



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate 2017

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 2017

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.**



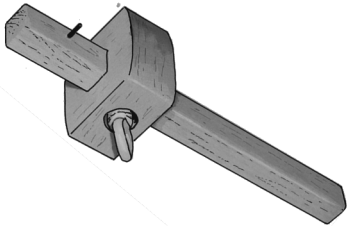
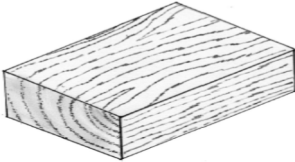
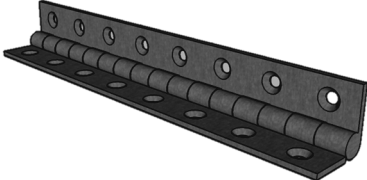
SECTION A - Short Answers


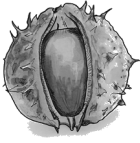


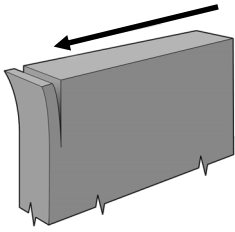
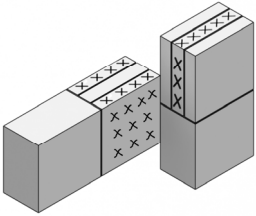

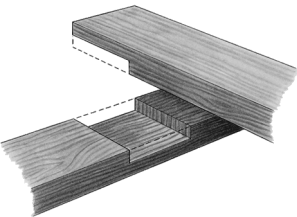
Mark all questions, select the best 16 questions

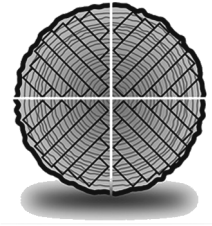
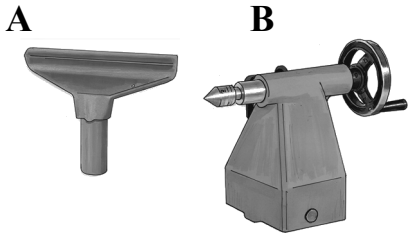
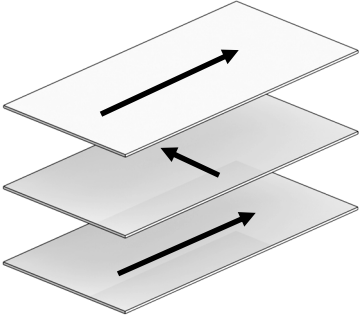
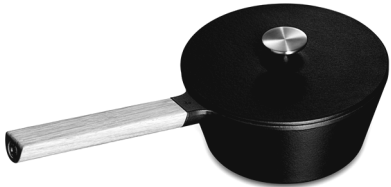
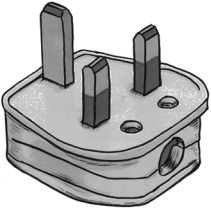

This section is marked out of 80 marks.


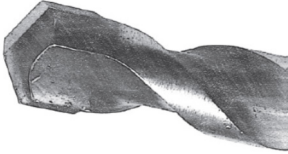

Divide the final mark by 2 on completion of marking.

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

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
1.	Round Head Screw	5 marks.	
2a.	<p><i>Name:</i> Coping saw</p> <p><i>Use:</i> Used to cut curved lines</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	<p>A</p> 
<u>OR</u>	<p><i>Name:</i> Marking Gauge</p>	<p style="text-align: center;"><u>OR</u></p>	
2b.	<p><i>Use:</i> Used to score a line parallel to the side of a piece of wood.</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	<p>B</p> 
3.	<p>Grain drawn on top</p> <p>Grain drawn on side</p> <p>End grain drawn</p>	<p>Any two, 4 marks.</p> <p>All three 5 marks.</p>	
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: Sycamore B: Horse Chestnut	Either one, 3 marks. Both 5 marks.	A  B 								
6.	Scroll saw	5 Marks									
7.	Any two relevant precautions	Any one, 3 marks. Both, 5 marks.									
8.	Plane from the edge inwards to about halfway, then plane in a similar manner from the other edge inwards. Use a shooting board and block.	5 marks									
9.		5 marks									
10.	<table border="1"> <thead> <tr> <th>Coniferous</th> <th>Deciduous</th> </tr> </thead> <tbody> <tr> <td></td> <td>Ash ✓</td> </tr> <tr> <td>Pine ✓</td> <td>Beech ✓</td> </tr> <tr> <td>Sitka Spruce ✓</td> <td>Oak ✓</td> </tr> </tbody> </table>	Coniferous	Deciduous		Ash ✓	Pine ✓	Beech ✓	Sitka Spruce ✓	Oak ✓	1 mark per correct answer.	
Coniferous	Deciduous										
	Ash ✓										
Pine ✓	Beech ✓										
Sitka Spruce ✓	Oak ✓										
11.	Tee Halving Joint	5 marks.									

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
12.	Quarter sawing Radial Sawing Rift Sawing	5 marks.	
13.	A— Toolrest B— Tailstock	Either one, 3 marks. Both 5 marks.	
14.	Arrows showing grain in opposite directions.	5 marks.	
15.	Any relevant property: Attractive grain, Durable, Doesn't conduct heat etc.	5 marks.	
16.	Earth Wire	5 marks.	
17.	Photosynthesis.	5 marks.	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
18.	<p>Transformer.</p> <p>Lower voltage (110 Volt) If you damage the cable you will get a less life threatening electric shock.</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
19.	<p>Masonry Drill bit.</p> <p>Electric drill Cordless drill</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
20.	<p>Precision Detail Mass production Any other valid answer.</p>	<p>5 marks.</p>	

SECTION A

Note

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



JUNIOR CERTIFICATE 2017
MATERIALS TECHNOLOGY
(WOOD)

MARKING SCHEME

ORDINARY LEVEL

SECTION B

NOTE


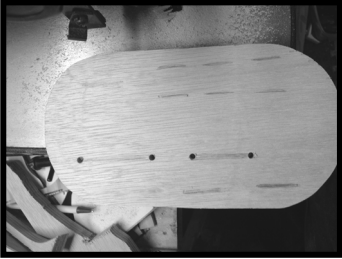
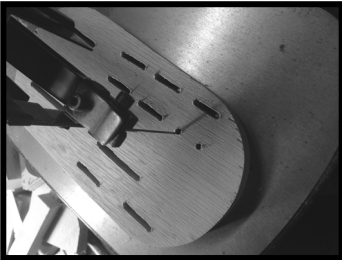
Please ensure that totals for each question are divided by TWO before entering marks on marking sheets.

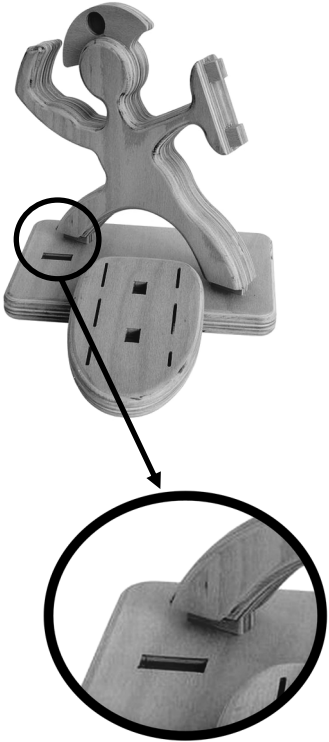
SECTION B

Mark for best three questions.

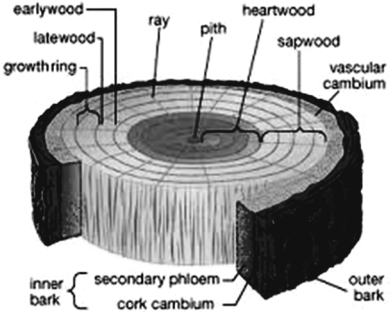
This section is marked out of 120 marks.

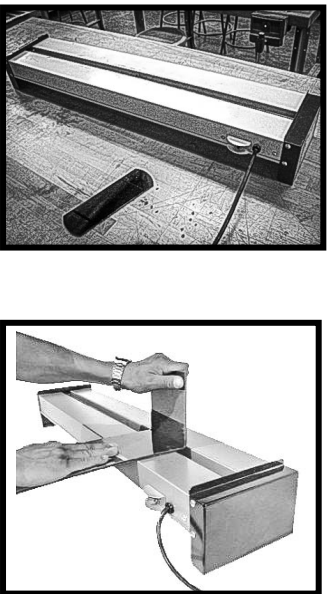
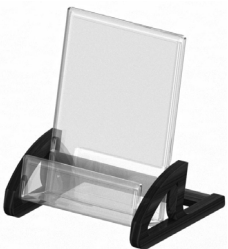
Divide the final mark by 2 on completion of marking

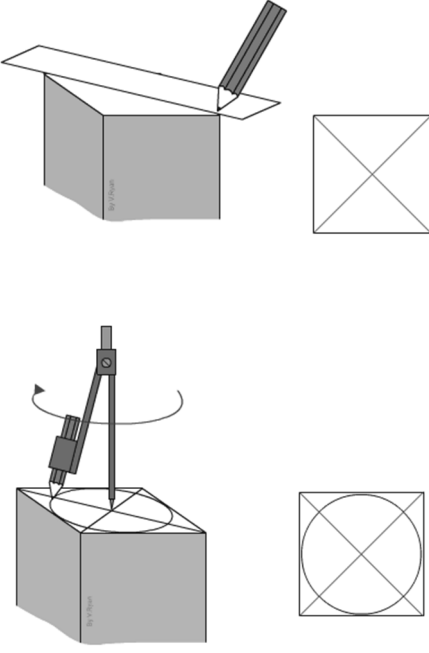
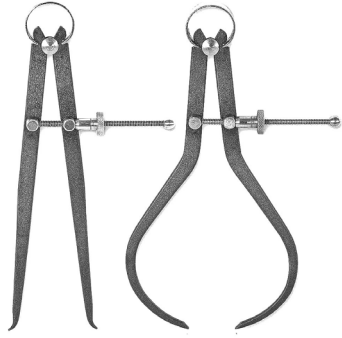

Q.	SKETCHES	NOTES	MARKS
1(i)	  	<p>Drill a small hole inside the slot. A small drill bit could be used.</p> <p>Drill completely through the wood near the edge of the slot.</p> <p>Use this hole to thread through a coping saw blade or jig-saw blade.</p> <p>Cut out the slot keeping inside the waste line.</p> <p>The edge of the slot can now be smoothed out using a surform, rasp or spokeshave.</p> <p>Finish with medium sandpaper and then increasingly fine sandpaper using a sanding block.</p>	<p>Notes and sketches 18 marks.</p> <p>Notes only or sketches only 12 marks.</p>


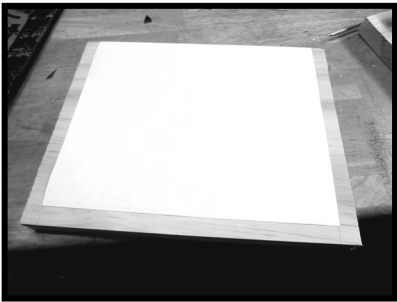


Q.	SKETCHES	NOTES	MARKS
1(ii)		<p>Description of any suitable method of jointing figure A to base B of the stand with notes and neat freehand sketches.</p> <p>E.g.</p> <p>Mortise and tenon, Dowel joint, etc.</p>	<p>Notes and sketches 16 marks.</p> <p>Notes only or Sketches only 12 marks.</p>
1(iii)		<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>

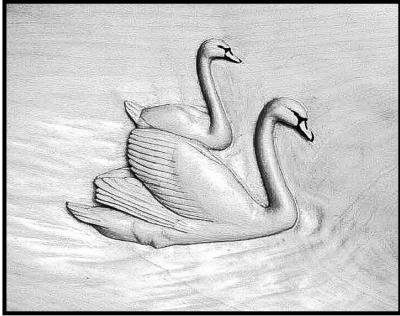

Q.	SKETCHES	NOTES	MARKS
2(i)	<p style="text-align: center;">ELEVATION</p>	<p>(a) Overall height 2</p> <p>(b) Height of LHS slot 2</p> <p>(c) Height of opening 2</p> <p>(d) Height of top slot 2</p> <p>(e) Length of opening 2</p> <p>(f) Overall length 2</p> <p>(g) Length of top slot 2</p> <p>(h) Length of RHS slot top 2</p> <p>(i) Length from RHS to top of slot 2</p> <p>(j) Depth of RHS slot 2</p> <p>(k) Width of bottom RHS slot 2</p>	
2(ii)	<p style="text-align: center;">END VIEW</p>	<p>(l) Width of stand 4</p> <p>(m) Overall height 2</p> <p>(n) Height of chamfer 2</p> <p>(o) Width of top 2</p> <p>(p) 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>A Heartwood</p> <p>B Sapwood</p>	<p>Both parts 8 marks.</p> <p>A or B only 4 marks.</p>
3(ii)		Any two relevant differences	<p>One 2 marks.</p> <p>Two 5 marks.</p>
3(iii)		Sketch with any three other parts labelled.	<p>3 Parts and sketch 18 marks.</p> <p>Parts named only or sketch only 10 marks.</p>
3(iv)		<p>One relevant function of each:</p> <p>E.g.</p> <p>Trunk : Stability</p> <p>Roots : Anchor in ground</p> <p>Crown : Holds leaves up to sunlight.</p>	<p>Three marks each.</p> <p>All three 9 marks.</p>

Q.	SKETCHES	NOTES	MARKS
4 (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 16 marks.</p> <p>Notes only or Sketches only 12 marks.</p>
4 (ii)		<p>Any suitable method of attaching the acrylic piece to the wooden back rail.</p> <p>E.g. Suitable bonding method, fixings etc.</p>	<p>Notes and sketches 10 marks.</p> <p>Notes only or Sketches only 6 marks.</p>
4 (iii)		<p>Any relevant change to improve the design of the stand in order to make it more attractive in appearance with neat freehand sketches.</p>	<p>Notes and sketches 14 marks.</p> <p>Notes only or Sketches only 10 marks.</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.</p> <p>Remove corners to form octagonal shape.</p> <p>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>Caliper</p> <p>Name and sketch of one tool used to check the diameter of the pieces of wood.</p>	<p>Name tool 6 marks.</p> <p>Sketch 10 marks.</p>
5A (iii)		<p>Ensure the tool rest is set at the correct level.</p> <p>Check the wood for loose knots and cracks.</p> <p>Keep long hair tied back.</p> <p>Loose or long sleeves should be rolled up.</p> <p>Tuck a tie or scarf inside your shirt/ blouse.</p> <p>Wear eye protection.</p> <p>Etc.</p>	<p>Any three with reason given 2 marks each.</p>

Q.	SKETCHES	NOTES	MARKS
5B (i)		Chip carving	4 marks.
5B (ii)	  	<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 14 marks.</p> <p>Notes only or Sketches only 10 marks.</p>
5B (iii)		Name and sketch of one carving tool that could be used for this project.	<p>Name 2 marks.</p> <p>Sketch 6 marks</p>

Q.	SKETCHES	NOTES	MARKS
5B (iv)	 	<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, forming a wooden sculpture. It is arguably the most challenging type of carving.</p>	<p>Notes and sketches 14 marks.</p> <p>Notes only or sketches only 10 marks.</p>

Please ensure that totals are divided by 2 before entering marks on marking sheets