



Coimisiún na Scrúduithe Stáit
State Examinations Commission

JUNIOR CERTIFICATE 2010

MARKING SCHEME

**MATERIALS TECHNOLOGY
WOOD**

ORDINARY LEVEL



JUNIOR CERTIFICATE 2010

MATERIALS TECHNOLOGY (WOOD)

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SECTION A

The sample solutions shown are presented as example answers. All other valid solutions are acceptable and are marked accordingly.

NOTE

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

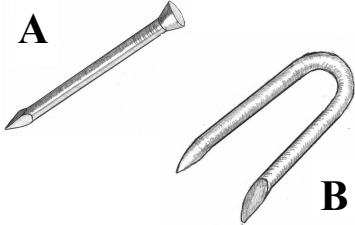
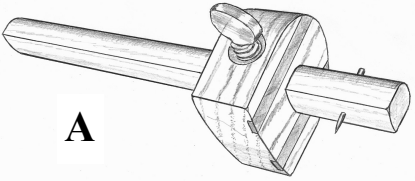

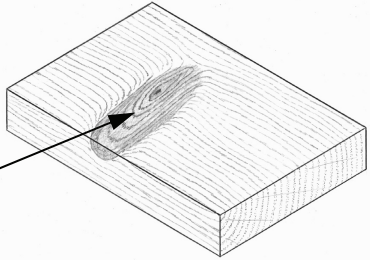
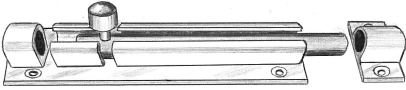
SECTION A - Short Answers

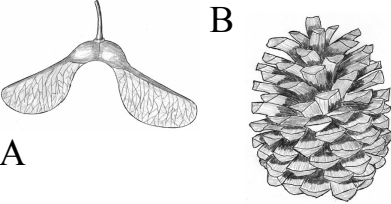
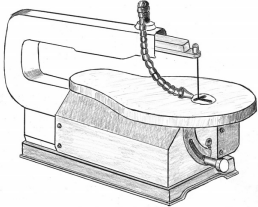
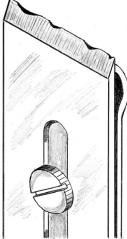
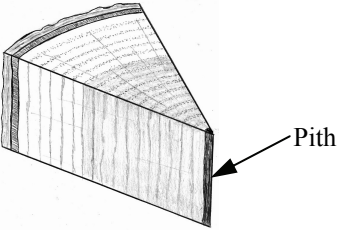
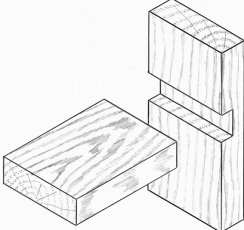
Mark all questions, select the best 16 questions

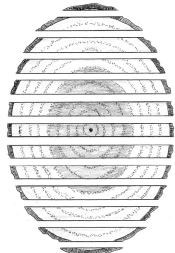
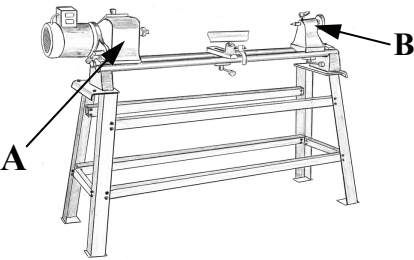
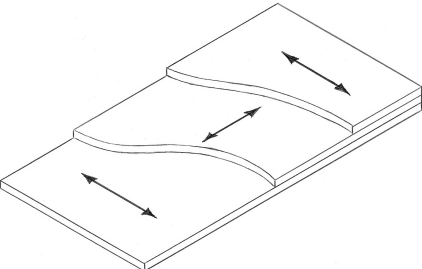
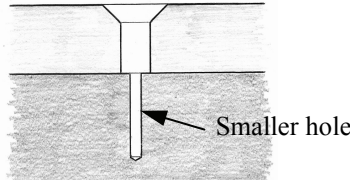
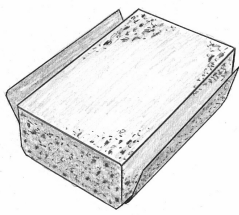
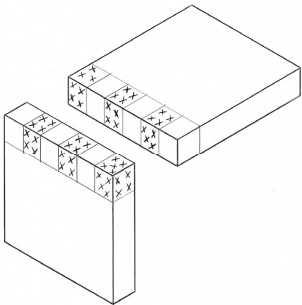
This section is marked out of 80 marks.

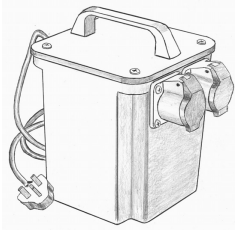
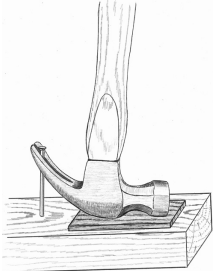
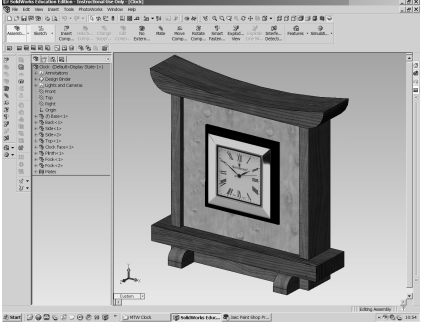
Divide the final mark by 2 on completion of marking.

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

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
1.	A. Panel Pin B. Staple	Either one, 3 marks. Both 5 marks.	
2a.	<i>Name:</i> Marking Gauge	Either one, 3 marks. Both 5 marks.	
<u>OR</u>	Use: Used to scratch a line parallel to the side of a piece of wood.	<u>OR</u>	
2b.	<i>Name:</i> Claw Hammer <i>Use:</i> Driving nails. Pulling nails.	Either one, 3 marks. Both 5 marks.	
3.	Spike Knot	5 marks.	
4.	<i>Name:</i> Cupboard bolt. Tower bolt.	Either one, 3 marks.	
	<i>Use:</i> Used to keep doors closed. Used to lock doors.	Both 5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
5.	A: Sycamore B: Pine	Either one, 3 marks. Both 5 marks.	
6.	Scroll saw	5 Marks	
7.	Hold the blade. Point blade downwards. Walk. Do not carry in pocket. Stay away from other students etc.	Any one, 3 marks. Two rules, 5 marks.	
8.	Hitting a nail/screw when planing. Placing the plane, blade down, on the bench.	5 marks	
9.		5 marks	
10.	Coping saw ——— Curves Dovetail saw ——— Straight Compass saw ——— Curves Scroll saw ——— Curves Tenon saw ——— Straight	1 mark per correct answer.	
11.	Housing joint	5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
12.	Quick. Do not have to turn the log. Irish trees are generally small. Wide boards etc.	5 marks.	
13.	A— Headstock B— Tailstock	Either one, 3 marks. Both 5 marks.	
14.	Arrows showing the grain direction in each layer at right angles to the next layer.	5 marks.	
15.	Pilot hole	5 marks.	
16.	Soft. Light. Warm to hold.	5 marks.	
17.		5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
18.	Lower voltage 110Volt. If you damage the cable you will get a smaller electric shock.	5 marks.	
19.	The head of the hammer will damage your work if you do not use a piece of waste under it. You can get better leverage.	5 marks.	
20.	Advantage: Easier to draw. Multi views. Easier to modify. Etc.	5 marks.	

SECTION A

Note

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



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SECTION B

NOTE

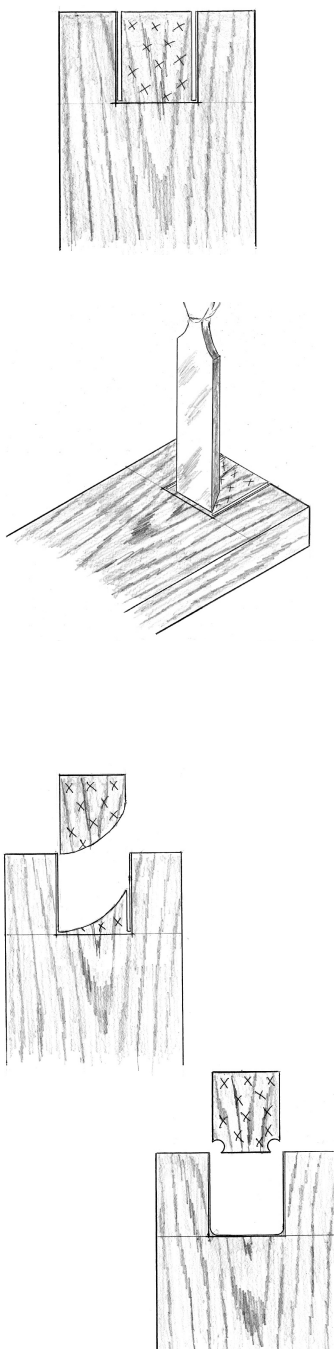
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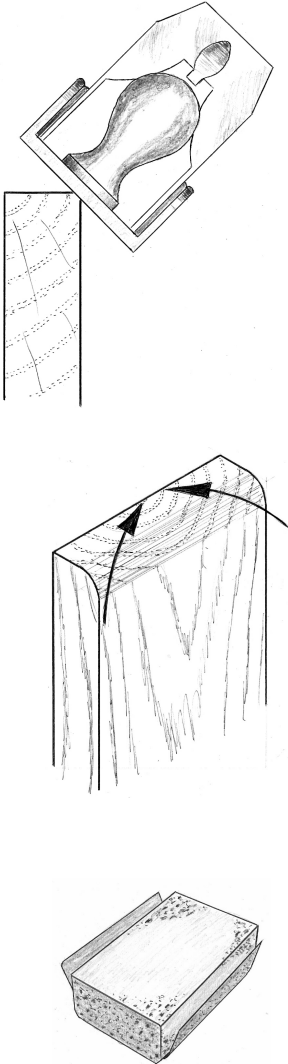
SECTION B

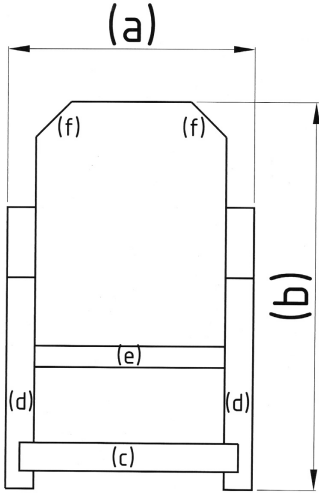
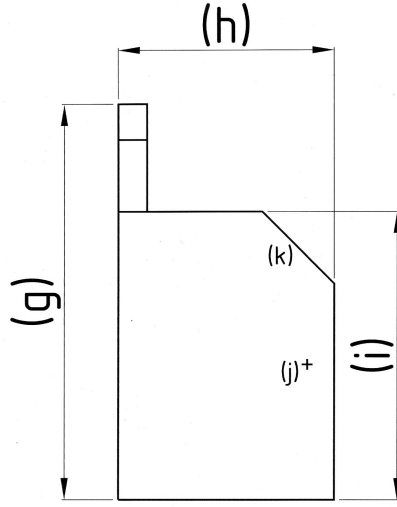
Mark for best three questions.



This section is marked out of 120 marks.

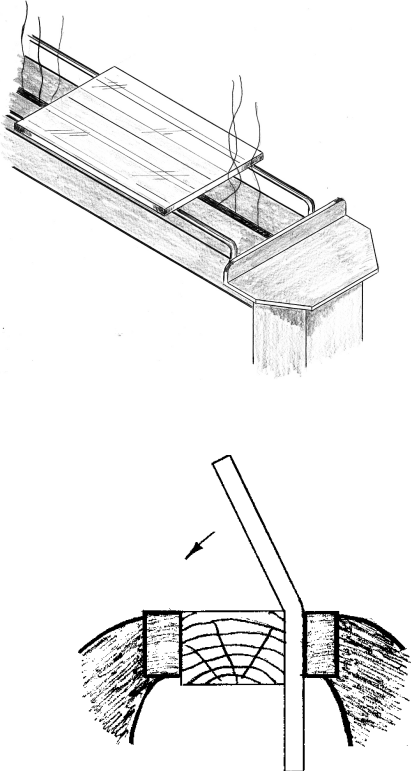
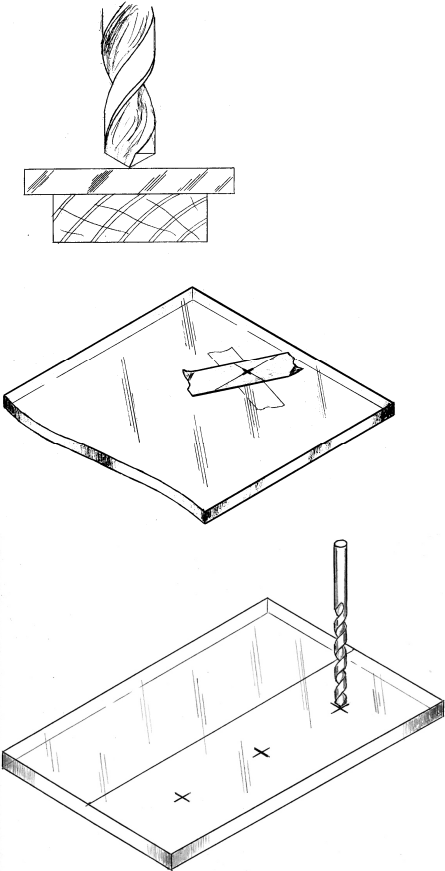
Divide the final mark by 2 on completion of marking

Q.	SKETCHES	NOTES	MARKS
1(i)		<p>Saw down along the grain using a tenon saw. Keep on the waste side of the line. The waste can now be removed by;</p> <p>(a) Mallet and chisel. Place the piece on the bench and secure by sitting on it or using a clamp. Using a medium or wide chisel place the blade about 2mm on the waste side of the line. Strike with the mallet. Chop half way through by moving and striking the chisel. Turn the piece and repeat from the other side. Once the large piece of waste comes away pare back exactly to the line using the mallet and chisel.</p> <p>(b) Coping saw/scroll saw The blade can be guided down the tenon saw cut and a cut can be curved down to the opposite corner. The saw can now cut across on the waste side of the line. Drilling holes at the corners would also help.</p>	<p>Notes and sketches 18 marks.</p> <p>Notes only or sketches only 12 marks.</p>

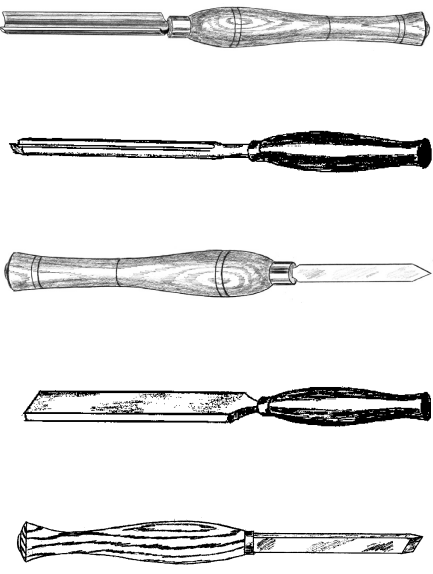
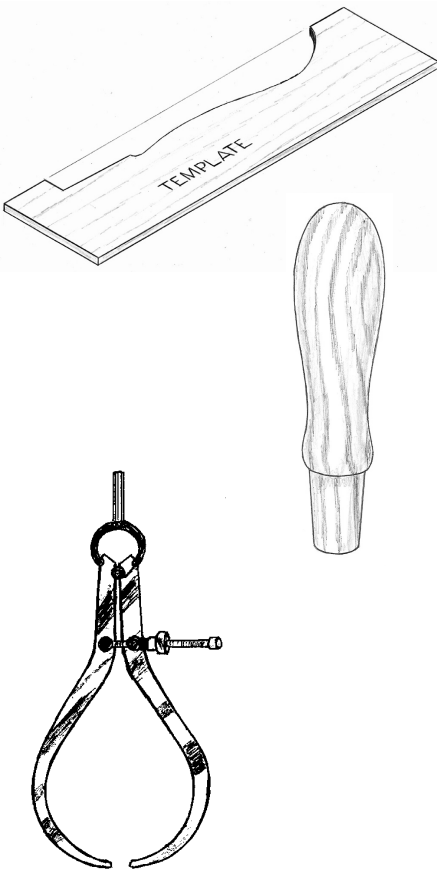
Q.	SKETCHES	NOTES	MARKS
1(ii)		<p>It would be better to round the corners before the truck is assembled.</p> <p>When rounding along the grain a plane would give a good finish. A rasp or surform could also be used but would give a poor finish.</p> <p>The edges across end-grain could be planed but care must be taken. It is very easy to chip the edges. Plane towards the end-grain of the piece. Again a rasp or surform could be used, working towards the end grain.</p> <p>Sanding should be done with the paper wrapped around a sanding block. Start with medium grade paper and work towards fine. Sand along the grain.</p> <p>When the project is assembled sand again to blend the pieces in to each other.</p>	<p>Notes and sketches 14 marks.</p> <p>Notes only or sketches only 10 marks.</p>
1(iii)		<p>Suitable applied finish ie non-toxic.</p> <p>Reasons for choice.</p>	<p>4 marks for name.</p> <p>2 marks Each.</p>

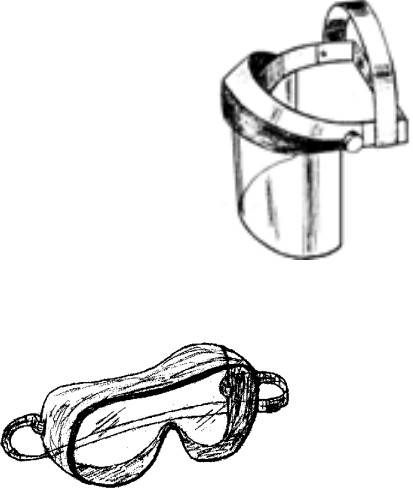
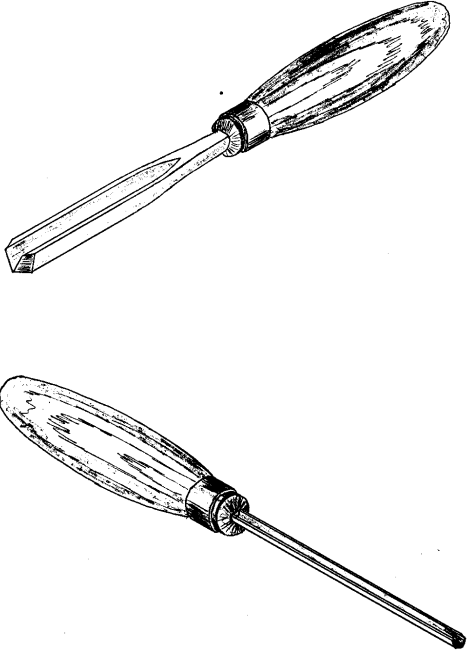
Q.	SKETCHES	NOTES	MARKS
2(i)	 <p style="text-align: center;">ELEVATION</p>	<p>(a) Overall width</p> <p>(b) Overall height</p> <p>(c) Shelf</p> <p>(d) Side thickness</p> <p>(e) Dowel</p> <p>(f) Corners removed</p>	<p>4</p> <p>4</p> <p>4</p> <p>4</p> <p>2</p> <p>2</p>
2(ii)	 <p style="text-align: center;">END VIEW</p>	<p>(g) Overall height</p> <p>(h) Overall width</p> <p>(i) Height of side</p> <p>(j) Dowel centre</p> <p>(k) Corner removed</p>	<p>4</p> <p>4</p> <p>2</p> <p>2</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>

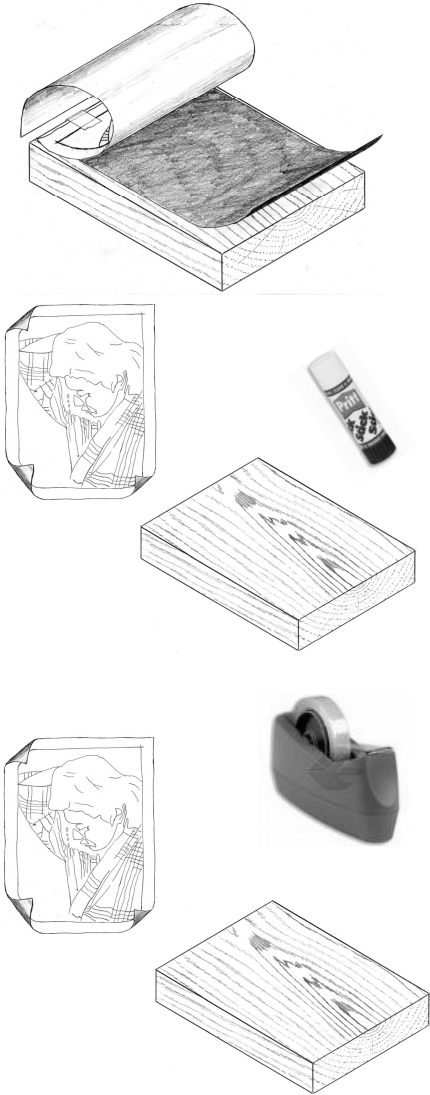
Q.	SKETCHES	NOTES	MARKS
3(i)		<p>Loose their leaves in the autumn.</p> <p>Seeds are surrounded by a fruit.</p> <p>The trunk is an uneven shape and branches.</p> <p>The leaves are broad.</p> <p>The wood is hardwood.</p> <p>The tree shape is often rounded and irregular.</p> <p>Do not tolerate extreme climatic cold.</p> <p>Deep root system.</p> <p>Branches are not flexible.</p> <p>etc.</p>	<p>Any four 4 marks each.</p>
3(ii)		<p>Keep their leaves through the winter.</p> <p>Seeds are in a cone.</p> <p>The trunk is an even shape and tapers gradually.</p> <p>The leaves are needle shaped.</p> <p>The wood is softwood.</p> <p>The tree shape is often conical and regular.</p> <p>Tolerate extreme climatic cold.</p> <p>Shallow root system.</p> <p>Branches are flexible.</p> <p>etc.</p>	<p>Any four 4 marks each.</p>
3(iii)	<p>Ash or Oak or Beech</p>	<p>Description of leaves and seeds.</p> <p>Indication of use(s) for the wood.</p>	<p>4 marks.</p> <p>4 marks.</p>

Q.	SKETCHES	NOTES	MARKS
4(i)		<ol style="list-style-type: none"> 1. Draw a line on the sheet of acrylic, showing clearly where the bend should be. 2. Place the sheet on a strip heater, ensuring that the bend line is being heated. 3. When it is hot enough, place a piece of waste wood with a 90° angle against the acrylic and hold them both in the vice. 4. Bend the sheet around the wood. 	<p>Notes and sketches 15 marks.</p> <p>Notes only or sketches only 12 marks.</p>
4(ii)		<p>Place a piece of waste wood underneath the sheet to support it while you are drilling.</p> <p>Place tape at the front and back of the perspex and drill through carefully.</p> <p>Drill a pilot hole.</p> <p>Drill slowly applying very little pressure on the drill.</p>	<p>Notes and sketches 15 marks.</p> <p>Notes only or sketches only 12 marks.</p>

Q.	SKETCHES	NOTES	MARKS
4(iii)		<p>Chamfering of edges. Filleting of corners. Relief or incised carving of a picture as a background. Decoration using chip carving. Veneering or inlay work. Changing the backboard shape from a rectangle to something more creative e.g. toothbrush outline or toothpaste outline or a more freeform shape.</p>	<p>Any two changes 5 marks each.</p>

Q.	SKETCHES	NOTES	MARKS
<p>5A (i)</p>		<p>Roughing gouge.</p> <p>Spindle gouge.</p> <p>Parting tool.</p> <p>Scraper.</p> <p>Skew Chisel.</p>	<p>Name 4 marks.</p> <p>Sketch 10 marks.</p>
<p>5A (ii)</p>		<p>Cut a template from cardboard or from plywood. The template matches the shape of the handle. By constantly offering up this template to your work you can ensure all handles are the same size and shape.</p> <p>Or</p> <p>By using callipers you can match the sizes of the handle you are making with the handle already made.</p> <p>Or</p> <p>Adequate description and sketches of using a copying lathe.</p>	<p>Notes and sketches 14 marks.</p> <p>Notes only or sketches only 10 marks.</p>

Q.	SKETCHES	NOTES	MARKS
<p>5A (iii)</p>		<p>Ensure the tool rest is set at the correct level. Check the wood for loose knots and cracks. Keep long hair tied back. Loose or long sleeves should be rolled up. Tuck a tie or scarf inside your shirt / blouse. Wear eye protection. etc.</p>	<p>Any three 4 marks each.</p>
<p>5B (i)</p>			<p>Sketch of V-tool 10 marks.</p> <p>Or</p> <p>Sketch of veiner 10 marks.</p>

<p>5B (ii)</p>		<p><u>Method 1</u> Tape the drawing to the wood . 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.</p> <p><u>Method 2</u> The piece of paper with the drawing could be fixed down to the wood using a light adhesive. You can now carve through the paper into the wood beneath.</p> <p><u>Method 3</u> 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.</p>	<p>Notes and sketches 18 marks.</p> <p>Notes only or sketches only 14 marks.</p>
<p>5B (iii)</p>		<p>No knots. Soft wood. Easily cut with a chisel or gouge. Stable. Not brittle. Even texture. Consistent colour. Summer and Autumn growth having similar colour.</p>	<p>Any three 4 marks each.</p>

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