bottom rail	4	890	70	20	ash	dowelled to legs/cut to shape
9	drawer side	2	600	50	12	ash	screwed to front/back, grooved for ply bottom
10	drawer front/back	2	841	50	12	ash	grooved for ply bottom
11	drawer bottom	1	851	586	4 or 5	ash plywood	fit to groove in drawer sides, back and front
12	top fixing cleat	3	890	20	20	ash	screwed and countersunk to top rail and top

Question 2

Marks	0	1	2	3	4	Average
%	21	7	25	25	23	2.3

- Use biscuit joins on each butt joint.
- The type of adhesive used should be PVA glue.
- Each board should be 132 mm wide to enable the final size to be achieved.
- Use 3 sash cramps, 2 under and 1 over the top, to help reduce cupping of the timber top.

The following is a sample answer:



Question 3

Marks	0	1	2	3	4	Average
%	58	15	14	8	6	0.9

Cost of the top

$$1056 \times 8 = 8.448 \text{ lineal metres}$$

$$8448 \times \$9.85$$

$$= \$83.20$$

Cost of iron-on veneer

$$1056 - 46 (\text{top overhang} \times 2) = 1010 - 120 (\text{thickness of leg} \times 2) = 890 \times 4 = 3.560 \text{ metres}$$

$$3.560 \times \$3.20$$

$$= \$11.39$$

Legs (2 pieces per leg)

$$430 \times 8 = 3.440 \text{ lineal metres}$$

$$3.440 \times \$4.90$$

$$= \$16.86$$

$$\text{Total cost is } \$83.20 + \$11.39 + \$16.86 = \$111.45$$

Question 4

Marks	0	1	2	3	4	5	6	7	8	Average
%	17	3	8	17	23	14	10	6	3	3.6

- Machine dress all the ash to the required sizes in order to enable the joining processes to be completed prior to the construction processes.
- Sand all the components.
- Join top, glue legs and rails left to right. Allow the glue to dry. Glue up leg and rails, left and right together.
- Make up drawer and attach runners.
- Fix shelf and top.
- Attach the front to the drawer.
- Sand all surfaces so that dents, scratches and machine marks are removed.
- When the coffee table is surface finished and polished, attach the handle for the drawer.

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Question 5

Marks	0	1	2	3	4	5	6	7	8	Average
%	9	0	3	2	3	13	14	8	48	6.2

Hand/Power Tool	Process/How the Tool was used
spokeshave	To clean up shaped components
dovetail saw	To cut hand dovetails for a drawer
battery operated drill	To drill holes and screw in screws
orbital sander	To fine finish all timber components

Question 6a.

Marks	0	1	2	3	Average
%	24	24	11	41	1.7

Three potential dangers because of coming in contact with wood dust were:

- respiratory problems/problems breathing/sneezing
- skin irritants/scratching rashes
- allergic reactions.

Question 6b.

Marks	0	1	Average
%	21	79	0.8

Victorian Ash has an allergic potential and the result is that one can contract dermatitis.

Question 6c.

Marks	0	1	2	Average
%	50	6	44	1

- sanding timber without proper PPE
- cutting timber without proper PPE