



**JUNIOR CERTIFICATE 2006**

**MATERIALS TECHNOLOGY  
(WOOD)**

**MARKING SCHEME**

**ORDINARY LEVEL**

**SECTION A**

**NOTE**

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

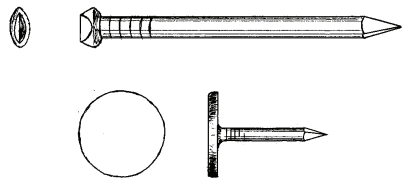
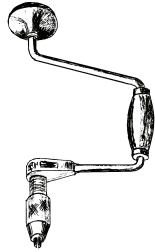
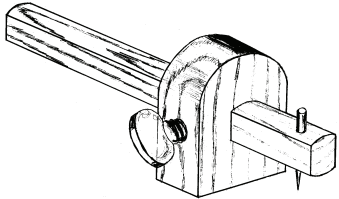
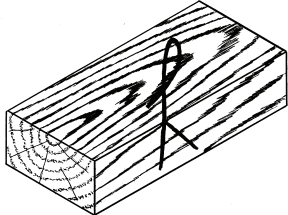
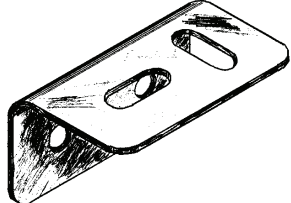
## SECTION A - Short Answers

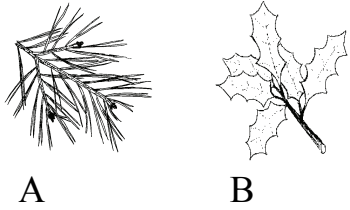
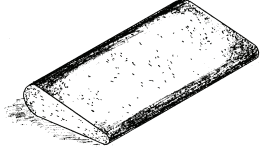
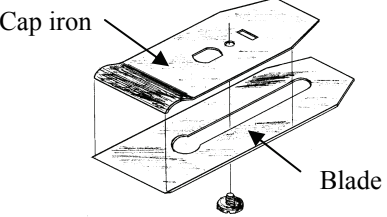
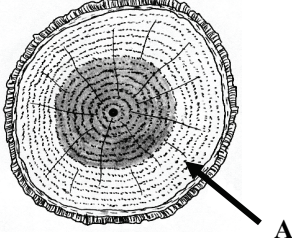
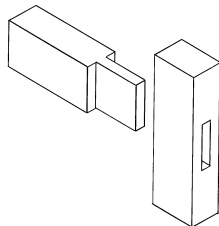
Mark all questions, select the best 16 questions

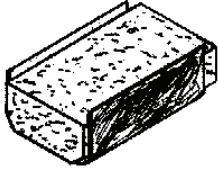
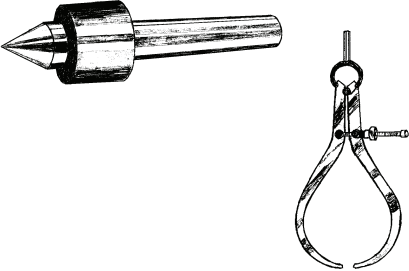
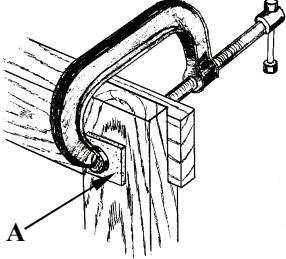
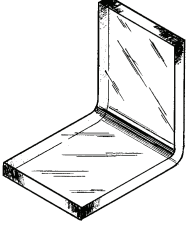
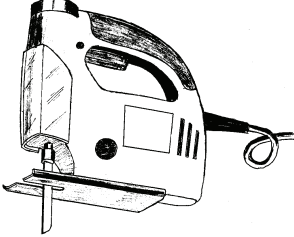
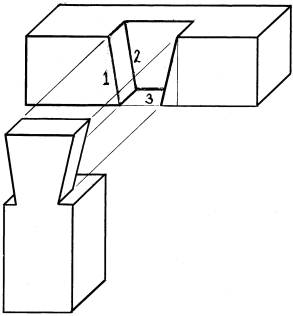
This section is marked out of 80 marks.

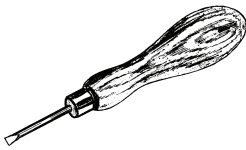
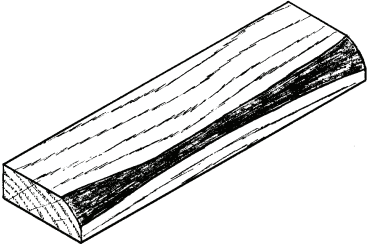
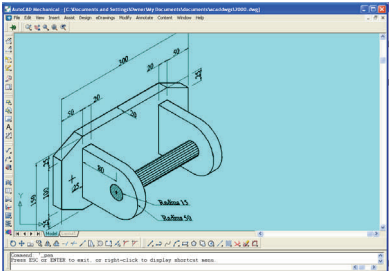
Divide the final mark by 2 on completion of marking.

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

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
1.	<p>Oval wire nail</p> <p>Clout head nail</p>	<p>Either one, <b>3 marks.</b></p> <p>Both <b>5 marks.</b></p>	
2a.	<p><b>Name:</b> Brace</p> <p><b>Use:</b> Used to hold drill bits. Used to hold and turn drill bits.</p>	<p>Either one, <b>3 marks.</b></p> <p>Both <b>5 marks.</b></p>	
<b>OR</b>		<b>OR</b>	
2b.	<p><b>Name:</b> Marking gauge</p> <p><b>Use:</b> Used to scratch a line on wood parallel to one of the sides.</p>	<p>Either one, <b>3 marks.</b></p> <p>Both <b>5 marks.</b></p>	
3.	<p>Face edge mark shown in correct position on diagram.</p>	<b>5 marks.</b>	
4.	<p><b>Name:</b> Expansion plate.</p> <p><b>Use:</b> Used to secure table tops etc. to legs and rails and yet allow for expansion/contraction of the top</p>	<p>Either one, <b>3 marks.</b></p> <p>Both <b>5 marks.</b></p>	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
5.	A: Pine B: Holly	Either one, <b>3 marks.</b>  Both <b>5 marks.</b>	 <p>A B</p>
6.	Used to sharpen gouges.	<b>5 Marks</b>	
7.	One person at each end of the plank. Take care not to knock tools etc off the desks. Take care not to hit people when turning. Don't strain your back. Etc.	Any one, <b>3 marks.</b>  Two rules, <b>5 marks.</b>	
8.	The cap iron curls the shaving away from the blade. It stops the blade from digging into the wood. Reduces the risk of ripping the grain. Strengthens the blade.	<b>5 marks</b>	 <p>Cap iron Blade</p>
9.	Sapwood	<b>5 marks</b>	 <p>A</p>
10.	Silver ——— Will not rust Aluminium — Will not rust Steel ————— Will rust Iron ————— Will rust Zinc ————— Will not rust	<b>1 mark</b> per correct answer.	
11.	Mortise and tenon joint.	<b>5 marks.</b>	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
12.	Cork is soft and therefore the sandpaper does not wear out or clog as quickly. It is also light and easily shaped. Comfortable to hold.	5 marks.	
13.	<p>A: Rotating centre</p> <p>B: Callipers</p>	<p>Either one, 3 marks.</p> <p>Both 5 marks.</p>	
14.	The G-cramp exerts pressure and will damage the work surface. The waste wood spreads the pressure over a larger area and protects the project from damage.	5 marks.	
15.	Thermoplastic	5 marks.	
16.	Electric jigsaw	5 marks	
17.	Three lines to be added	5 marks	

Q.	SOLUTION	MARKS	DIAGRAM (IF ANY)
18.	Used to make small holes in wood. To mark a hole centre. To make a small pilot hole for a screw or nail.	5 marks.	
19.	Waney edge	5 marks.	
20.	<p>Computer Aided Drawing.</p> <p>Computer Aided Drafting.</p> <p>Computer Aided Design.</p>	5 marks.	

## SECTION A

*Note*

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



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**MATERIALS TECHNOLOGY  
(WOOD)**

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**ORDINARY LEVEL**

**SECTION B**

**NOTE**

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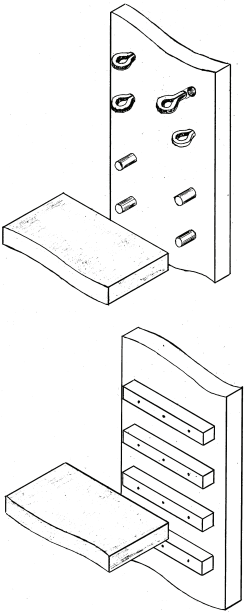

## SECTION B

Mark for best three questions.

This section is marked out of 120 marks.

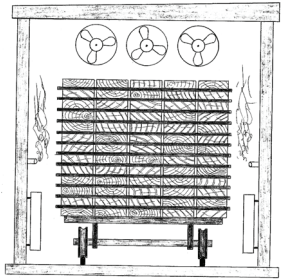
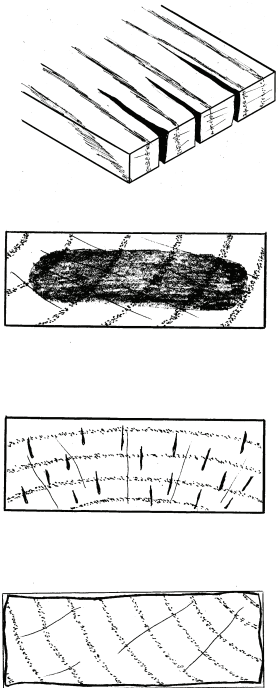
Divide the final mark by 2 on completion of marking

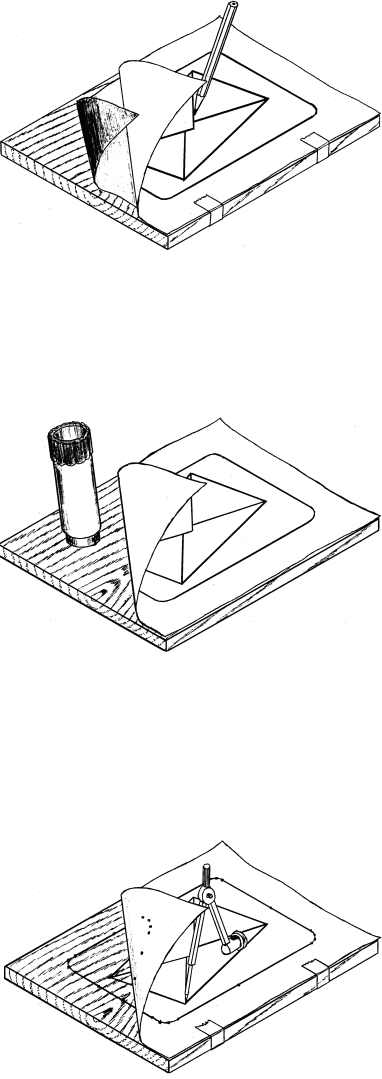
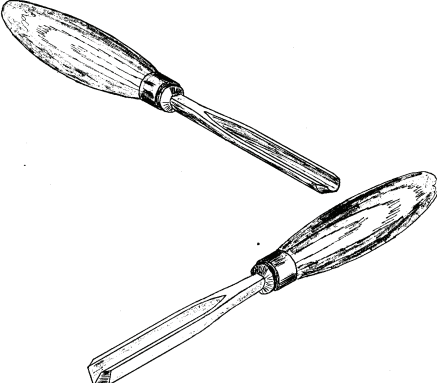
Q.	SKETCHES	NOTES	MARKS
1(i)		<p>Dovetail joint            Finger joint            Tongue and groove joint            Dowel or biscuit joint            Butt joint            Mitre joint</p> <p>Nails and glue.            Screws and glue.</p>	<p>Notes and sketches  <b>16 marks.</b>            Notes only            or            sketches only  <b>12 marks.</b></p> <p>Notes and sketches  <b>8 marks.</b>            Notes only            or            sketches only  <b>6 marks.</b></p>
1(ii)		<p>A series of trenches wide enough so that the shelves can slide in and out easily.</p>	<p>Notes and sketches  <b>12 marks.</b></p> <p>Notes only            or            sketches only  <b>9 marks.</b></p>

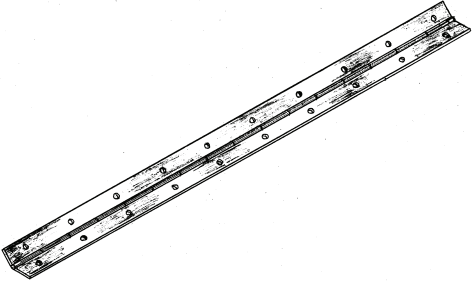
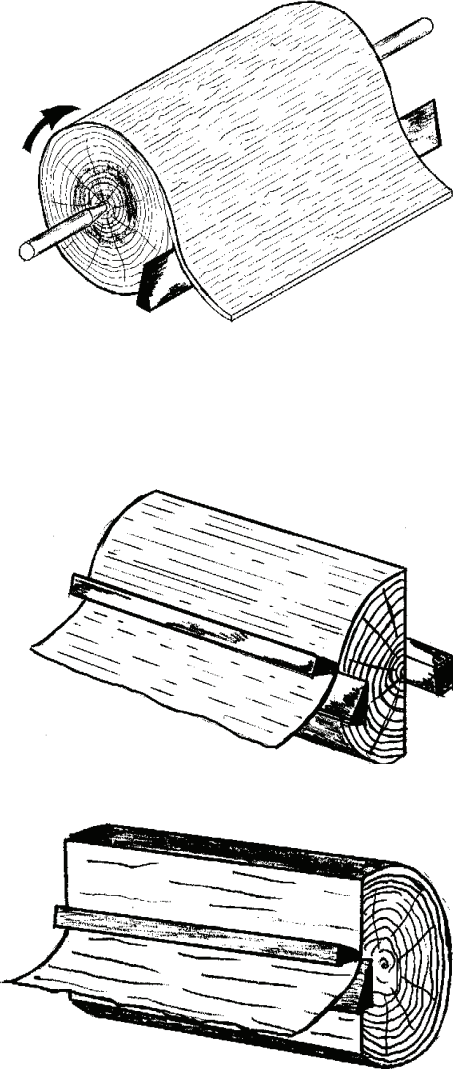
Q.	SKETCHES	NOTES	MARKS
1(ii)		<p>Pegs or shelf supports pushed in to a row of holes drilled into the bookcase sides.</p> <p>A series of battens fixed to the sides at different heights.</p>	
1(iii)		<p><b><u>Oil Finish</u></b>  Dust down the project. An oil finish can be applied using a cloth or a brush. Apply a generous coat of oil and allow it to soak in for a few minutes before the excess should be wiped off. When dry sand lightly using wire wool and dust down. Repeat for coats two and three.</p> <p><b><u>Varnish</u></b>  Dust down the project. Apply the first coat of varnish. Use a brush and apply a light coat. When dry sand lightly using wire wool and dust down. Repeat for coats two and three.</p>	12 marks.





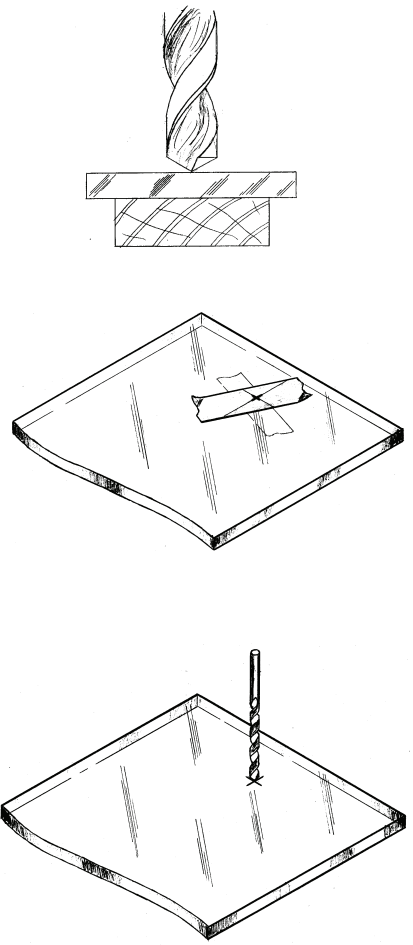
Q.	SKETCHES	NOTES	MARKS
3(i)		<p>Stickers</p> <p>They support the planks. They allow the circulation of air around all surfaces of the planks. Help control the rate of drying.</p>	<p>Name <b>4 marks</b></p> <p>Function <b>6 marks.</b></p>
3(ii)		<p><b><u>End splits</u></b> Rapid drying from the ends of the planks can cause them to split and crack.</p> <p><b><u>Case hardening</u></b> The outer layer of the plank is dry but the centre is still wet causing stress in the plank.</p> <p><b><u>Honeycombing</u></b> The plank develops a multitude of small cracks throughout.</p> <p><b><u>Collapse</u></b> Some of the cell walls collapse causing the wood to become distorted.</p>	<p>Any two <b>6 marks each.</b></p>
3(iii)		<p><b><u>Moisture content</u></b> A kiln will dry timber to any required moisture content. Air seasoning will only dry to approximately 18% MC.</p> <p><b><u>Time</u></b> Kiln seasoning is a much faster method of seasoning than air seasoning.</p> <p><b><u>Cost</u></b> Kiln seasoning is a much more expensive method of seasoning because of the cost of heat and ventilation.</p>	<p><b>6 marks.</b></p> <p><b>6 marks.</b></p> <p><b>6 marks.</b></p>

Q.	SKETCHES	NOTES	MARKS
<p>4A (i)</p>		<p><b><u>Method 1</u></b> 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 ensuring that no line is missed.</p> <p><b><u>Method 2</u></b> 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><b><u>Method 3</u></b> 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. Alternatively a compass could be used to mark the wood through the paper. The dots can be joined to form the picture.</p>	<p>Notes and sketches <b>18 marks.</b></p> <p>Notes only or sketches only <b>12 marks.</b></p>
<p>4A (ii)</p>		<p>Diagram of a carving gouge or a V-tool.</p> <p>Name of tool.</p>	<p><b>10 marks.</b></p> <p><b>2 marks.</b></p>

Q.	SKETCHES	NOTES	MARKS
4A (iii)		<p>A piano hinge is very easy to fit because the leaves do not need to be housed.</p> <p>A piano hinge can be cut to length to suit the project in hand.</p> <p>A piano hinge gives a very strong fix.</p> <p>It looks good.</p>	<p>Two reasons <b>5 marks each.</b></p>
4B (i)		<p><b><u>Rotary cutting.</u></b> 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 continuous sheet of veneer is cut off. The veneer is trimmed to size and dried carefully.</p> <p><b><u>Half round slicing.</u></b> A half log is softened as above and fixed to an axle. As the log is rotated the blade cuts off a sheet of veneer.</p> <p><b><u>Straight slicing.</u></b> A log is softened and then sliced without being rotated.</p>	<p>Notes and sketches <b>18 marks.</b></p> <p>Notes only or sketches only <b>14 marks.</b></p>

<p><b>4B (ii)</b></p>		<p>The design of the stand for the picture need not necessarily be made from wood: perspex, metal or wire could also be used.</p>	<p>Notes and sketches <b>12 marks.</b></p> <p>Notes only or sketches only <b>9 marks.</b></p>
<p><b>4B (iii)</b></p>		<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, more readily available manufactured boards. A large number of projects can therefore be made from the one log of rare and expensive timber.</p> <p>If the same log was cut into planks to make projects using solid wood, the log would be used up much quicker and there would also be a lot of waste in the form of sawdust and shavings.</p>	<p><b>10 marks.</b></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>Three precautions <b>4 marks each.</b></p>

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