



JUNIOR CERTIFICATE 2005

**MATERIALS TECHNOLOGY
(WOOD)**

MARKING SCHEME

ORDINARY LEVEL

SECTION A

NOTE

Please ensure that totals for each question are divided by two before entering marks on marking sheets.

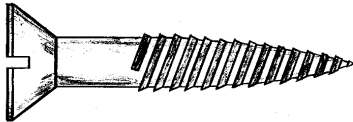
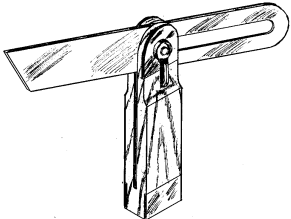
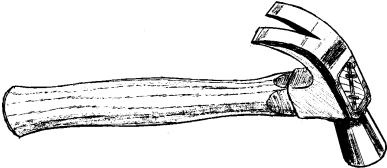
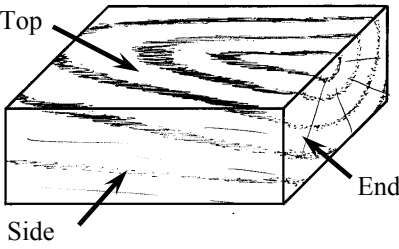
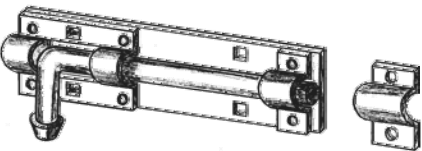
SECTION A - Short Answers

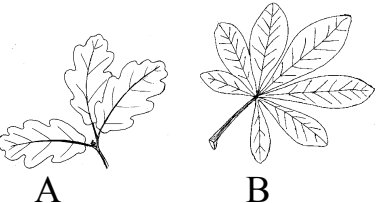
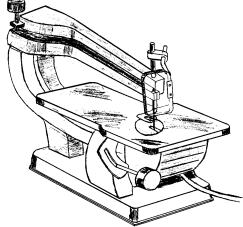
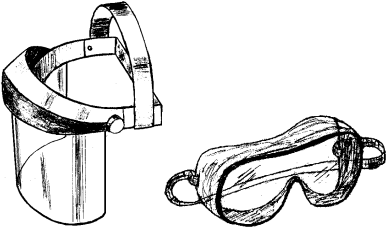
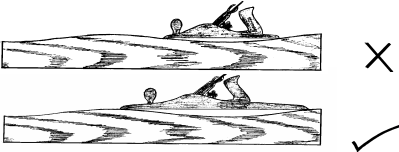
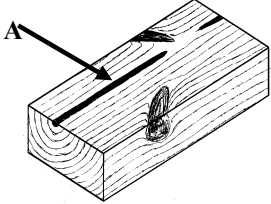
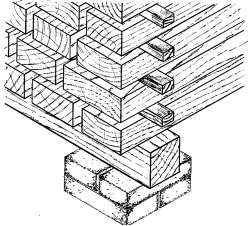
Mark all questions, select the best 16 questions

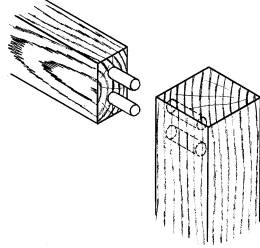
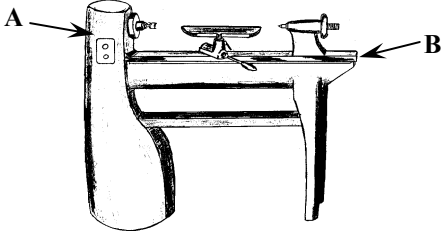
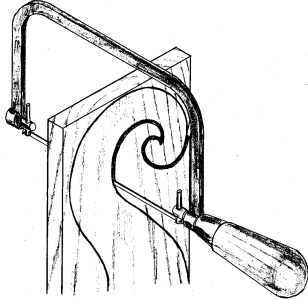
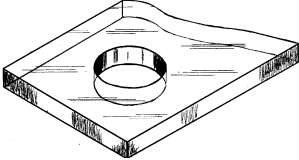
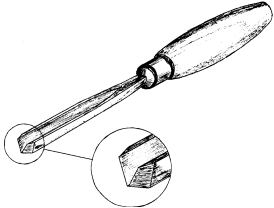
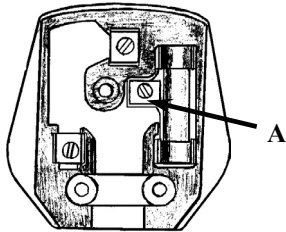
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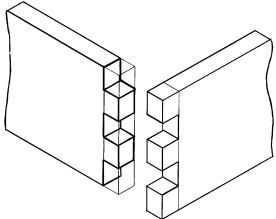
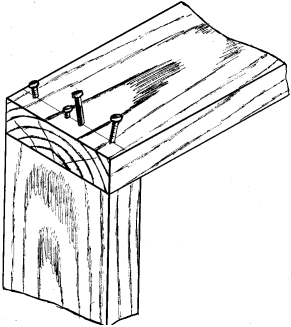
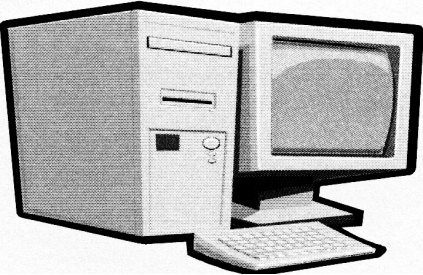
Divide the final mark by 2 on completion of marking.

A mark must be shown under each heading, including zero.

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
1.	Countersunk head	5 marks.	
2a.	<p><i>Name:</i> Sliding bevel</p> <p><i>Use:</i> Used like a try square. Used to help draw lines at a set angle across the wood.</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
OR		OR	
2b.	<p><i>Name:</i> Claw Hammer</p> <p><i>Use:</i> For driving nails and for pulling nails.</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
3.		<p>Any one 2 marks.</p> <p>Any two 4 marks.</p> <p>All three 5 marks.</p>	
4.	<p><i>Name:</i> Tower bolt, draw bolt, barrel bolt.</p> <p><i>Use:</i> Locking doors from the inside. Securing one door of double doors.</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
5.	A: Oak B: Horse Chestnut	Either one, 3 marks. Both 5 marks.	
6.	Scroll saw	5 Marks	
7.	Lathe work Drilling Grinding Using the router Spraying Etc.	Any one, 3 marks. Two rules, 5 marks.	
8.	The long plane will plane the humps and skip the hollows until the entire surface is even. The shorter the plane the more likely it is to follow the existing curvature of the wood.	5 marks	
9.	Pith	5 marks	
10.	Norway Spruce — Softwood Ash ————— Hardwood Douglas Fir ——— Softwood Horse Chestnut— Hardwood Scots Pine ——— Softwood	1 mark per correct answer.	
11.	This allows air to circulate freely under the stack. Prevents the bottom boards from soaking moisture up from the ground.	5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
12.	Dowel Joint.	5 marks.	
13.	A: Headstock B: Bed	Either one, 3 marks. Both 5 marks.	
14.	Coping saw.	5 marks.	
15.	Drill slowly. Pilot hole. Support well underneath. Masking tape on the top and bottom.	Any one 5 marks	
16.	V-Tool	5 marks	
17.	Brown	5 marks	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
18.		5 marks.	
19.	Skew nailing. Dovetail nailing.	5 marks.	
20.	Text.	5 marks.	

SECTION A

Note

Divide final mark by 2 on completion of marking of this section



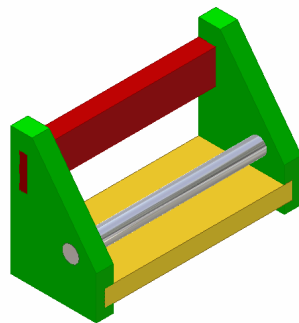
JUNIOR CERTIFICATE 2005

**MATERIALS TECHNOLOGY
(WOOD)**

MARKING SCHEME

ORDINARY LEVEL

SECTION B



NOTE

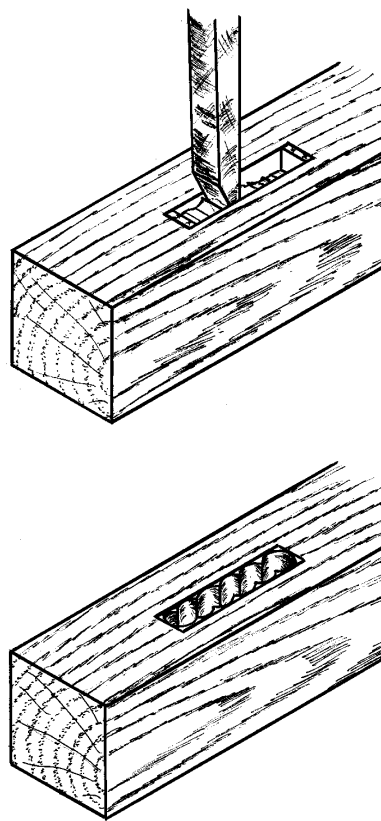
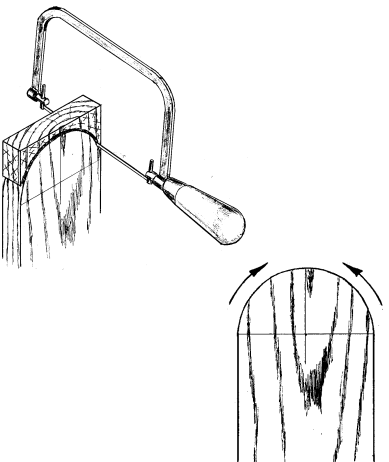
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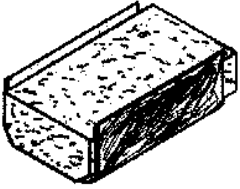
SECTION B

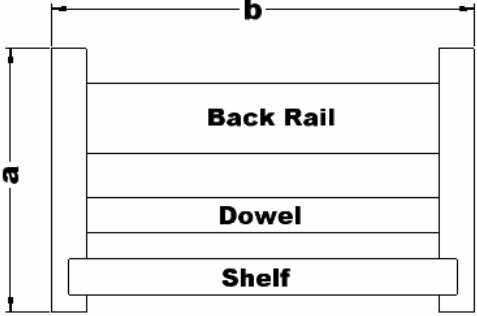
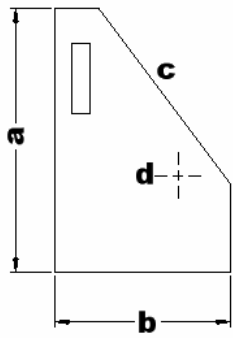
Mark for best three questions.

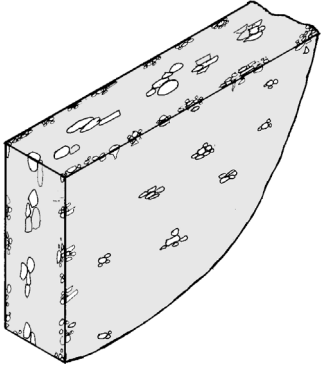
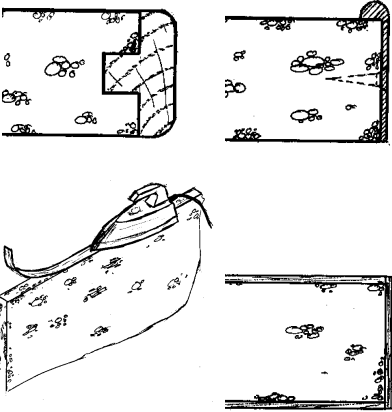
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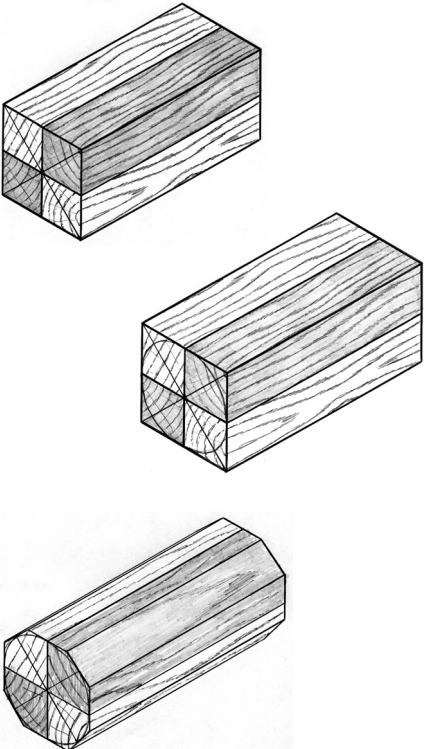
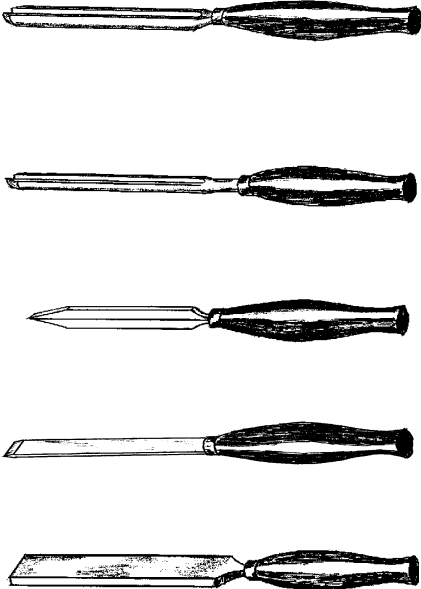
Divide the final mark by 2 on completion of marking

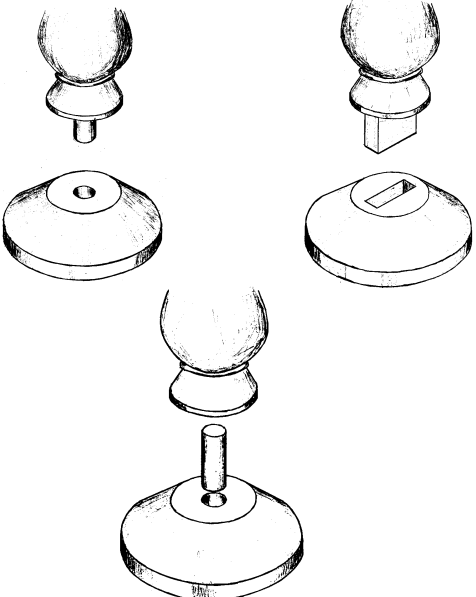
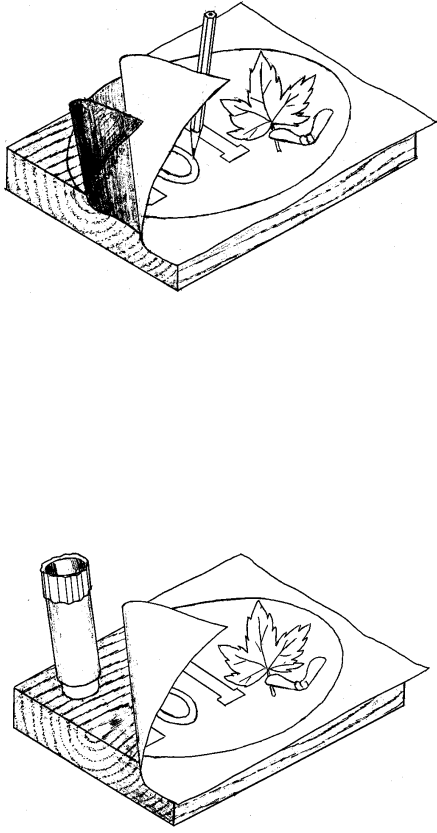
Q.	SKETCHES	NOTES	MARKS
1(i)		<p>The marking out and working of the mortise is best done before the plane body is shaped.</p> <p>Once marked the slot may be chopped out using a mortise chisel and mallet.</p> <p>Work to a depth of half way and then work through from the other side.</p> <p>The waste wood could be removed by drilling a series of holes along the length of the slot and tidying the remaining waste away using a chisel. Again work is carried out to a depth of about half way and repeated from the other side.</p>	<p>Notes and sketches 16 marks.</p> <p>Notes only or sketches only 12 marks.</p>
1(ii)		<p>The waste on the semi-circular ends is first removed using a coping saw, scroll saw etc. Cut to the waste side of the lines.</p> <p>The roughness left by the saw can now be smoothed by using a spokeshave, rasp etc. Work from the sides of the wing towards the end of</p>	<p>Notes and sketches 12 marks.</p> <p>Notes only or sketches only 9 marks.</p>

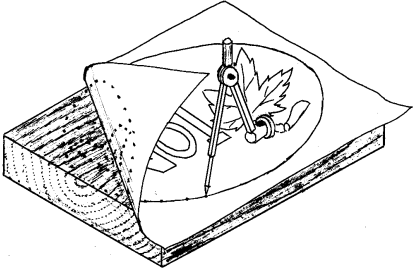
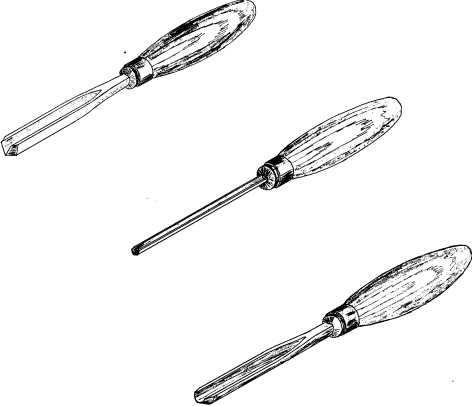
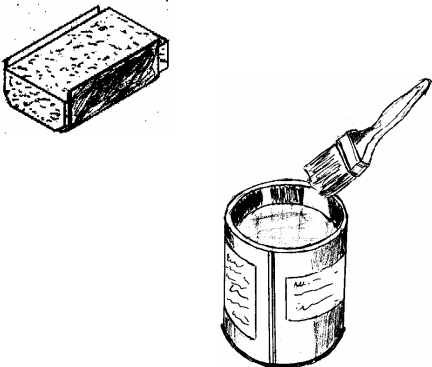
Q.	SKETCHES	NOTES	MARKS
1(ii)		<p>the wing.</p> <p>The wing ends can then be sanded using sandpaper and a sanding block. Start with medium paper and then move to smooth paper.</p> <p>Any three tools used in this process.</p> <p>Coping saw, scroll saw, band saw, tenon saw, etc. Spokeshave, rasp, surform, chisel, etc.</p>	<p>2 marks each.</p>
1(iii)		<p>Finish Non-toxic paint Oil Varnish</p> <p>Reasons for choice Two reasons to support the choice of finish.</p>	<p>Finish 2 marks.</p> <p>Two reasons for choice of finish 2 marks each.</p>


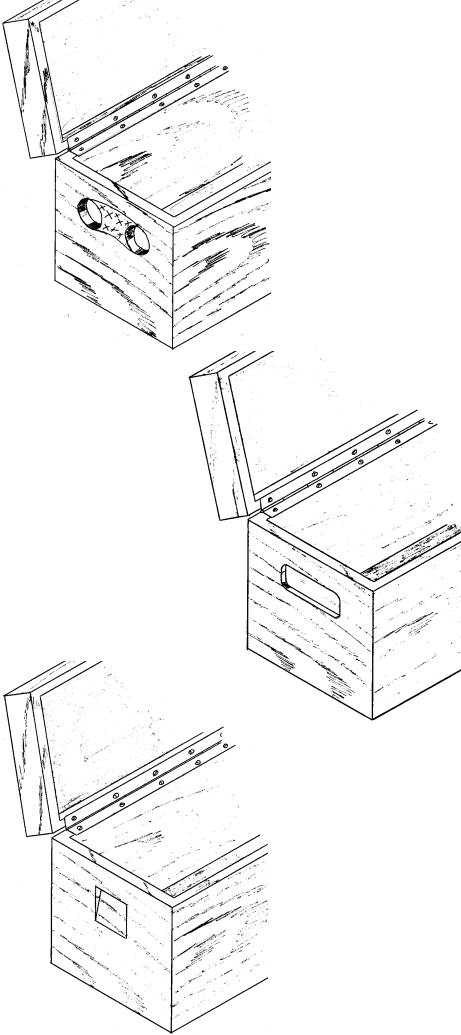
Q.	SKETCHES	NOTES	MARKS
2(i)	 <p style="text-align: center;">ELEVATION</p>	<p>(a) Overall height</p> <p>(b) Overall width</p> <p>(c) Shelf</p> <p>(d) Dowel</p> <p>(e) Back rail</p>	<p>4</p> <p>4</p> <p>4</p> <p>4</p> <p>4</p>
2(ii)	 <p style="text-align: center;">END VIEW</p>	<p>(a) Overall height</p> <p>(b) Overall width</p> <p>(c) Corner removed</p> <p>(d) Centre for hole</p>	<p>4</p> <p>4</p> <p>4</p> <p>2</p>
2(iii)	<p style="text-align: center;">DIMENSIONS</p> <p style="text-align: center;">ARROWHEADS</p>	<p>ONE mark for each correct dimension (1 mark×4)</p> <p>TWO marks for correct arrows</p>	<p>4</p> <p>2</p>

Q.	SKETCHES	NOTES	MARKS
3(i)		<p>Manufactured boards Plywood Hardboard M.D.F. Blockboard Laminboard Etc.</p> <p>Description of the manufacture of one of these.</p>	<p>Any two 2 marks each</p> <p>Notes and sketches 9 marks.</p> <p>Notes only or sketches only 6 marks.</p>
3(ii)		<p>A solid timber lip piece can be attached to the edge.</p> <p>A specially shaped metal strip can be fixed to the edge with screws.</p> <p>Iron on edging can be used.</p> <p>The edge can be veneered.</p>	<p>Notes and sketches 12 marks.</p> <p>Notes only or sketches only 9 marks.</p>
3(iii)		<p>Sheets come in large widths. Manufactured boards have a uniform thickness. Sheets are very stable they do not warp, shrink and twist like solid wood. Thin sheets have good strength. Consistent quality from sheet to sheet. No defects. Surfaces are usually smooth and flat. Can be worked into many shapes without having to worry about short grain. Etc.</p>	<p>Three advantages 5 marks each.</p>

Q.	SKETCHES	NOTES	MARKS
4A (i)		<p>Join the corners / diagonals to find the centre of the wood. Draw a circle on the ends with a compass. Mark out the corners that will be removed. When these are removed it will reduce the knocking and vibration when turning initially. Plane the corners off to form a roughly octagonal shape. The piece is now ready for mounting on the lathe.</p>	<p>3 steps 5 marks each.</p>
4A (ii)		<p>Roughing gouge Spindle gouge Parting tool Skew chisel Square end scrapper Curved scrapper Etc.</p> <p>Diagrams of two turning tools.</p> <p>Brief description of what each of the two sketched turning tools are used for.</p>	<p>Two names 2 marks each.</p> <p>Two diagrams 3 marks each.</p> <p>Two descriptions 2 marks each.</p>

Q.	SKETCHES	NOTES	MARKS
4A (iii)		<p>Turned spigot</p> <p>Mortise and tenon</p> <p>Hole and loose dowel</p> <p>Glue and screw</p>	<p>One method of jointing the stem and base 11 marks.</p> <p>6 marks.</p>
4B (i)		<p><u>Method 1</u> The paper with the drawing on it should be carefully taped onto the wood with two pieces of tape. A sheet of carbon paper may now be placed between the wood and the drawing. You now trace over the original drawing with a pen or pencil ensuring that no line is missed. Once the sheets are removed a print of the picture will have been left.</p> <p><u>Method 2</u> The piece of paper with the drawing could be fixed down to the wood using a light adhesive. In order to carve the shapes you can now carve through the paper into the wood beneath.</p>	<p>Notes and sketches 16 marks.</p> <p>Notes only or sketches only 12 marks.</p>

<p>4B (i) Cont.</p>		<p>Method 3 The paper with the drawing is fixed to the wood using tape. By tracing over the drawing and leaning heavily on the pen/pencil an imprint will be made on the wood beneath. This imprint can be traced over once the sheet is removed. As an alternative a compass could be used to mark the wood through the paper. When the paper is removed the dots can be joined to form the picture.</p>	
<p>4B (ii)</p>		<p>Name V-tool Veiner Carving gouge</p> <p>Diagram</p>	<p>2 marks.</p> <p>10 marks.</p>
<p>4B (iii)</p>		<p>The project would be sanded using sandpaper and a sanding block. Use rough sandpaper first, if necessary, then move to medium sandpaper then smooth. Dust down the project. Apply the first coat of varnish. Use a brush and apply a light coat. When dry sand lightly using wire wool and dust down. Repeat for coats two and three.</p>	<p>12 marks.</p>

Q.	SKETCHES	NOTES	MARKS
5(i)		<p>The lid of a treasure chest would not be flat but would have a curved top. Strips of metal such as brass could be added to give the appearance of reinforcing on the treasure chest.</p> <p>A large hasp lock with a padlock would add to the look of good security. Reinforcing the box corners with angle plates. Add an old rusty handle on the lid. Etc.</p>	<p>Notes and sketches 12 marks. Notes only or sketches only 9 marks.</p>
5(ii)		<p>Hand grips could be formed by drilling a large diameter hole right through the side of the box at either end of a slot. The waste between the two holes would be cut away using a scroll saw, electric jigsaw, coping saw etc.</p> <p>This slot should be smoothed carefully using a rasp and sandpaper.</p> <p>An alternative would be to form a handle by shaping a trench part way through the side. A router could be used to remove the waste.</p> <p>A groove could be made using a tenon saw and chisel</p>	<p>Notes and sketches 18 marks. Notes only or sketches only 14 marks.</p>

Q.	SKETCHES	NOTES	MARKS
5(iii)		<p>Carving Some relief carving on the top and sides. Chip carving to form symmetrical patterns on the lid and sides.</p> <p>Ironmongery By adding a decorative lock, handles, corner brackets.</p> <p>Veneering The whole box could be veneered. Cross banding or inlays could be added. Motifs could be inserted into the top, front and sides.</p> <p>Painting The box could be painted with patterns and designs.</p>	Any two ways 5 marks each.

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