

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate 2016

Marking Scheme

Materials Technology Wood

Ordinary Level

Note to teachers and students on the use of published marking schemes

Marking schemes published by the State Examinations Commission are not intended to be standalone documents. They are an essential resource for examiners who receive training in the correct interpretation and application of the scheme. This training involves, among other things, marking samples of student work and discussing the marks awarded, so as to clarify the correct application of the scheme. The work of examiners is subsequently monitored by Advising Examiners to ensure consistent and accurate application of the marking scheme. This process is overseen by the Chief Examiner, usually assisted by a Chief Advising Examiner. The Chief Examiner is the final authority regarding whether or not the marking scheme has been correctly applied to any piece of candidate work.

Marking schemes are working documents. While a draft marking scheme is prepared in advance of the examination, the scheme is not finalised until examiners have applied it to candidates' work and the feedback from all examiners has been collated and considered in light of the full range of responses of candidates, the overall level of difficulty of the examination and the need to maintain consistency in standards from year to year. This published document contains the finalised scheme, as it was applied to all candidates' work.

In the case of marking schemes that include model solutions or answers, it should be noted that these are not intended to be exhaustive. Variations and alternatives may also be acceptable. Examiners must consider all answers on their merits, and will have consulted with their Advising Examiners when in doubt.

Future Marking Schemes

Assumptions about future marking schemes on the basis of past schemes should be avoided. While the underlying assessment principles remain the same, the details of the marking of a particular type of question may change in the context of the contribution of that question to the overall examination in a given year. The Chief Examiner in any given year has the responsibility to determine how best to ensure the fair and accurate assessment of candidates' work and to ensure consistency in the standard of the assessment from year to year. Accordingly, aspects of the structure, detail and application of the marking scheme for a particular examination are subject to change from one year to the next without notice.



JUNIOR CERTIFICATE 2016

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.


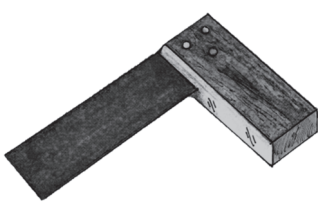
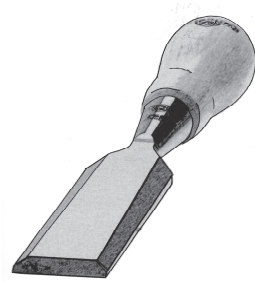
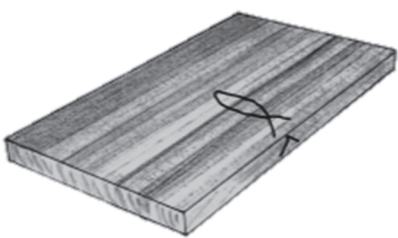
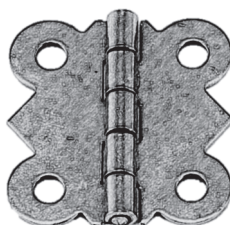
SECTION A - Short Answers

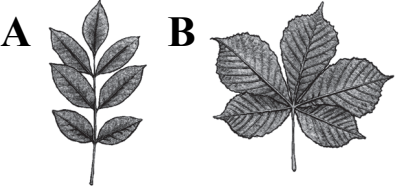


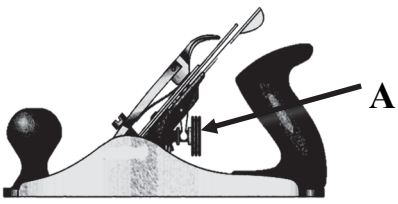
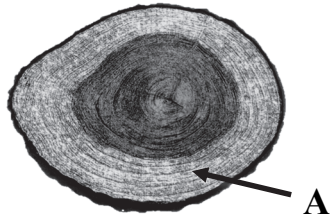
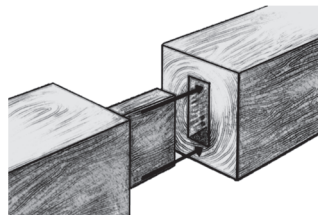
Mark all questions, select the best 16 questions


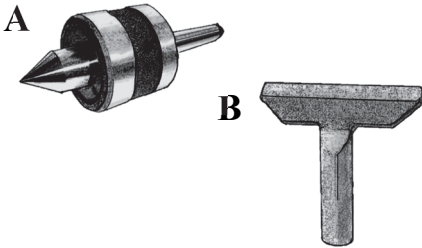



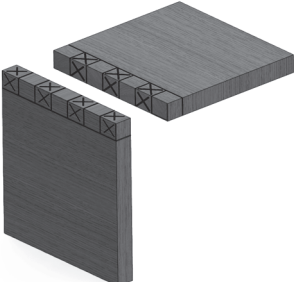
This section is marked out of 80 marks.



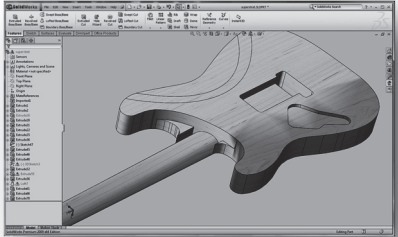
Divide the final mark by 2 on completion of marking.

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

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
1.	Raised Head Screw	5 marks.	
2a.	<p><i>Name:</i> Tri-square</p> <p><i>Use:</i> Used to check angles are right angles, used to square lines across wood etc.</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	<p>A</p> 
<u>OR</u>		<u>OR</u>	
2b.	<p><i>Name:</i> Chisel, bevel edged chisel</p> <p><i>Use:</i> Paring of joints, chamfers etc.</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>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)												
5.	A: Ash B: Horse Chestnut	Either one, 3 marks. Both 5 marks.													
6.	Jig saw	5 Marks													
7.	Any two relevant activities	Any one, 3 marks. Both, 5 marks.													
8.	Adjusting the blade	5 marks													
9.	Sapwood	5 marks													
10.	<table border="1" data-bbox="295 1422 742 1646"> <thead> <tr> <th>Lathe tools</th> <th>General tools</th> </tr> </thead> <tbody> <tr> <td></td> <td>FIRMER CHISEL ✓</td> </tr> <tr> <td>ROUGHING GOUGE ✓</td> <td></td> </tr> <tr> <td></td> <td>BEVEL EDGE CHISEL ✓</td> </tr> <tr> <td>PARTING TOOL ✓</td> <td></td> </tr> <tr> <td></td> <td>MORTICE CHISEL ✓</td> </tr> </tbody> </table>	Lathe tools	General tools		FIRMER CHISEL ✓	ROUGHING GOUGE ✓			BEVEL EDGE CHISEL ✓	PARTING TOOL ✓			MORTICE CHISEL ✓	1 mark per correct answer.	
Lathe tools	General tools														
	FIRMER CHISEL ✓														
ROUGHING GOUGE ✓															
	BEVEL EDGE CHISEL ✓														
PARTING TOOL ✓															
	MORTICE CHISEL ✓														
11.	Mortise and tenon Joint	5 marks.													

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
12.	Timber conversions is the process of cutting a log into various pieces of regular shape i.e. boards or planks.	5 marks.	
13.	<p>A— Tailstock or centre (forked)</p> <p>B— Toolrest</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
14.	<p>Any relevant functions:</p> <p>Anchors the tree,</p> <p>Sucks up water,</p> <p>Sucks up minerals/food for the tree,</p> <p>Etc.</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
15.	<p>Any relevant property:</p> <p>Attractive grain,</p> <p>Durable,</p> <p>Lightweight etc.</p>	5 marks.	
16.	Used to heat thermoplastics along a bend line.	5 marks.	
17.	Lines to complete marking out of waste.	5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
18.	White spirits. Any other relevant cleaner.	5 marks.	
19.	Router.	5 marks.	
20.	Easier to draw Easier to modify Multi Views (3D) Visualisation Any other valid answer.	5 marks.	

SECTION A

Note

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



JUNIOR CERTIFICATE 2016

**MATERIALS TECHNOLOGY
(WOOD)**

MARKING SCHEME

ORDINARY LEVEL

SECTION B

NOTE

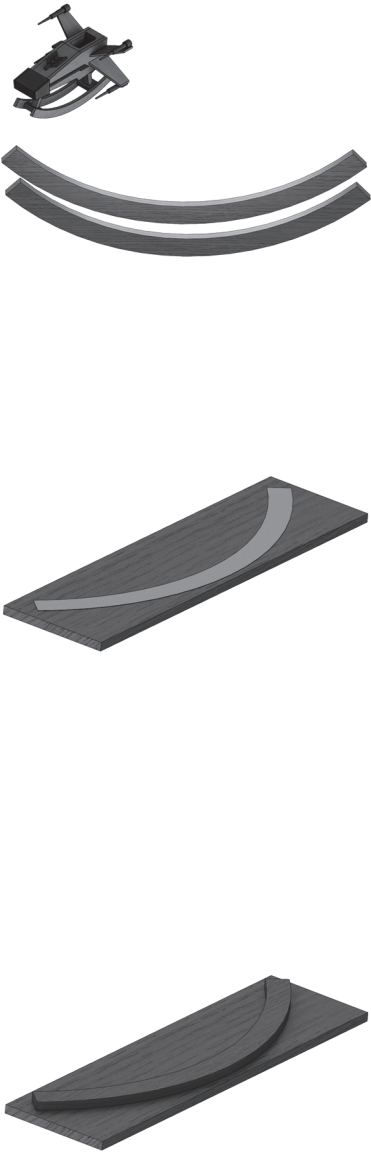
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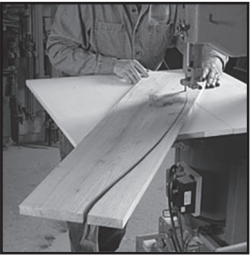



SECTION B

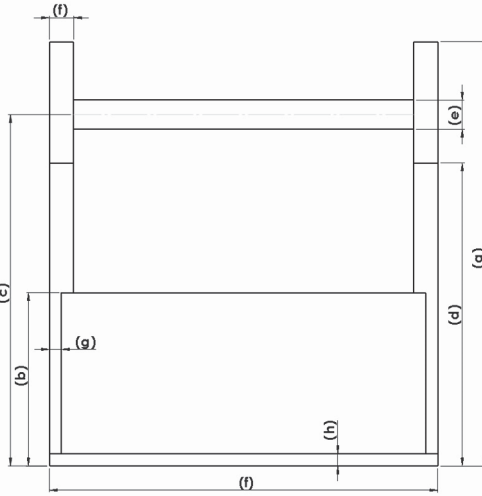
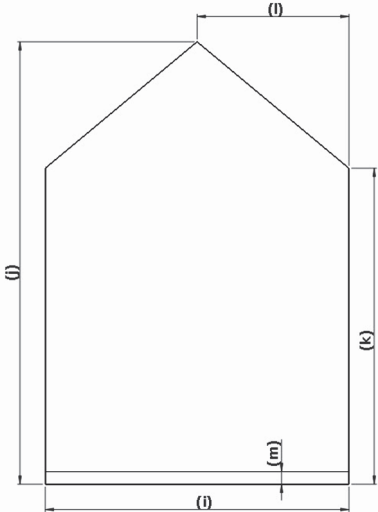
Mark for best three questions.

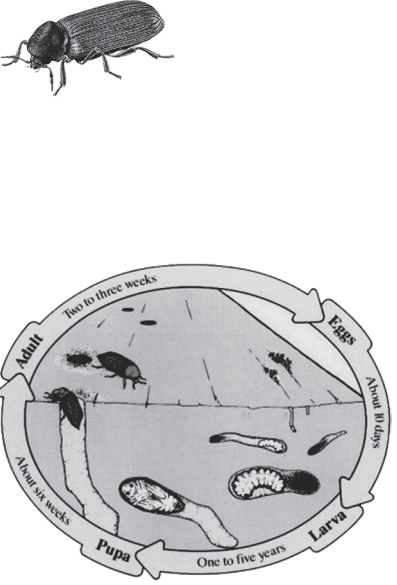
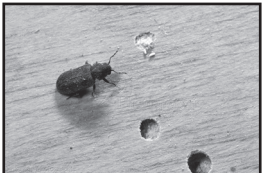

This section is marked out of 120 marks.

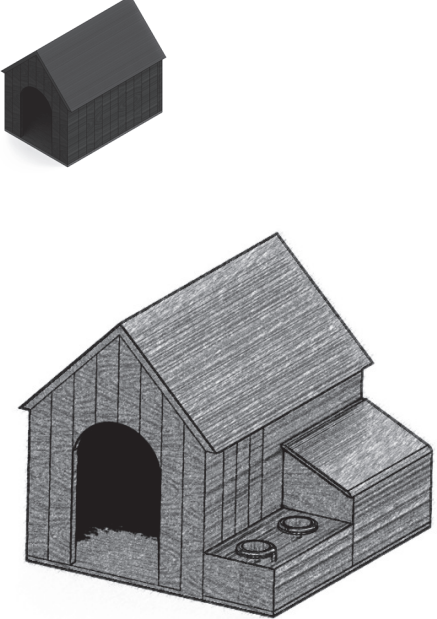
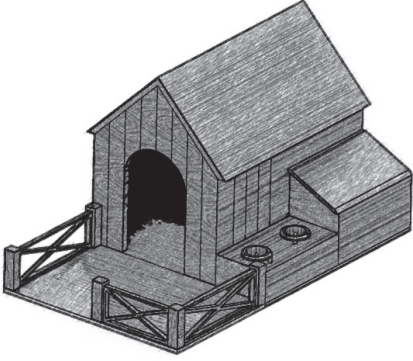

Divide the final mark by 2 on completion of marking

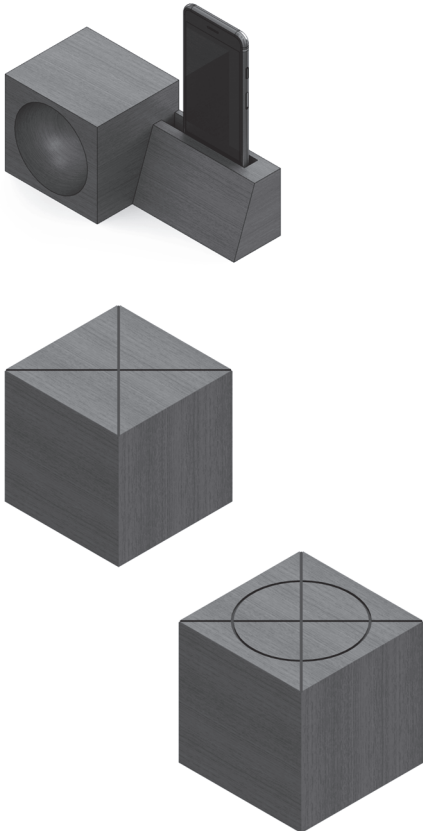
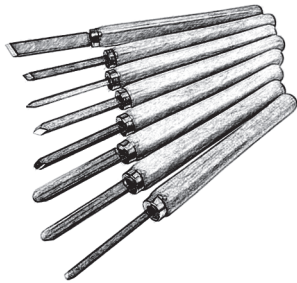
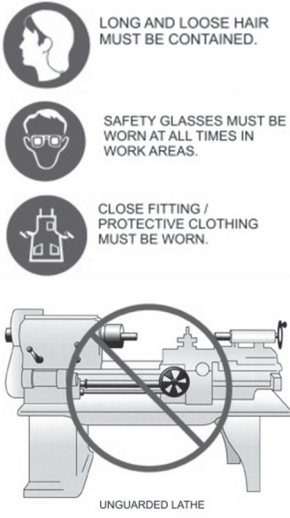
Q.	SKETCHES	NOTES	MARKS
1(i)		<p>To ensure the two curved base pieces are marked out so that they are identical either of following methods could be used:</p> <p>Draw required curve on cardboard and cut to produce a template. Tape template onto each of the base pieces in turn. This can then be traced 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. Work with the grain at all times.</p> <p>Finish with a medium sandpaper and then a fine sand paper. An electric sander could also be used. Sand along the grain.</p>	<p>Notes and sketches 16 marks.</p> <p>Notes only or Sketches only 12 marks.</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>2 marks for name.</p> <p>2 marks for each of two reasons.</p>

Q.	SKETCHES	NOTES	MARKS
2(i)	 <p style="text-align: center;">ELEVATION</p>	<p>(a) Overall height 4</p> <p>(b) Height of front 4</p> <p>(c) Height of dowel 2</p> <p>(d) Height of side edge 2</p> <p>(e) Diameter of dowel 2</p> <p>(f) Width of side 2</p> <p>(g) Width of housing 2</p> <p>(h) Height of base 2</p>	
2(ii)	 <p style="text-align: center;">END VIEW</p>	<p>(i) Width of crate 4</p> <p>(j) Overall height 4</p> <p>(k) Height of side 2</p> <p>(l) Width to top 2</p> <p>(m) Height of base 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 style="text-align: center;">4</p> <p style="text-align: center;">2</p>

Q.	SKETCHES	NOTES	MARKS
3(i)		<p>Eggs The female lays eggs in cracks and crevices on the wood surface. She will not lay eggs on very smooth surfaces.</p> <p>Larva The eggs hatch into little grubs. These grubs bore into the wood, eating their way through it forming tunnels. They grow over the next 2-3 years.</p> <p>Pupa The grub changes into a pupa or chrysalis near the wood surface. During this stage the grub changes into a beetle.</p> <p>Adult The beetle eats its way to the surface forming the circular exit hole. The adult searches for a mate to begin the cycle again.</p>	<p>Notes and sketches 18 marks.</p> <p>Notes only or sketches only 12 marks.</p>
3(ii)		<p>The beetle pupates near the wood surface. When it becomes an adult it breaks through the surface forming an exit hole. These holes are often the first sign of infestation.</p>	<p>Notes and sketches 12 marks.</p> <p>Notes only or sketches only 6 marks</p>
3(iii)		<p>If the wood is badly affected it should be cut out and replaced with new wood. Infected wood should be liberally treated with insecticide making sure that all of the surfaces are treated both inside and outside. Try to inject insecticide into the exit holes. Apply also to adjoining furniture in case it is infected.</p>	<p>10 marks</p>

Q.	SKETCHES	NOTES	MARKS
4 (i)		<p>Any relevant design to include space for storage of dog food and other small items with neat freehand sketches.</p>	<p>Notes and sketches 16 marks.</p> <p>Notes only or Sketches only 12 marks.</p>
4 (ii)		<p>Any two relevant changes to improve the design of the kennel in order to make it more attractive in appearance with neat freehand sketches.</p>	<p>Notes and sketches 16 marks.</p> <p>Notes only or Sketches only 12 marks.</p>
4 (iii)		<p>Name any suitable wood for the kennel.</p> <p>Any two relevant reasons for choice of wood.</p>	<p>2 marks for name.</p> <p>3 marks for each of two 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. Attach the faceplate securely using screws.</p> <p>The centre of the faceplate must be directly above the centre of the piece of wood.</p> <p>Mount the faceplate back on the headstock.</p>	<p>Notes and sketches 18 marks.</p> <p>Notes only or sketches only 12 marks.</p>
5A(ii)		<p>Name and sketch of one tool used when turning wood.</p>	<p>Name tool 4 marks.</p> <p>Sketch 10 marks.</p>
5A (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 two with reason given 4 marks each.</p>

Q.	SKETCHES	NOTES	MARKS
5B (i)		<p>Method 1 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.</p> <p>Method 2 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>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.</p>	<p>Notes and sketches 18 marks.</p> <p>Notes only or Sketches only 12 marks.</p>
5B (ii)		<p>Chip carving One of the simplest forms of carving. Based on geometric shapes, usually triangles. Patterns are repeated again and again.</p> <p>Relief Carving The background is cut away to raise the picture or design. This gives a three dimensional effect to the picture. The background can be given a texture using punches.</p> <p>Carving in the round This is carving to form a three-dimensional shape. It is making a sculpture in wood. It is the most difficult form of carving.</p>	<p>Notes and sketches 14 marks.</p> <p>Notes only or sketches only 10 marks.</p>

Q.	SKETCHES	NOTES	MARKS
5B (iii)		<p>Name any suitable wood for the clock face.</p> <p>Any two relevant reasons for the choice of wood given.</p>	<p>2 marks for name.</p> <p>3 marks for each of two reasons</p>

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