

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate 2011

Marking Scheme

Materials Technology Wood

Ordinary Level



JUNIOR CERTIFICATE 2011

MATERIALS TECHNOLOGY WOOD

MARKING SCHEME

ORDINARY LEVEL

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.

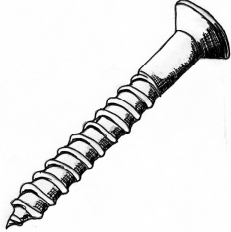
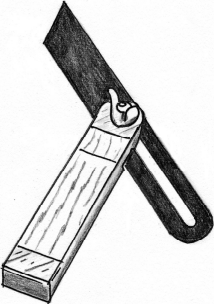
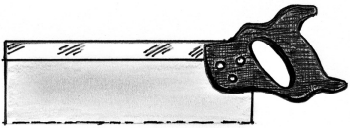
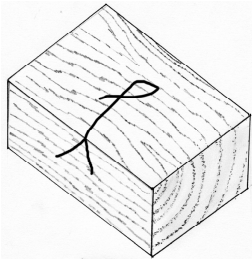
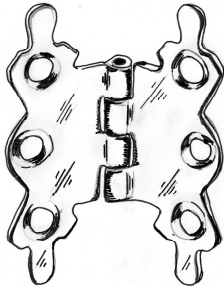
SECTION A - Short Answers

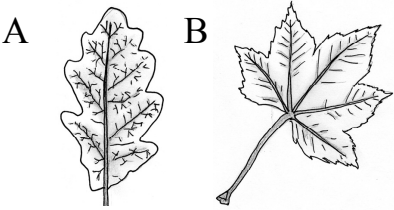
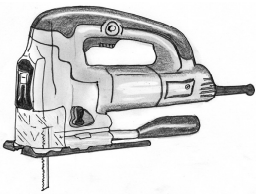

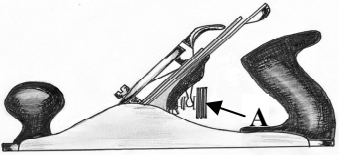
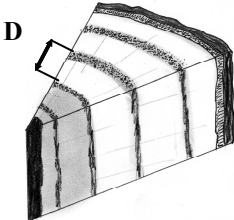
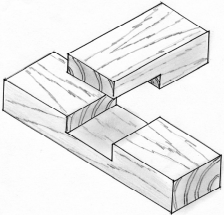
Mark all questions, select the best 16 questions

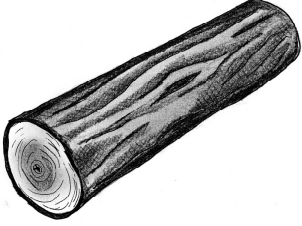
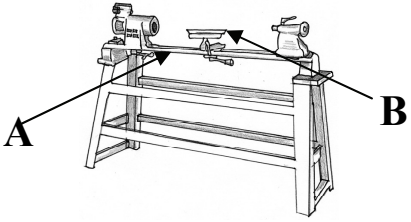

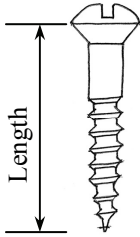
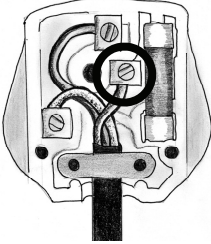
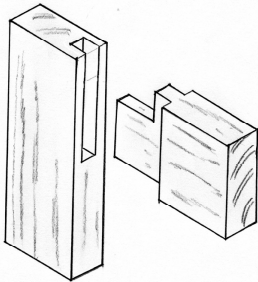
This section is marked out of 80 marks.

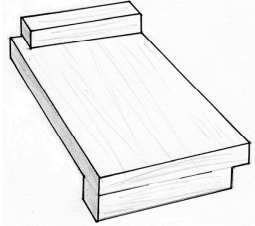
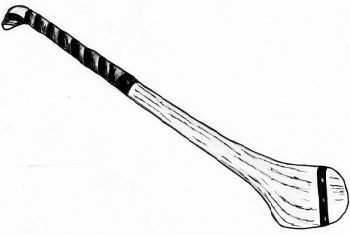

Divide the final mark by 2 on completion of marking.

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

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
1.	Countersunk-head Screw	5 marks.	
2a.	<p><i>Name:</i> Sliding bevel</p> <p><i>Use:</i> Used like a try square to mark out lines at a set angle across wood.</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	<p>A</p> 
<u>OR</u> 2b.	<p><i>Name:</i> Tenon Saw</p> <p><i>Use:</i> Bench sawing, cutting straight cuts, cutting tenons.</p>	<p><u>OR</u></p> <p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	<p>B</p> 
3.	<p>Mark face side</p> <p>Mark face edge</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
4.	<p><i>Name:</i> Decorative hinge</p> <p><i>Use:</i> Used on decorative boxes e.g. jewellery boxes.</p>	5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)																		
5.	A: Oak B: Sycamore	Either one, 3 marks. Both 5 marks.																			
6.	Jig Saw	5 Marks																			
7.	Use safety goggles Workpiece is held firmly Keep power cable away from the blade Keep hands/clothes/hair away from moving parts etc	Any one, 3 marks. Two rules, 5 marks.																			
8.	Adjusting the blade	5 marks																			
9.	1 years growth	5 marks																			
10.		1 mark per correct answer.	<table border="1" data-bbox="959 1592 1362 1760"> <thead> <tr> <th></th> <th>Quarter Sawing</th> <th>Through & Through</th> </tr> </thead> <tbody> <tr> <td>Costly</td> <td>✓</td> <td></td> </tr> <tr> <td>Wasteful</td> <td>✓</td> <td></td> </tr> <tr> <td>Cheap</td> <td></td> <td>✓</td> </tr> <tr> <td>Attractive grain</td> <td>✓</td> <td></td> </tr> <tr> <td>Fast</td> <td></td> <td>✓</td> </tr> </tbody> </table>		Quarter Sawing	Through & Through	Costly	✓		Wasteful	✓		Cheap		✓	Attractive grain	✓		Fast		✓
	Quarter Sawing	Through & Through																			
Costly	✓																				
Wasteful	✓																				
Cheap		✓																			
Attractive grain	✓																				
Fast		✓																			
11.	Tee Halving Joint	5 marks.																			

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
12.	Timber conversion is the process of cutting a log into various pieces of regular shape, i.e. boards or planks.	5 marks.	
13.	A— Bed B— Toolrest	Either one, 3 marks. Both 5 marks.	
14.	Lightweight Easy to shape Natural material Durable Environmentally Friendly Etc.	5 marks.	
15.		5 marks.	
16.		5 marks.	
17.	Lines for haunch Lines for mortise	Either set of lines 3 marks Both 5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
18.	To aid bench cutting. To protect the bench from sawing damage. Better control of piece.	Any one 5 marks.	
19.	Strong Durable Curved grain necessary for bas or flat of hurley Natural elasticity	Any one 5 marks.	
20.	Easier to draw Easier to modify Multi Views (3D) Visualisation Other valid answer	5 marks.	

SECTION A

Note

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



JUNIOR CERTIFICATE 2011

**MATERIALS TECHNOLOGY
WOOD**

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SECTION B

NOTE

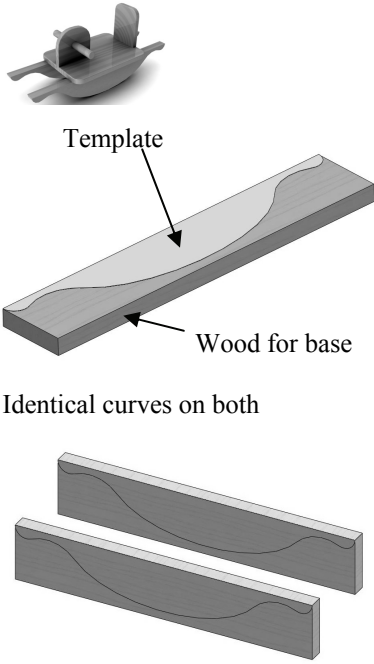
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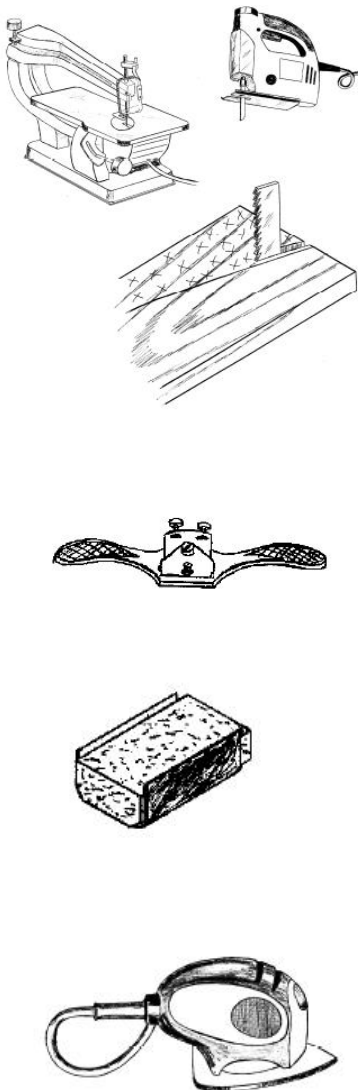
SECTION B

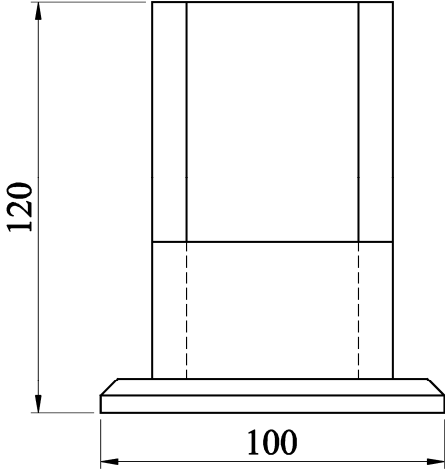
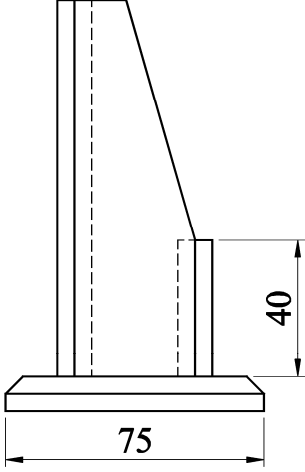
Mark for best three questions.

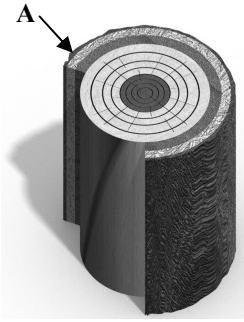
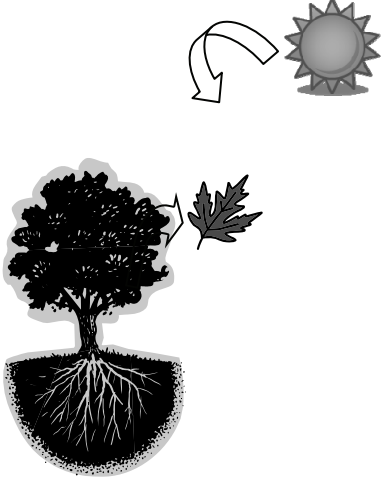
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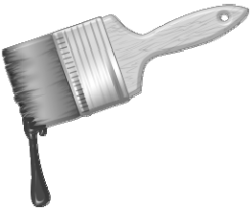

Divide the final mark by 2 on completion of marking

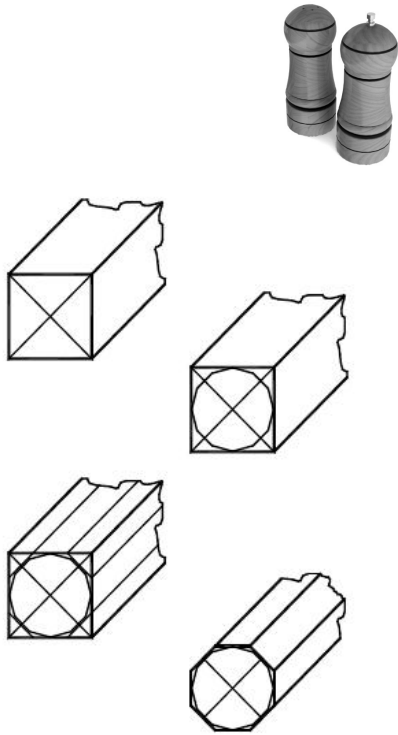
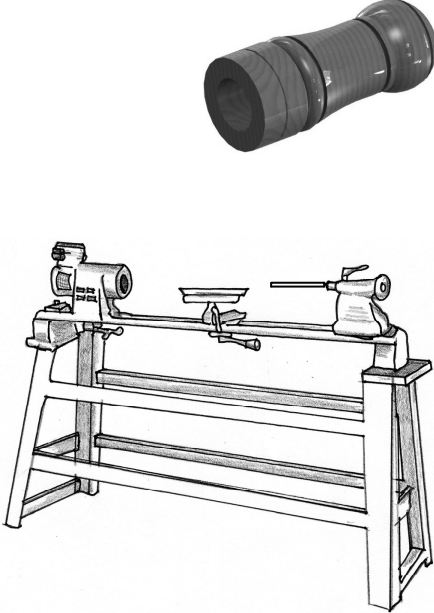
Q.	SKETCHES	NOTES	MARKS
1(i)	 <p>Identical curves on both</p>	<p>Draw required curve on cardboard and cut to produce a template. Tape template onto each of the base pieces in turn.</p> <p>This can then be traced around to mark the same curve onto both pieces of wood to be used for the base of the project.</p> <p>OR</p> <p>Having cut one of the pieces, place it on top of the other piece and trace around the outline.</p>	<p>Notes and sketches 18 marks.</p> <p>Notes only or sketches only 12 marks.</p>


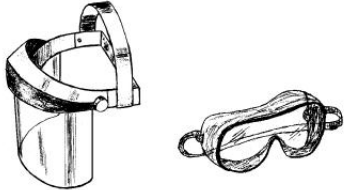
Q.	SKETCHES	NOTES	MARKS
1(ii)		<p>Cut on the waste side of the line with a saw that is suitable for curved work e.g. bandsaw, jigsaw, scroll saw, coping saw etc.</p> <p>The roughness left by the saw can be smoothed using a spokeshave, rasp, surform or a small plane.</p> <p>Work with the grain at all times.</p> <p>Finish with a medium sandpaper and then a fine sand paper. Use a sanding block.</p> <p>An electric sander could also be used.</p>	<p>Notes and sketches 16 marks.</p> <p>Notes only or sketches only 12 marks.</p>
1(iii)		<p>Name of any relevant tool.</p> <p>Sketch of tool.</p>	<p>2 marks for name.</p> <p>4 marks for sketch</p>

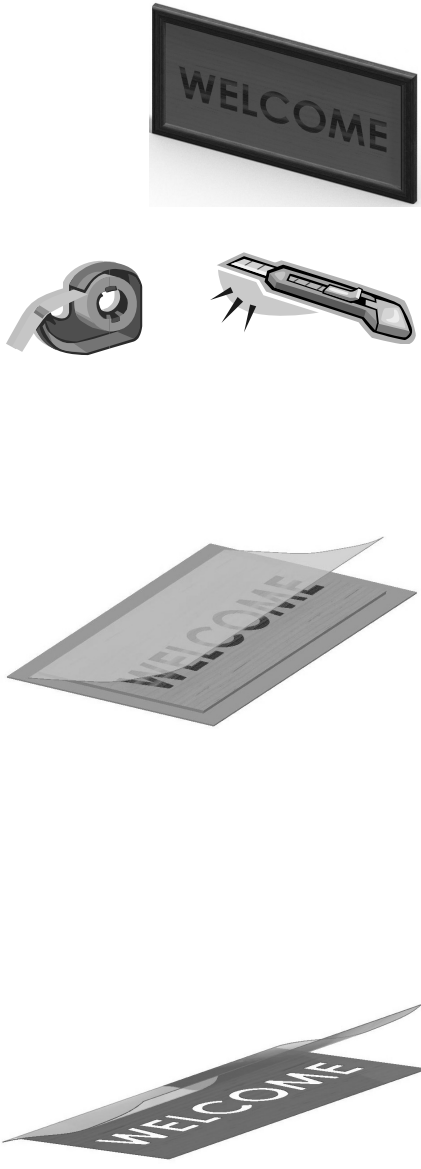
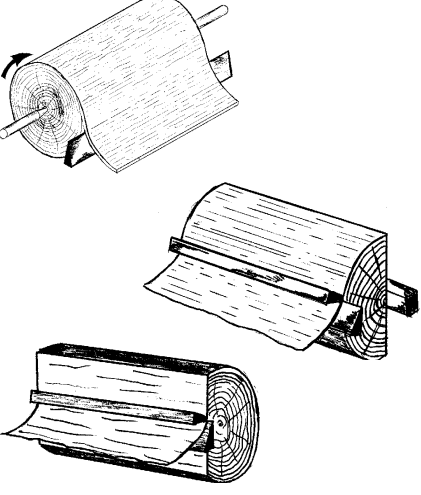
Q.	SKETCHES	NOTES	MARKS
2(i)	 <p style="text-align: center;">ELEVATION</p>	(a) Overall Length 4 (b) Overall height 4 (c) Base 4 (d) Sides 4 (e) Front piece 1 (f) Chamfers 3	
2(ii)	 <p style="text-align: center;">END VIEW</p>	(g) Overall height 2 (h) Overall width 4 (i) Base (incl. chamfers) 3 (j) Back & Front Pieces 4 (k) Side Piece 2	
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>ONE mark for correct arrows</p>	<p style="text-align: center;">4</p> <p style="text-align: center;">1</p>

Q.	SKETCHES	NOTES	MARKS
3(i)		<p>Name: Bark</p> <p>Protects the tree from Weather, Insect/animal attack, Fungal attack, etc.</p>	<p>Name 2 marks</p> <p>Any two 4 marks each.</p>
3(ii)		<p>Sketch and 3 parts labelled</p>	<p>Sketch 8 marks</p> <p>3 Parts 2 marks each</p>
3(iii)		<p>Leaves produce food in a process known as photosynthesis. The trees' leaves use energy from the sun to do this.</p> <p>Carbon dioxide is taken in and oxygen is given out.</p> <p>The roots take up water and minerals from the ground.</p>	<p>Notes and sketches 16 marks.</p> <p>Notes only or sketches only 10 marks.</p>

<p>4(i)</p>		<p>Any two reasons, Cheap Easy to work Light Attractive grain etc</p>	<p>2 reasons 5 marks each.</p>
<p>4 (ii)</p>		<p>Any two changes which will improve the overall appearance</p> <p>Change the shape of the base or seat, Include upholstery on seat, Include foot rests on base, Paint/graphics to improve appearance etc</p>	<p>Notes and sketches 18 marks.</p> <p>Notes only or sketches only 14 marks.</p>
<p>4 (iii)</p>		<p>Suitable applied finish ie non-toxic. Varnish, Danish oil, paint etc.</p> <p>Reasons for choice. Looks nice, easy to apply, non-toxic, etc.</p>	<p>4 marks for name</p> <p>4 marks each for reasons</p>

Q.	SKETCHES	NOTES	MARKS
5A(i)		<p>Join the corners/ diagonals to find the centre of the wood.</p> <p>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.</p> <p>Plane the corners off to form a rough octagonal shape. The piece is now ready for mounting on the lathe.</p>	<p>Notes and sketches 16 marks.</p> <p>Notes only or sketches only 12 marks.</p>
5A(ii)	<p>Holes through the centres</p> 	<p>Method 1</p> <p>The hole could be drilled using the lathe and a special long shafted gouge. A hollow centre is used in the tailstock which allows the gouge to pass up through it and into the workpiece. The gouge is pushed slowly through the piece when the machine is on but it has to be withdrawn frequently to remove sawdust and shavings.</p> <p style="text-align: right;">ctd:</p>	<p>Notes and sketches 15 marks.</p> <p>Notes only or sketches only 12 marks.</p>

Q.	SKETCHES	NOTES	MARKS
<p>ctd 5A(ii)</p>		<p>Method 2 With the containers removed from the lathe a hole could be bored using either a bit and brace, a pillar drill, or a hand held electric drill. Great care must be taken to drill along the axis of the piece.</p>	<p>Notes and sketches 15 marks.</p> <p>Notes only or sketches only 12 marks.</p>
<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 3 marks each.</p>

Q.	SKETCHES	NOTES	MARKS
<p>5B (i)</p>		<p>Method 1 Overlay method. Draw the letters onto a sheet of paper. Tape the background veneer to the veneers being used for the letters and trace the design onto the top veneer. Cut around the outline using a scalpel/ knife. Since both veneers are cut at once they should be a perfect fit for each other. Reverse the veneers for adhesive and fix to backboard.</p> <p>Method 2 Window method. Trace the design using carbon paper onto the background veneer. Cut around the outline of the letters to produce a 'window'. Tape the second veneer behind the first and cut using the edges of the windows as templates. Finish as in method 1.</p>	<p>Notes and sketches 15 marks.</p> <p>Notes only or sketches only 10 marks</p>
<p>5B (ii)</p>		<p><u>Rotary cutting.</u> The log is softened in a steam bath and then mounted on a spindle. The log is rotated towards the cutter and 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>Notes and sketches 15 marks.</p> <p>Notes only or sketches only 10 marks.</p>

Q.	SKETCHES	NOTES	MARKS
5B (iii)		<p>A log cut into veneers will produce a lot of veneers with little or no wastage. These veneers can then be glued to cheaper manufactured boards meaning that a large number of projects can be made from one log of expensive timber. This means that using veneers saves on cost and is better for the environment.</p>	<p>2 reasons 5 marks each.</p>

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

