



**Coimisiún na Scrúduithe Stáit**  
**State Examinations Commission**

**Junior Certificate 2014**

**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.

The Sample solutions where shown are presented as example answers.

All other valid solutions are acceptable and are marked accordingly.


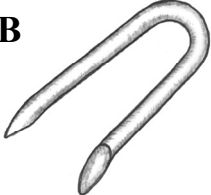
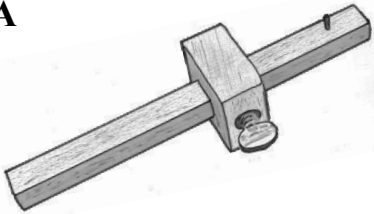


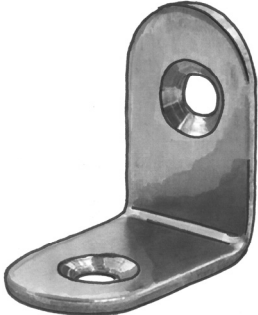
## SECTION A - Short Answers

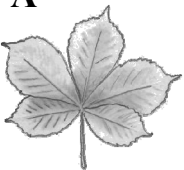
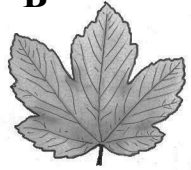

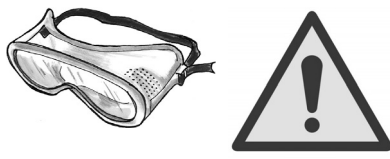
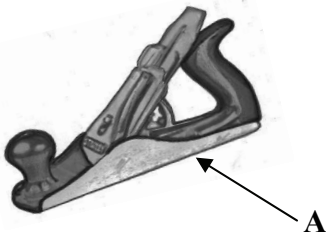
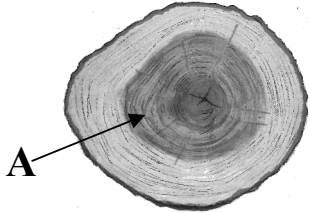
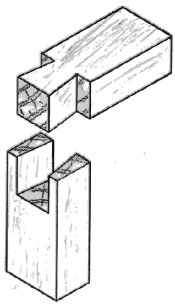
Mark all questions, select the best 16 questions


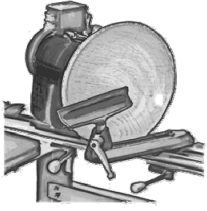
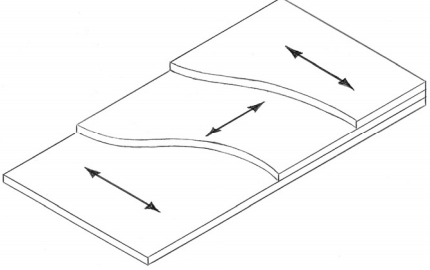
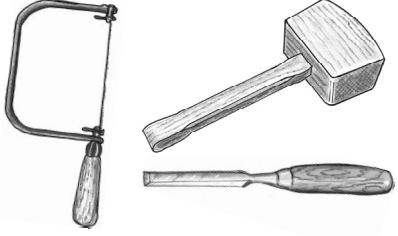

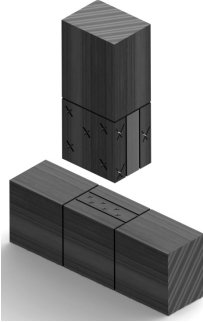
This section is marked out of 80 marks.


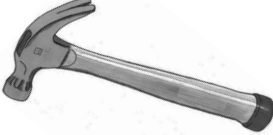

Divide the final mark by 2 on completion of marking.

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

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
1.	<p><i>Nail A:</i> Panel pin</p> <p><i>Nail B:</i> Staple</p>	<p>Either one, <b>3 marks.</b></p> <p>Both <b>5 marks.</b></p>	<p><b>A</b>  <b>B</b> </p>
2a.	<p><i>Name:</i> Marking Gauge</p> <p><i>Use:</i> Used to scratch a line parallel to the side of a piece of wood.</p>	<p>Either one, <b>3 marks.</b></p> <p>Both <b>5 marks.</b></p>	<p><b>A</b> </p>
<b>OR</b>		<b>OR</b>	
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>Either one, <b>3 marks.</b></p> <p>Both <b>5 marks.</b></p>	<p><b>B</b> </p>
3.	Marking for face side	<b>5 marks.</b>	
4.	<p><i>Name:</i> Right Angle Bracket</p> <p><i>Use:</i> Used to fix two pieces at a 90° angle to each other.</p>	<p>Either one, <b>3 marks.</b></p> <p>Both <b>5 marks.</b></p>	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
5.	A: Horse Chestnut B: Sycamore	Either one, <b>3 marks.</b>  Both <b>5 marks.</b>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>A</b>   </div> <div style="text-align: center;"> <b>B</b>   </div> </div>
6.	Cordless drill	<b>5 Marks</b>	
7.	Any two relevant precautions.	Any one, <b>3 marks.</b>  Two rules, <b>5 marks.</b>	
8.	Sole of plane.	<b>5 marks</b>	
9.	Heartwood.	<b>5 marks</b>	
10.	Coping saw- Curved cuts Tenon saw - Straight cuts Dovetail saw- Straight cuts Scroll saw Curved cuts Compass saw- Curved cuts	<b>1 mark</b> per correct answer.	
11.	Dovetail Joint	<b>5 marks.</b>	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
12.	The evaporation from the end grain can be slowed by painting the ends with bituminous paint.	5 marks.	
13.	Slow speed.	5 marks.	
14.	Arrows pointing in opposite directions.	5 marks.	
15.	Any relevant property.	5 marks.	
16.	It will not remove or scratch the varnish.	5 marks.	
17.	Lines for tenon.	5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
18.	Circle on neutral terminal.	5 marks.	
19.	The claw of the hammer is used for pulling nails out of wood.	5 marks.	
20.	Any relevant advantage: Accuracy, Identical parts etc.	5 marks.	

**SECTION A**

*Note*

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



**JUNIOR CERTIFICATE 2014**

**MATERIALS TECHNOLOGY  
(WOOD)**

**MARKING SCHEME**

**ORDINARY LEVEL**

**SECTION B**

**NOTE**


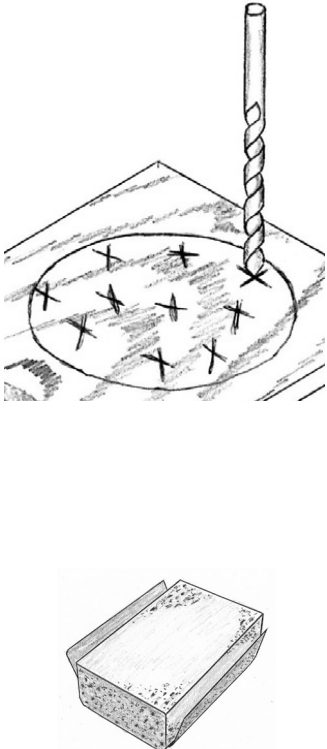
**Please ensure that totals for each question are divided by TWO before entering marks on marking sheets.**

## SECTION B

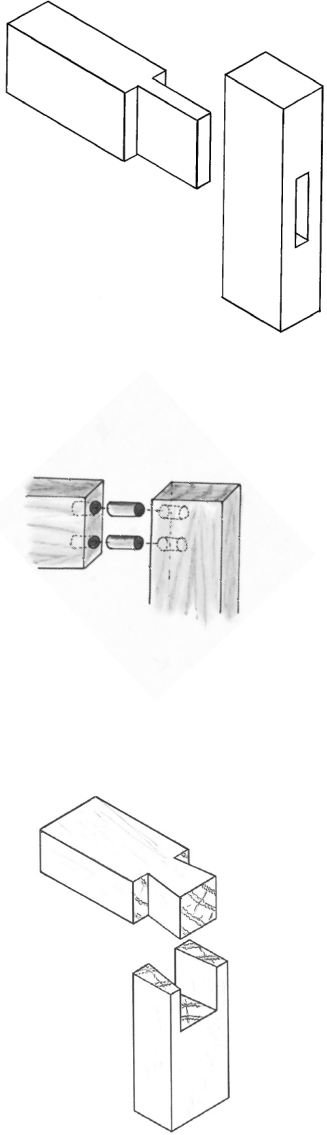
Mark for best three questions.

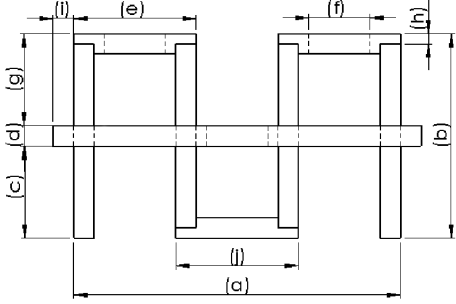
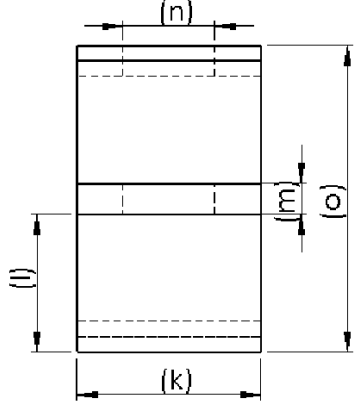
This section is marked out of 120 marks.



Divide the final mark by 2 on completion of marking




Q.	SKETCHES	NOTES	MARKS
1(i)		<p>Name and sketch of any relevant tool e.g.</p> <p>Drill, Coping saw, Jig saw Etc.</p>	<p><b>2 marks</b> for name.</p> <p><b>4 marks</b> for sketch.</p>
1(ii)		<p>Drill a large hole inside the circle. A large drill bit could be used.</p> <p>Drill completely through the wood near the edge of the hole.</p> <p>Use this hole to thread through a coping saw blade or jig-saw blade.</p> <p>Cut out the disc keeping inside the waste line.</p> <p>The edge of the hole can now be smoothed out using a surform, rasp or spokeshave.</p> <p>Finish with medium sandpaper and then fine sandpaper using a sanding block.</p>	<p>Notes and sketches <b>16 marks.</b></p> <p>Notes only or Sketches only <b>12 marks.</b></p>

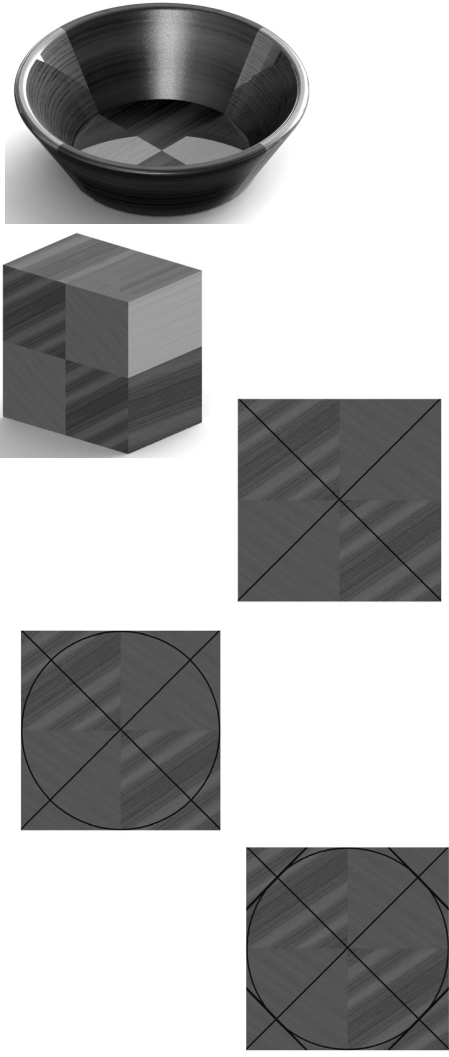

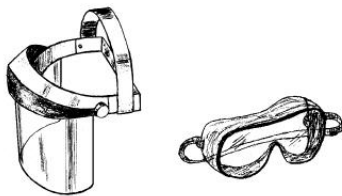


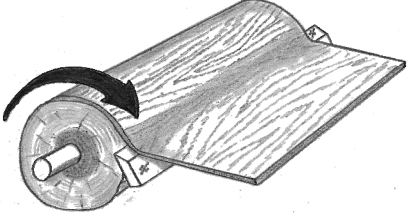

Q.	SKETCHES	NOTES	MARKS
1(iii)	 <p>The sketches show three different wood joints. The top one is a mortise and tenon joint, showing a rectangular tenon on the end of one piece fitting into a rectangular mortise in another piece. The middle one is a dowel joint, showing two rectangular pieces of wood joined together by two cylindrical dowels. The bottom one is a dovetail joint, showing two pieces of wood with interlocking dovetail-shaped ends.</p>	<p>Description of any suitable method of jointing leg <b>A</b> to side rail, <b>B</b> with notes and neat freehand sketches.</p> <p>E.g.</p> <p>Mortise and tenon, Dowel joint, Dovetail joint etc.</p>	<p>Notes and sketches <b>18 marks.</b></p> <p>Notes only or sketches only <b>12 marks.</b></p>

Q.	SKETCHES	NOTES	MARKS
2(i)	 <p style="text-align: center;"><b>ELEVATION</b></p>	<p>(a) Overall length 4</p> <p>(b) Overall height 4</p> <p>(c) Height of first shelf 2</p> <p>(d) Width of wood 2</p> <p>(e) Length of shelf 2</p> <p>(f) Diameter of hole 2</p> <p>(g) Height of upper section 2</p> <p>(h) Depth of halving joint 2</p> <p>(i) Length of shelf 2</p> <p>(j) Length of middle shelf 2</p>	
2(ii)	 <p style="text-align: center;"><b>END VIEW</b></p>	<p>(k) Width of stand 2</p> <p>(l) Height of first shelf 2</p> <p>(m) Width of wood 2</p> <p>(n) Diameter of hole 2</p> <p>(o) Overall height 2</p>	
2(iii)	<p style="text-align: center;"><b>DIMENSIONS</b></p> <p style="text-align: center;"><b>ARROWHEADS</b></p>	<p><b>ONE</b> mark for each correct dimension (<b>1 mark</b>×4)</p> <p><b>TWO</b> 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>Keep their leaves through the winter.            Seeds are in a cone.            The trunk is an even shape and tapers gradually.            The leaves are needle shaped.            The wood is softwood.            The tree shape is often conical and regular.            Tolerate extreme climatic cold.            Shallow root system.            Branches are flexible.            etc.</p>	<p>Notes and sketches  <b>16 marks.</b></p> <p>Notes only or Sketches only  <b>12 marks.</b></p>
3(ii)		<p>Loose their leaves in the autumn.            Seeds are surrounded by a fruit.            The trunk is an uneven shape and branches.            The leaves are broad.            The wood is hardwood.            The tree shape is often rounded and irregular.            Do not tolerate extreme climatic cold.            Deep root system.            Branches are not flexible.            etc.</p>	<p>Notes and sketches  <b>16 marks.</b></p> <p>Notes only or Sketches only  <b>12 marks.</b></p>
3(iii)		<p>Any two relevant examples of uses of wood from coniferous trees.</p> <p>Any two relevant examples of uses of wood from deciduous trees.</p>	<p>Uses  <b>8 marks.</b>  <b>(2 x 4)</b></p>

Q.	SKETCHES	NOTES	MARKS
4 (i)		<p>Notes and neat freehand sketches of any relevant design improvement which would make the letterbox easier to open e.g. handle cut into top of letterbox using drill and scroll saw.</p>	<p>Notes and sketches <b>16 marks.</b></p> <p>Notes only or Sketches only <b>12 marks.</b></p>
4 (ii)		<p>Any <b>two</b> relevant changes with notes and neat freehand sketches e.g. carving on front of letterbox, templates used to cut design onto side pieces etc.</p>	<p>Notes and sketches <b>16 marks.</b></p> <p>Notes only or Sketches only <b>12 marks.</b></p>
4 (iii)		<p>Suitable applied finish such as Oil finish, Shellac, Water based finish</p> <p>2 reasons: Enhance appearance, protection of wood, etc.</p>	<p><b>2 marks</b> for name.</p> <p><b>3 marks</b> for each reason.</p>

Q.	SKETCHES	NOTES	MARKS
5A(i)		<p>Glue and clamp four blocks together. Join the corners / diagonals to find the centre of the wood. Draw a circle on the ends. Mark out the corners that will be removed. When these are removed it will reduce the knocking and vibration when turning initially. Plane the corners off to form a roughly octagonal shape.</p>	<p>Notes and sketches <b>16 marks.</b></p> <p>Notes only or sketches only <b>12 marks.</b></p>
5A(ii)		<p>Name and sketch of one turning tool used to make this piece.</p>	<p>Name tool <b>4 marks.</b></p> <p>Sketch <b>8 marks.</b></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. Wear eye protection. Etc.</p>	<p>Any three with reason given 4 marks each. <b>12 marks.</b> <b>(3 x 3)</b> <b>&amp;</b> <b>(1 x 3)</b></p>

Q.	SKETCHES	NOTES	MARKS
5B (i)		<p>Rotary Cutting: 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>Notes and sketches <b>16 marks.</b></p> <p>Notes only or Sketches only <b>12 marks.</b></p>
5B (ii)		<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. The patterns can be cut using a fret saw or cut using a knife. Alternatively patterned strips of veneer, bandings, are available in a variety of widths and patterns. These can be inlaid in shallow grooves in solid wood to achieve the desired effect.</p>	<p>Notes and sketches <b>16 marks.</b></p> <p>Notes only or Sketches only <b>12 marks.</b></p>

<p><b>5B (iii)</b></p>		<p>Animal glue or Scotch glue.</p> <p>Thermoplastic qualities allow for mistakes by applying heat or moisture to re-soften.</p> <p>Requires very little pressure to make it set.</p> <p>It will not stain so the finish will not be affected.</p> <p>Etc.</p>	<p>Name <b>2 marks.</b></p> <p>Reasons <b>3 marks each.</b></p>
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**Please ensure that totals are divided by two before entering marks on marking sheets**

