

JUNIOR CERTIFICATE 2002
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.

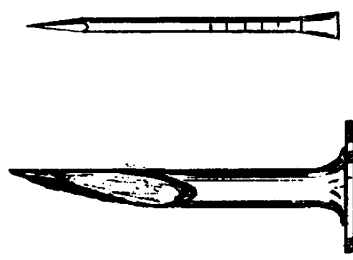
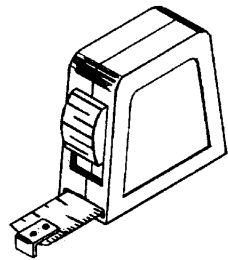
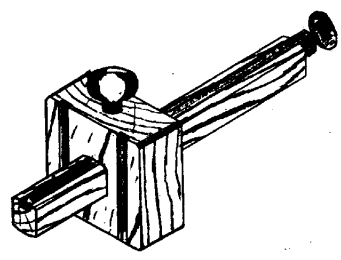
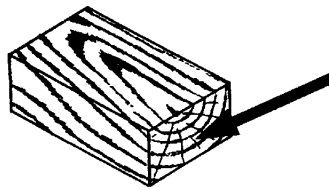
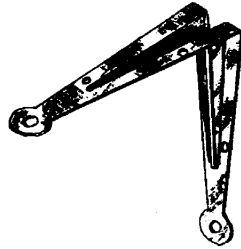
SECTION A - Short Answers


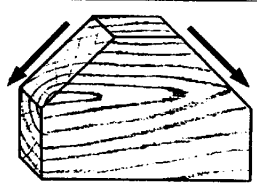

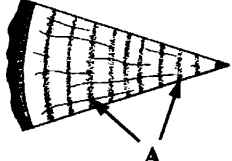
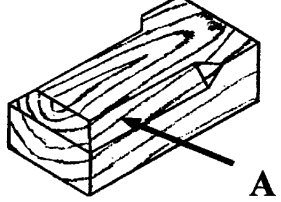
Mark all questions, select the best 16 questions.

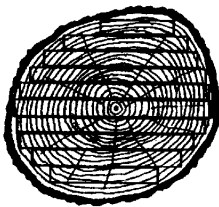
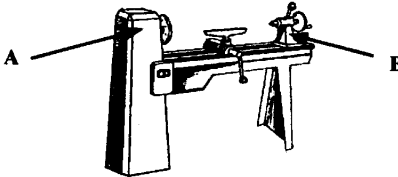
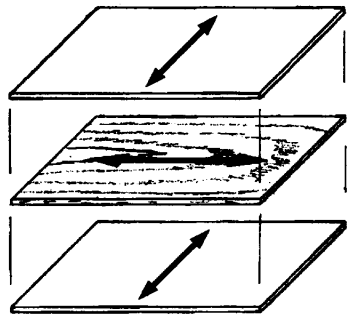
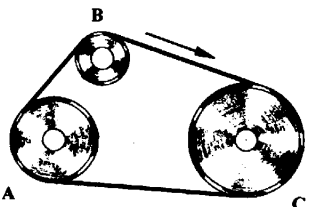
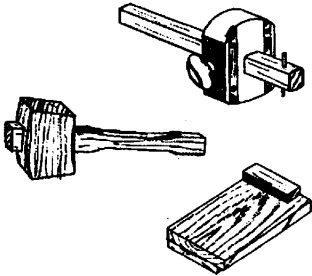
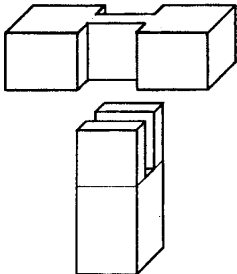
This section is marked out of 80 marks.

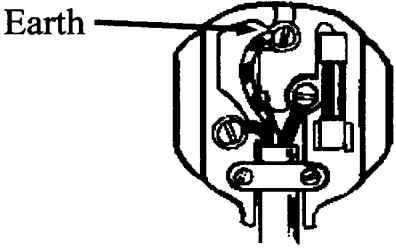
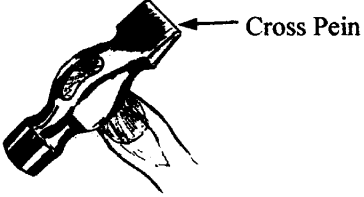

Divide the final mark by 2 on completion of marking.

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

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
1.	<p>A: Panel pin</p> <p>B: Cut tack</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
2a.	<p><i>Name:</i> Tape measure</p> <p><i>Use:</i> Used to measure distances. Same as a ruler. To measure long distances.</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
<u>OR</u>			
2b.	<p><i>Name:</i> Mortice Gauge</p> <p><i>Use:</i> To mark two lines parallel to the side of a piece of wood.</p>	<p><u>OR</u></p> <p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
3.		5 marks	
4.	<p><i>Name:</i> Shelf bracket</p> <p><i>Use:</i> Used in pairs to support shelves/presses etc</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
5.	A: Sycamore B: Oak	Either one, 3 marks. Both 5 marks.	
6.		5 Marks	
7.	Any two precautions. Work in a well ventilated area. Keep the area free from dust. Keep the workplace dry. Use a good quality brush. Do not put on too much varnish on each coat. Ensure each coat is dry before applying the next. etc	Any one, 3 marks. Two rules, 5 marks.	
8.	From planing wood containing nails or screws. From placing the plane, blade downwards, on a bench/table containing nails or screws	5 marks	
9.	Autumn / Summer	5 marks	
10.	Knot _____ Natural End splits _____ Other Warping _____ Other Heart Rot _____ Natural Spiral Grain _____ Natural	1 mark per correct answer.	
11.	Chamfer. Stopped chamfer.	5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
12.	<p>Less likely to split. Much faster. Less stresses and strains on the wood. Drying can be controlled easier.</p>	5 marks.	
13.	<p>A: Headstock B: Tailstock</p>	<p>Either one, 3 marks. Both 5 marks.</p>	
14.		5 marks.	
15.	Pulley B spins the fastest.	5 marks	
16.	<p>Very stable wood. Very few knots. Dense. Not brittle. Tight even grain.</p>	5 marks	
17.		5 marks	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
18.		5 marks.	
19.	Used to hammer small nails and tacks in awkward corners.	5 marks.	
20.	Input	5 marks.	

SECTION A

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

JUNIOR CERTIFICATE 2002

MATERIALS TECHNOLOGY
(WOOD)

MARKING SCHEME

ORDINARY LEVEL

SECTION B

NOTE

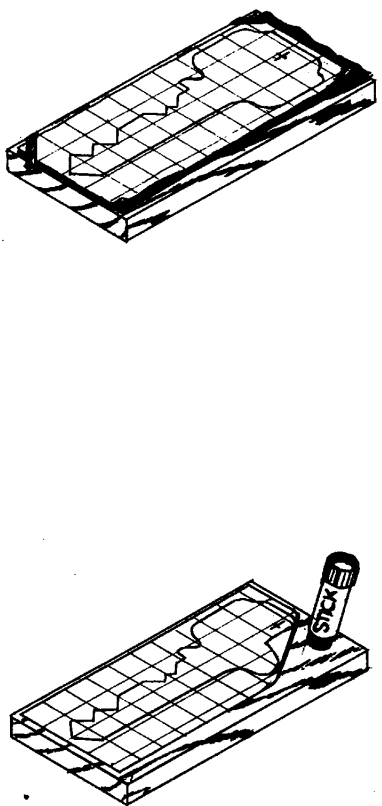
Please ensure that totals for each question are divided by TWO before entering marks on marking sheets.

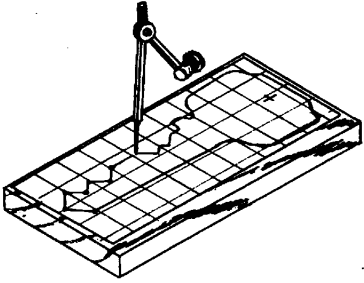
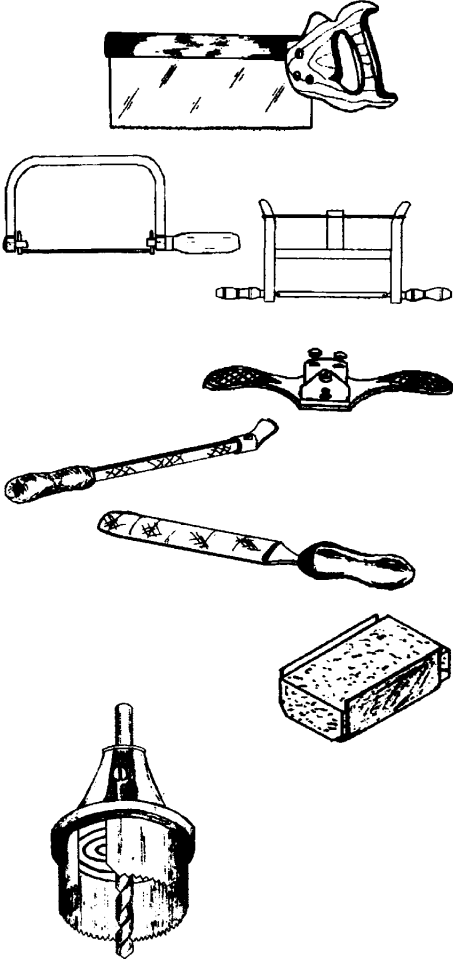
SECTION B

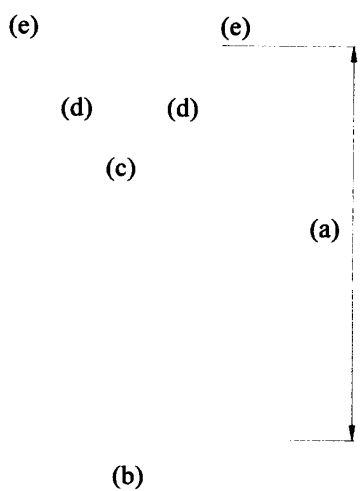
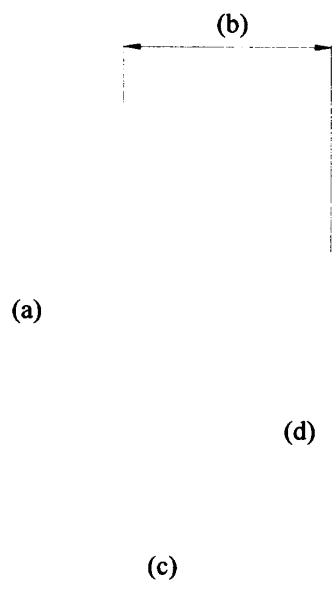
Mark for best three questions.

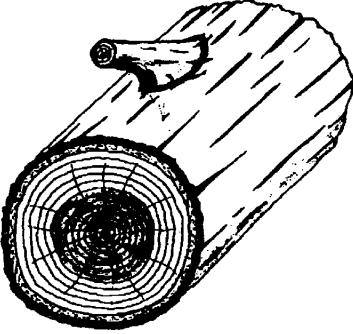
This section is marked out of 120 marks.

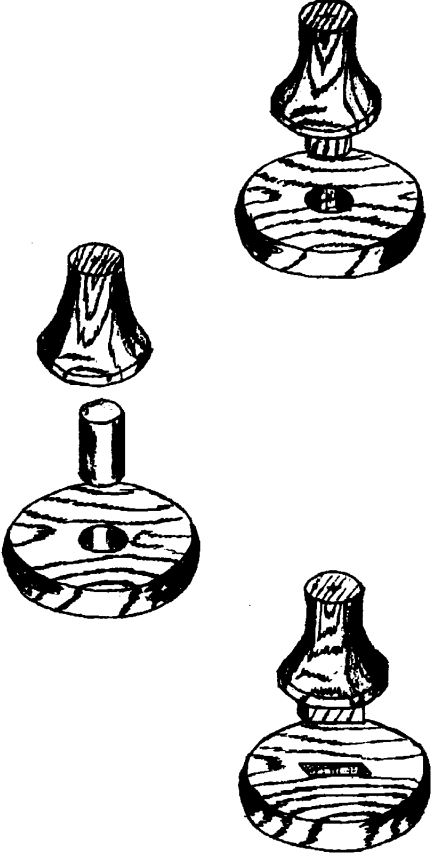
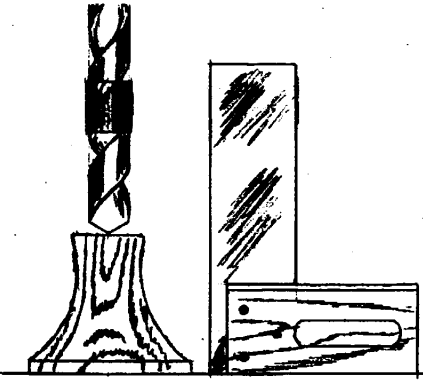
Divide the final mark by 2 on completion of marking

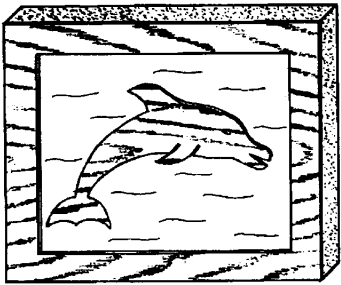
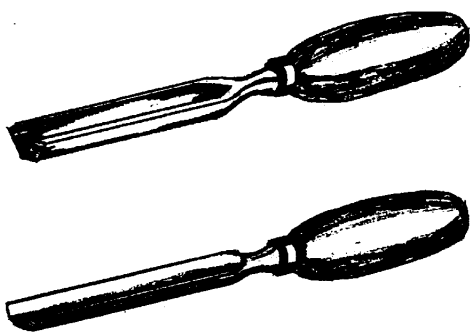
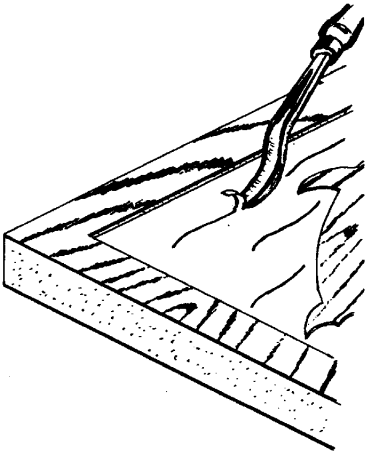
Q	SKETCHES	NOTES	MARKS
1(i)		<p><u>Method 1</u> The paper with the drawing on it should be carefully taped onto the wood with two pieces of tape. A sheet of carbon paper may now be placed between the wood and the drawing. You now trace over the original drawing with a pen or pencil ensuring that no line is missed. Once the sheets are removed a print of the key 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 cut the key shape you can now cut through the wood and the paper at the same time.</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. This imprint can be traced over once the sheet is removed. As an</p>	12 marks.

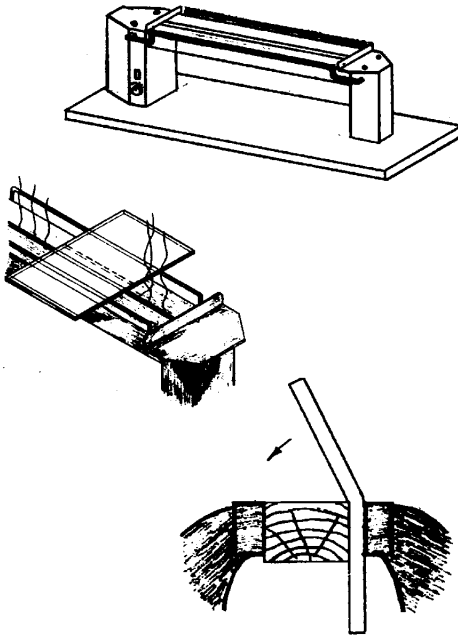
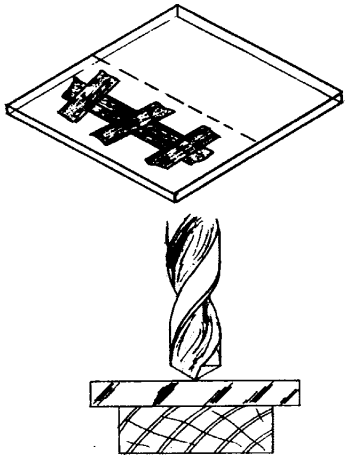
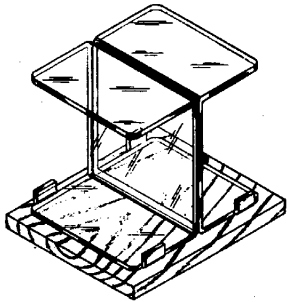
Q.	SKETCHES	NOTES	MARKS
1(i) Cont.		<p>alternative a compass could be used to mark the wood through the paper. When the paper is removed the dots can be joined to form the picture.</p>	
1(ii)		<p>Make all the straight cuts first using a tenon saw, dovetail saw band saw etc.</p> <p>Use a scroll saw, coping saw, bow saw etc. to cut all the curved pieces, cutting on the waste side of the line. Cut as carefully as possible.</p> <p>Use a spokeshave, rasp or surform to shape the edges.</p> <p>Sand with rough sandpaper, then medium, then smooth.</p> <p>The hole could be formed by drilling a large diameter hole with a bit and brace or with a hole saw.</p>	<p>Notes and sketches 14 marks.</p> <p>Notes or sketches only 10 marks.</p> <p>List of tools used 6 marks.</p>
1(iii)		<p>Suitable finish:- Paint, oil, wax etc.</p> <p>Reasons.</p>	<p>4 marks.</p> <p>4 marks.</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) Line for top of front board</p> <p>(d) Centres for quarter circles</p> <p>(e) Quarter circles</p>	<p style="text-align: center;">4</p> <p style="text-align: center;">4</p> <p style="text-align: center;">4</p> <p style="text-align: center;">2</p> <p style="text-align: center;">2</p>
2(ii)	 <p style="text-align: center;">END VIEW</p>	<p>(a) Overall height</p> <p>(b) Overall width</p> <p>(c) Width at base</p> <p>(d) Sloped lines</p> <p>(e) Material thickness</p>	<p style="text-align: center;">4</p> <p style="text-align: center;">4</p> <p style="text-align: center;">4</p> <p style="text-align: center;">3</p> <p style="text-align: center;">3</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 style="text-align: center;">4</p> <p style="text-align: center;">2</p>

Q.	SKETCHES	NOTES	MARKS
3(i)		<p>Protects the tree from the weather. Reduces evaporation in the summer and prevents damage from frost in the winter.</p> <p>Protects the tree from attack from animals such as birds, squirrels and deer. Also protect the tree from insect attack.</p> <p>Protects the tree from attack from fungi.</p>	<p>Two functions 10 marks. (5 marks each)</p>
3(ii)		<p>Heartwood will appear a darker brown than the sapwood.</p> <p>Heartwood contains less sap than sapwood.</p> <p>Heartwood contains more resin than sapwood.</p> <p>Heartwood is more resistant to insect and fungal attack.</p> <p>Heartwood is more resistant to exposure to the weather.</p> <p>Heartwood acts as a store for the trees waste products while sapwood transports sap from the roots to the leaves.</p> <p>Heartwood is older than sapwood</p>	<p>Any two 10 marks. (5 marks each)</p>
3(iii)		<p>Name</p> <p>Description</p>	<p>4 marks.</p> <p>4 marks.</p>
3(iv)		<p>Roots:- Anchor the tree. Collects minerals and water from the soil.</p> <p>Trunk:- Transports water and minerals from the roots to the leaves. Transports the food from the leaves down to the roots. Holds the crown up off the ground.</p> <p>Crown:- Holds the leaves flowers and fruit up to the light and air.</p>	<p>4 marks.</p> <p>4 marks.</p> <p>4 marks.</p>

Q.	SKETCHES	NOTES	MARKS
<p>4A (i)</p>		<p>1. A hole could be drilled through or part way through the base piece. When turning the other piece, a peg or spigot could be formed to match the diameter of this hole.</p> <p>2. An alternative would be to butt joint the two pieces. A hole can now be drilled through the base and part way into the second piece to receive a length of dowel.</p> <p>3. A tenon could be formed on the end of the candle holder and a mortice chopped in the base before they are turned.</p> <p>Screws and glue.</p>	<p>15 marks.</p> <p>8 marks.</p>
<p>4A (ii)</p>		<p>The hole could be drilled on a pillar drill which would ensure it was vertical. A piece of tape wrapped around the drill bit 30mm up from the bottom will ensure the hole is drilled to the correct depth.</p> <p>A bit and brace or an electric hand drill could be used with the tape on the bit as before. Ensure that the hole is vertical by getting a friend to check the angle of the bit, with a try square, before and during drilling.</p>	<p>15 marks.</p>

Q.	SKETCHES	NOTES	MARKS
4A (iii)		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. Ensure the tool rest is set at the correct level. Check the wood for loose knots and cracks. etc.	Any two 5 marks each.
Q4B (i)		It is soft. It has no grain. It has a fine texture. It can show good detail. Good contrast between the top veneer and the M.D.F. Etc.	Three reasons 15 marks (5 marks each.)
Q4B (ii)		V-Tool. Gouge. Knife, firmer chisel etc.	Sketch 15 marks 8 marks
Q4B (iii)		After levelling out the background draw a series of wavy lines with pencil to produce a water effect. A gouge or a V-tool run along these lines would complete the carving. A similar result could be got by punching a wavy pattern on the background with a punch.	Notes and sketches 10 marks Notes or sketches only 6 marks

Q.	SKETCHES	NOTES	MARKS
5(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 18 marks</p> <p>Notes only 10 marks</p> <p>Sketches only 10 marks</p>
5(ii)		<p>Place tape at the front and back of the Perspex and drill through carefully.</p> <p style="text-align: center;">Or</p> <p>Place a piece of waste wood underneath the sheet to support it while you are drilling.</p>	<p>Notes and sketches 12 marks</p> <p>Notes only 9 marks.</p> <p>Sketches only 9 marks.</p>
5(iii)		<p>Improvement to design to hold videos vertically.</p>	<p>Notes and sketches 10 marks</p> <p>Notes or sketches only 6 marks</p>

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