



JUNIOR CERTIFICATE 2008

**MATERIALS TECHNOLOGY
(WOOD)**

MARKING SCHEME

ORDINARY LEVEL

SECTION A

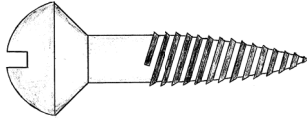
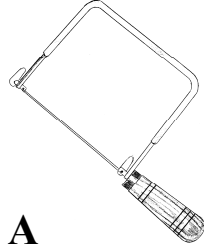
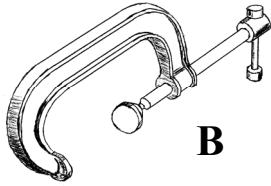
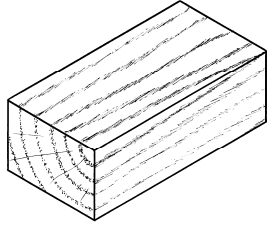
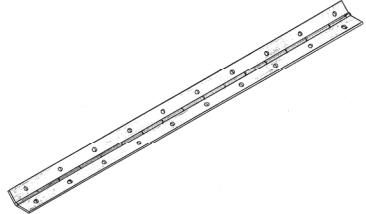
SECTION A - Short Answers

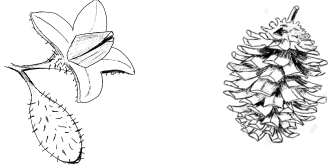
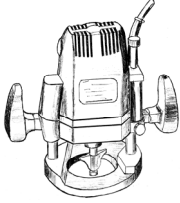
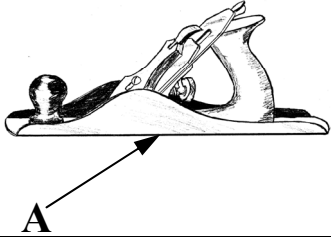
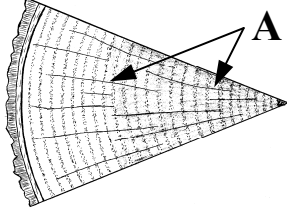
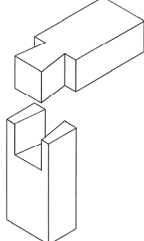
Mark all questions, select the best 16 questions

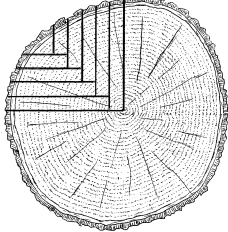
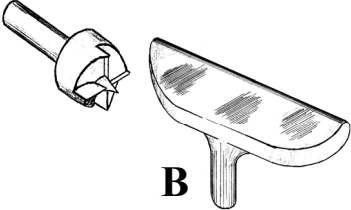

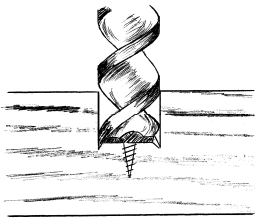
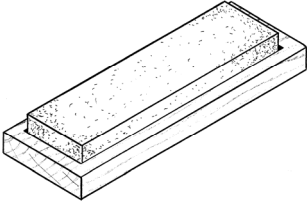
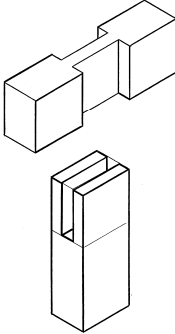
This section is marked out of 80 marks.

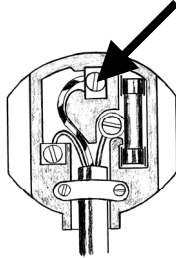
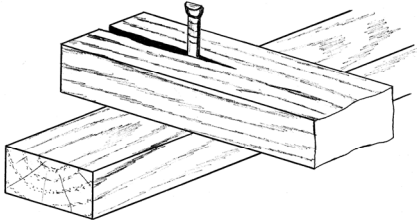
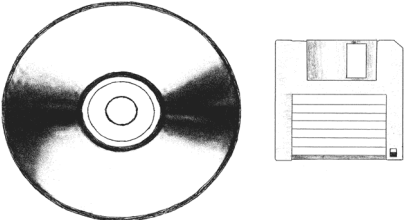
Divide the final mark by 2 on completion of marking.

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

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
1.	Raised Head Screw	5 marks.	
2a.	<p><i>Name:</i> Coping saw</p> <p><i>Use:</i> Used to cut along curved lines.</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	 <p style="text-align: center;">A</p>
<u>OR</u> 2b.	<p><i>Name:</i> G-clamp or C-clamp</p> <p><i>Use:</i> Holding objects firmly to the bench. Squeezing joints etc.</p>	<p style="text-align: center;"><u>OR</u></p> <p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	 <p style="text-align: center;">B</p>
3.		5 marks.	
4.	<p><i>Name:</i> Piano hinge</p> <p><i>Use:</i> Used to hinge light doors, box lids, piano lids etc</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
5.	A: Beech B: Pine	Either one, 3 marks. Both 5 marks.	
6.	Router	5 Marks	
7.	Do not run. Do not carry chisel in your pocket. Hold blade and point handle downwards. Take care not to trip over schoolbags etc	Any one, 3 marks. Two rules, 5 marks.	
8.	Sole	5 marks	
9.	Medullary rays	5 marks	
10.	Veiner ————— Carving Roughing gouge ——— Lathe Parting Tool ——— Lathe V-Tool ————— Carving Spindle gouge ——— Lathe	1 mark per correct answer.	
11.	Dovetail joint	5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
12.	Quarter sawing	5 marks.	
13.	A— Forked centre B— Toolrest	5 marks.	
14.	Collect energy from the sun. Photosynthesis. Makes food for the tree.	5 marks.	
15.	Drill through from one side until the drill bit just starts to emerge from the other side. Turn the piece and drill through from the back.	5 marks.	
16.	Oilstone Sharpening stone	5 marks	
17.	Three lines to be added	5 marks	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
18.		5 marks.	
19.	<p>Nail too large. Nail too close to the end of the wood. Hitting the nail too hard. Placing the nails in line along the grain. Etc.</p>	<p>Any one, 3 marks.</p> <p>Two reasons 5 marks.</p>	
20.	<p>A CD will store a lot more information than a floppy disk. A CD is not damaged by magnetism while a floppy disk is. Etc</p>	5 marks.	

SECTION A

Note

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



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SECTION B

NOTE

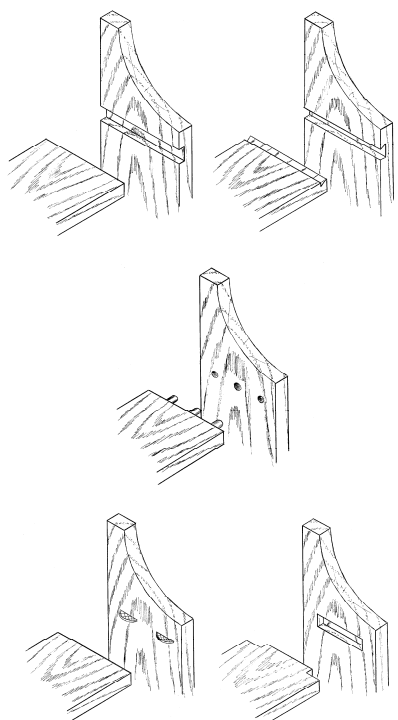
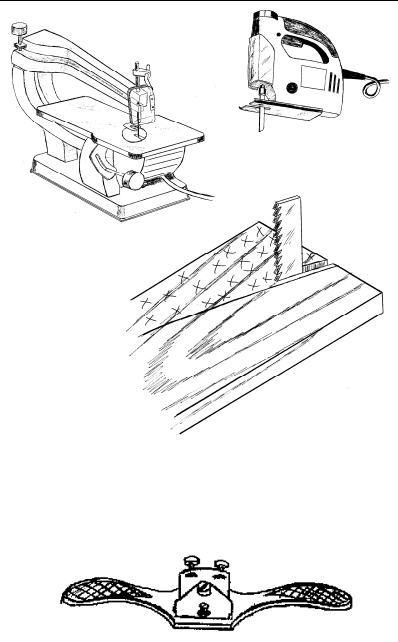
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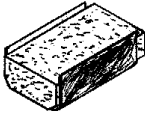
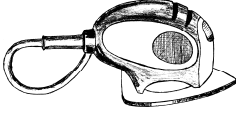
SECTION B

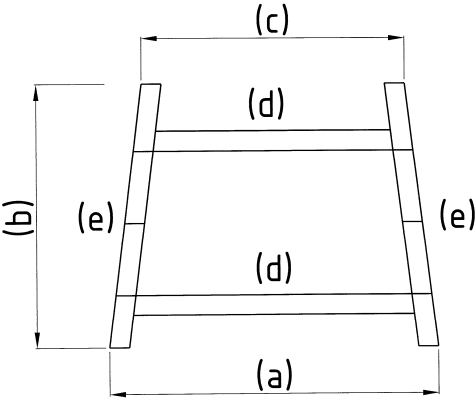
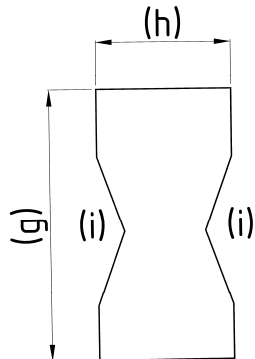
Mark for best three questions.



This section is marked out of 120 marks.

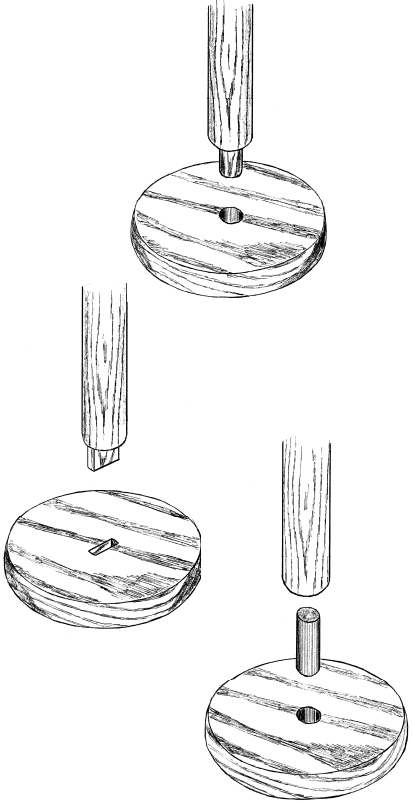
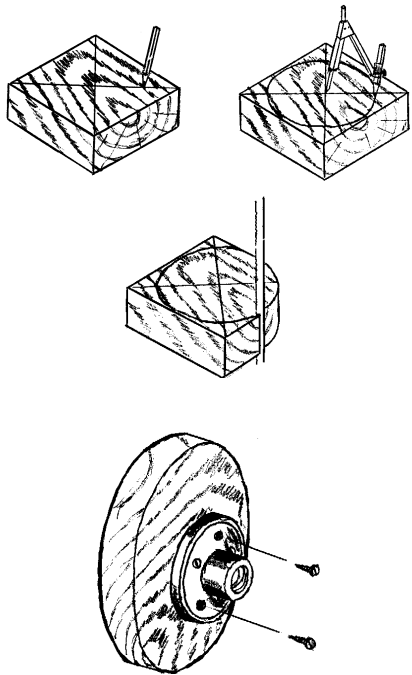
Divide the final mark by 2 on completion of marking

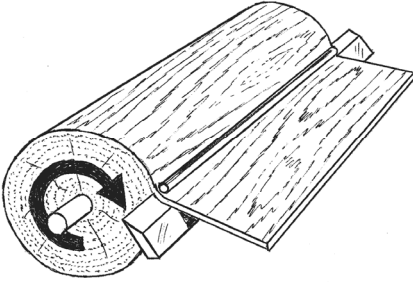
Q.	SKETCHES	NOTES	MARKS
1(i)		<p>Housing joint Dovetail housing Dowel joint Biscuit joint Stub tenon</p> <p>Nails and glue. Screws and glue.</p>	<p>Notes and sketches 16 marks. Notes only or sketches only 12 marks. Notes and sketches 12 marks. Notes only or sketches only 9 marks.</p>
1(ii)		<p>Cut on the waste side of the line using a saw suitable for curved work e.g. bandsaw, scroll saw, jigsaw, coping saw etc.</p> <p>The roughness left by the saw can now be smoothed out using a spokeshave, rasp, surform or a small plane. (Cont.)</p>	<p>Notes and sketches 12 marks. Notes only or sketches only 9 marks.</p>

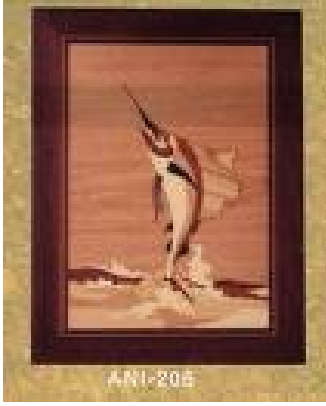
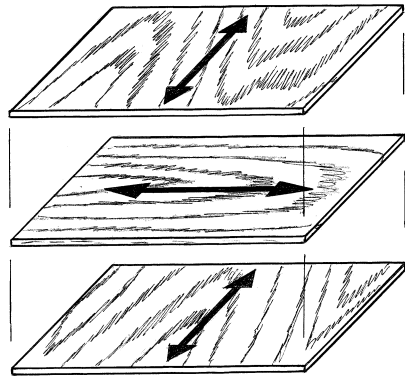
Q.	SKETCHES	NOTES	MARKS
1(ii)	 	<p>(Cont.) Work with the grain at all times.</p> <p>Note that one of the curves is across the end grain.</p> <p>Finish with medium sandpaper and then fine sandpaper. Use a sanding block.</p> <p>An electric sander could also be used.</p>	<p>Notes and sketches 14 marks.</p> <p>Notes only or sketches only 10 marks.</p>
1(iii)		<p><u>Applied finish</u></p> <p>Varnish Danish oil Paint</p> <p><u>Two Reasons</u></p> <p>The shelf is for the bathroom and therefore needs a water resistant finish. Looks nice Easy to apply etc</p>	<p>4 marks for each name.</p> <p>3 marks for each reason.</p>

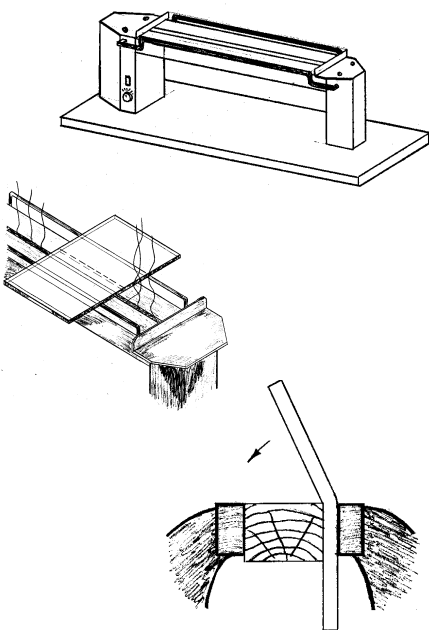
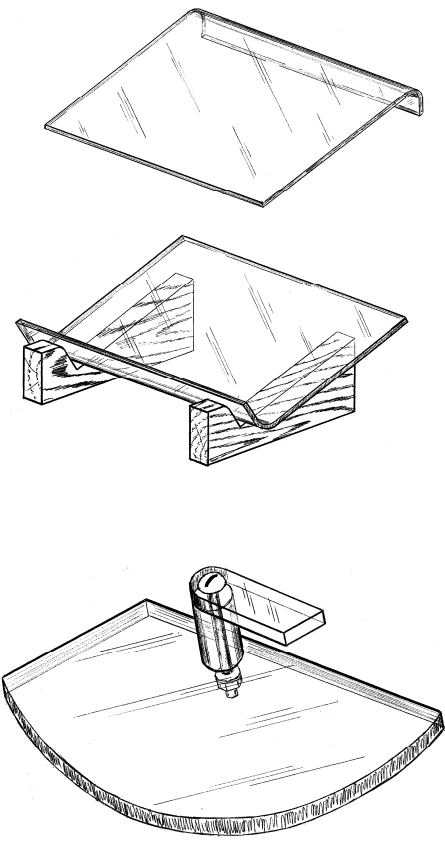
Q.	SKETCHES	NOTES	MARKS
2(i)	 <p style="text-align: center;">ELEVATION</p>	<p>(a) Overall width</p> <p>(b) Overall height</p> <p>(c) Width at top</p> <p>(d) Shelves</p> <p>(e) Lines for notch</p> <p>(f) Material thickness</p>	<p>4</p> <p>4</p> <p>4</p> <p>4</p> <p>2</p> <p>4</p>
2(ii)	 <p style="text-align: center;">END VIEW</p>	<p>(a) Overall height</p> <p>(b) Overall width</p> <p>(c) Notches</p>	<p>4</p> <p>4</p> <p>4</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>

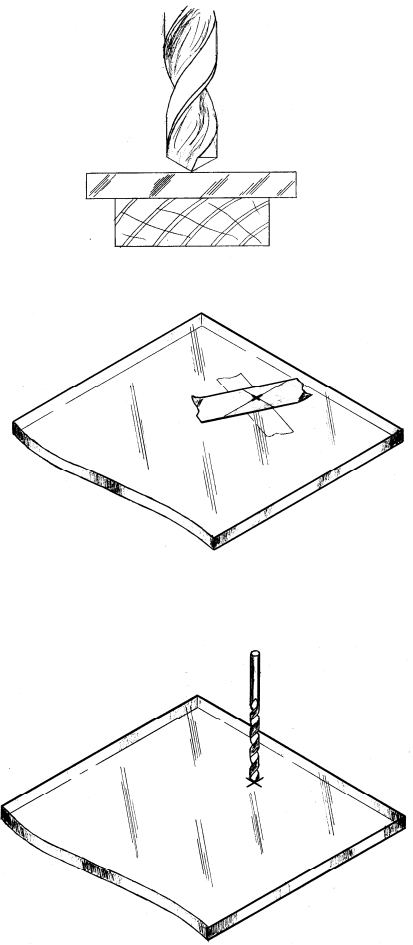
Q.	SKETCHES	NOTES	MARKS
3(i)		<p><u>Planting of young trees</u> The land is drained and fenced. Any scrub is removed. The trees are planted close together. The young trees are about three years old when planted.</p> <p><u>Thinning</u> After about fifteen years the trees are thinned out to give the trees that are left more space to grow.</p> <p><u>Harvesting</u> After between 30 and 50 years the trees are ready for harvesting. All the trees are cut as they are all the same size.</p>	8 marks per heading
3(ii)		<p><u>Thinnings</u> Pulpwood to make chipboard and M.D.F. Fencing posts Pallets</p>	Two uses 4 marks each.
3(iii)		<p>Coniferous trees grow much quicker than deciduous trees. Coniferous trees can grow well even in poor soils which is usually where these forests are planted.</p>	One reason 8 marks.

Q.	SKETCHES	NOTES	MARKS
<p>4A (i)</p>		<p>Turned spigot</p> <p>Mortise and tenon</p> <p>Hole and loose dowel</p> <p>Glue and screw</p>	<p>Notes and sketches 14 marks.</p> <p>Notes only or sketches only 10 marks.</p>
<p>4A (ii)</p>		<ol style="list-style-type: none"> 1. Find the centre of the square by joining the diagonals. 2. Draw as large a circle as possible on the surface using this centre point. 3. Cut away the waste using a bandsaw. 4. Attach the faceplate securely using screws. 5. The centre of the faceplate must be directly above the centre of the piece of wood. 6. Mount the faceplate back onto the headstock. 	<p>Notes and sketches 14 marks.</p> <p>Notes only or sketches only 10 marks.</p>

Q.	SKETCHES	NOTES	MARKS
4A (iii)		<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>
4B (i)		<p><u>Rotary cutting.</u> The log is softened in a steam bath. It is then mounted on a spindle. As the log is rotated towards the cutter a thin sheet of veneer is cut off. The veneer is trimmed to size and dried carefully. Veneer can also be cut by flat slicing or half round slicing.</p>	<p>14 marks.</p>

<p>4B (ii)</p>		<p>Marquetry is the technique of using veneer to form pictures or designs. It makes use of the texture, colour and grain pattern of wood.</p> <p>The patterns can be cut using a fret saw or cut using a knife.</p>	<p>Notes and sketches 10 marks.</p> <p>Notes only or sketches only 6 marks.</p>
<p>4B (iii)</p>		<p><u>Diagram showing grain pattern</u></p> <p><u>Advantage</u></p> <p>Plywood is manufactured from rotary cut veneers bonded together with the grain direction of alternative sheets at right angles to the layer beneath. Veneers, being very thin, will be weak along the grain. By alternating the direction of the grain the resulting plywood will be strong both in the length and the width.</p>	<p>Diagram 8 marks.</p> <p>Notes 8 marks.</p>

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 or sketches only 10 marks</p>
5(ii)		<p><u>Design change.</u></p> <p>Possibly another piece of acrylic like the one already on the project could be placed upside down on the open book thus keeping it clean as well as keeping it open.</p> <p>Some sort of rotating clips could be attached to the perspex that could be turned down into position when a book is in place.</p> <p style="text-align: center;">etc.</p>	<p>Notes and sketches 14 marks.</p> <p>Notes only or sketches only 10 marks.</p>

Q.	SKETCHES	NOTES	MARKS
5(iii)		<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>Two precautions 4 marks each.</p>

Please ensure that totals are divided by two before entering marks on marking sheets