



Junior Certificate Examination 2006

Materials Technology Wood
Higher Level
Section A (40 Marks)

Monday 19 June
Afternoon, 2.00 - 4.00

Instructions

- (a) Answer any **sixteen** questions.
- (b) All questions carry equal marks.
- (c) Answer the questions in the spaces provided.
- (d) This booklet **must** be handed up at the end of the examination.
- (e) Write your examination number in the box provided and on all other pages used.

Examination Number:

Centre Number	

Section A	
1	
2	
3	
4(a) or 4(b)	
5	
Total	

SECTION A - 40 MARKS

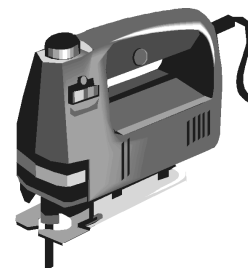
Answer any 16 questions from this section. All questions carry equal marks.

1. (i) Name the power tool shown in the diagram.

ANSWER

- (ii) State **ONE** purpose for which this tool is used.

PURPOSE



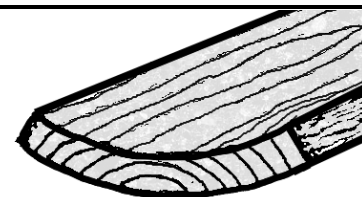
2. The board shown in the diagram has become distorted across its width.

- (i) What is this form of distortion commonly called?

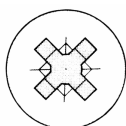
ANSWER

- (ii) What causes a board to distort in this manner?

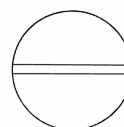
ANSWER



3. (i) In the spaces provided, name the two screw slots shown in the diagrams.



A

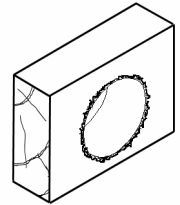


B

- (ii) State **ONE** advantage that slot A has over slot B.

ANSWER

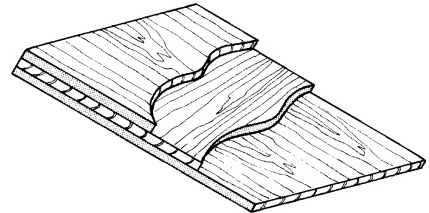
4. The boring of a hole through the piece of timber shown in the diagram has left rough, jagged edges.



Suggest one method that could be used to prevent this happening.

ANSWER

5. (i) Name the manufactured board shown in the diagram.



ANSWER

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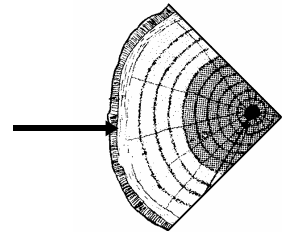
- (ii) State **ONE** advantage of this type of manufactured board.

ADVANTAGE

6. The **BAST** is a thin layer of cells located under the bark of a tree.

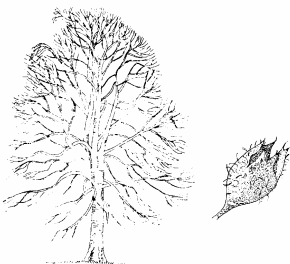
What is the function of the bast?

BAST



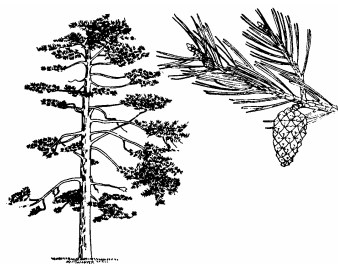
FUNCTION

7. The diagrams show the silhouette and seeds of three common Irish trees. Name the trees in the spaces provided.



A

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B

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C

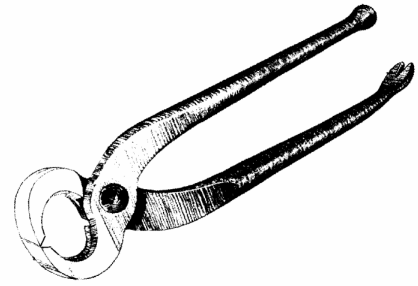
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8. (i) Name the woodworking tool shown in the diagram.

ANSWER

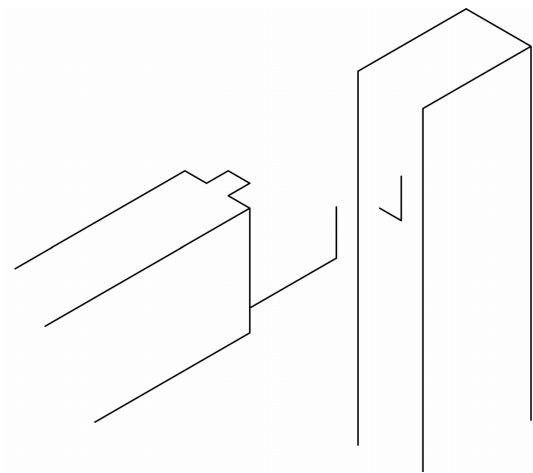
- (ii) For what purpose is this tool used?

PURPOSE



9. The diagram shows an incomplete exploded isometric sketch of a haunched Mortise and Tenon joint.

Complete the sketch of this joint.

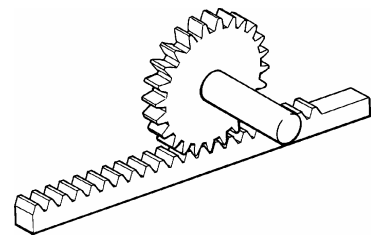


10. (i) Name the gear mechanism shown in the diagram.

ANSWER

- (ii) Name a common woodworking machine that incorporates this type of mechanism.

ANSWER



11. CAM is widely used throughout the furniture production industry. What is the correct meaning of the abbreviation CAM?

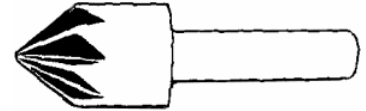
C

A

M

12. (i) Name the tool shown in the diagram.

ANSWER



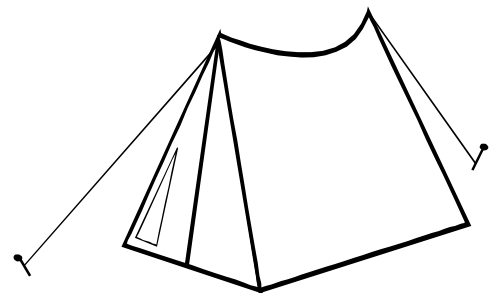
(ii) For what purpose is this tool used?

PURPOSE

13. The diagram shows a tent secured to the ground using ropes.

What is the correct name for the force acting in the ropes?

ANSWER

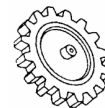


14. The diagrams show a number of items which are manufactured from plastics.

Match each item shown with the most appropriate plastic for its manufacture.

GLASS REINFORCED PLASTIC
POLYVINYL CHLORIDE
NYLON

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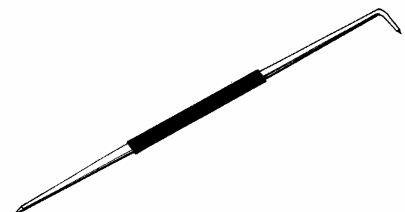


15. (i) Name the tool shown in the diagram.

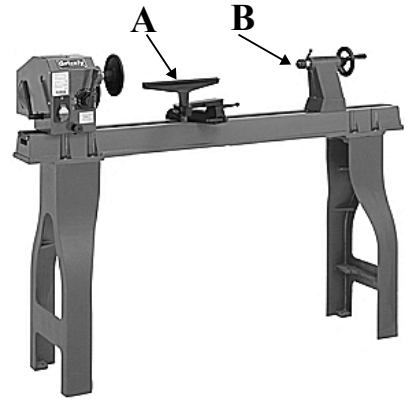
ANSWER

(ii) State an appropriate use for this tool.

ANSWER



16. (i) Name the parts of the woodturning lathe labelled **A** and **B** in the diagram.



A

B

- (ii) State **ONE** function of each of the two parts **A** and **B**.

FUNCTION OF A

FUNCTION OF B

17. The diagram shows a veneered jewellery box.



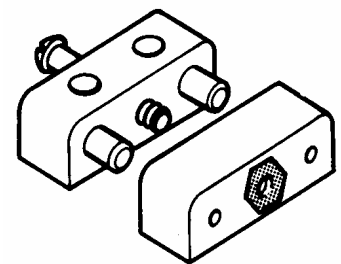
- (i) Suggest a suitable adhesive for applying the veneer.

ADHESIVE

- (ii) Give **ONE** reason for your choice of adhesive.

REASON

18. Shown in the diagram is a common woodwork fitting.



- (i) Name the fitting.

ANSWER

- (ii) State one advantage of using this type of fitting.

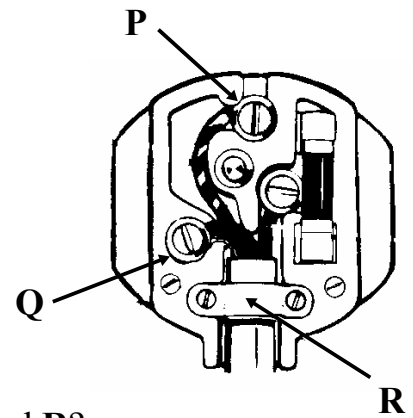
ADVANTAGE

19. Shown in the diagram is a plug-top.

(i) Name the plug terminals labelled **P** and **Q**.

P

Q

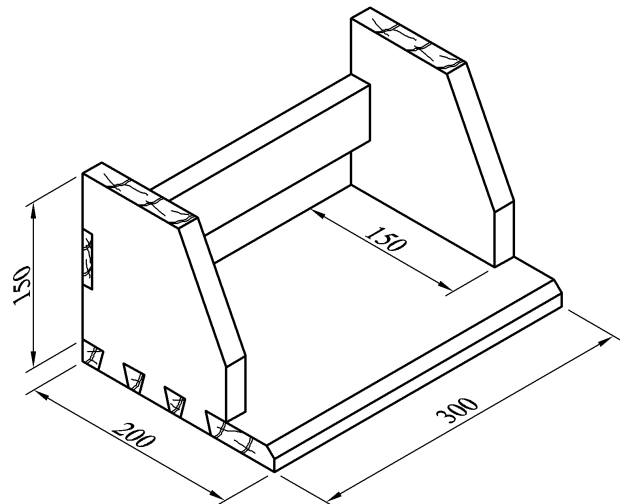


(ii) What is the function of the component labelled **R**?

FUNCTION

20. The diagram shows a book rack for a desktop .

Complete the following cutting list for the book rack.
(All material is 20 mm thick)



Description	Quantity	L	W	T
Base	1	300		20
Sides			150	20
Rail	1		50	

This booklet must be handed up at the end of the examination.

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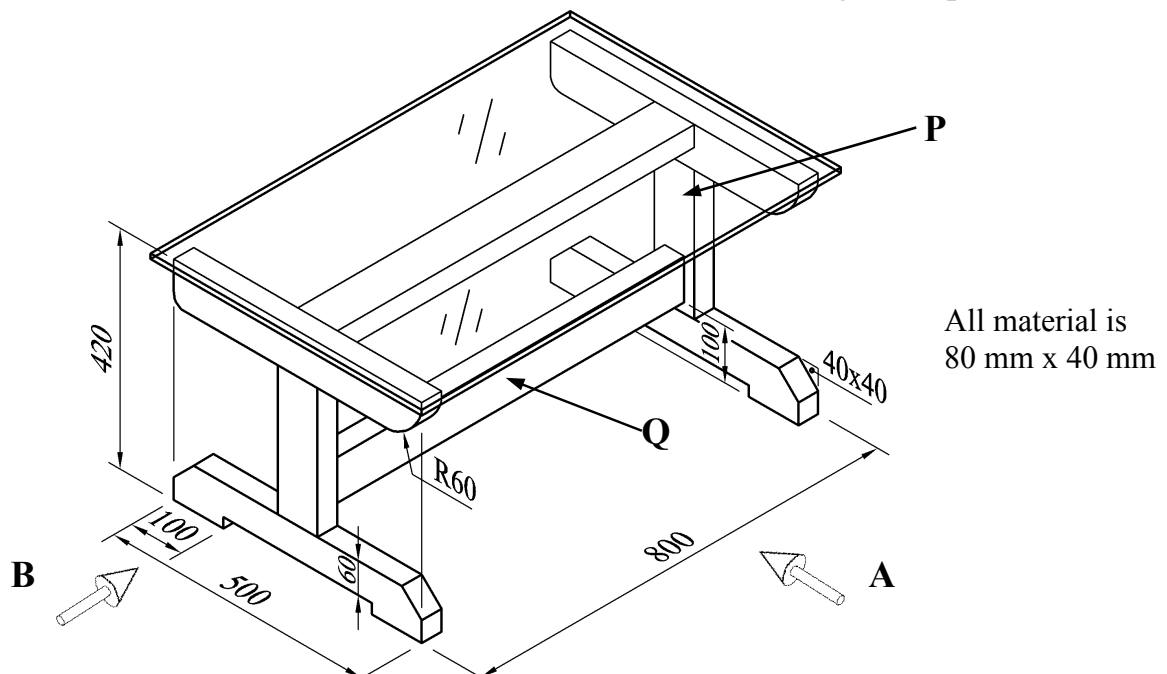
Junior Certificate Examination 2006

Materials Technology Wood
Higher Level
Section B (60 Marks)

Instructions

- (a) Answer **any** three questions. All questions carry equal marks.
- (b) Where sketches are required they may be done freehand or on the graph paper provided.
- (c) Write your examination number on the answer book and on all other pages used.
- (d) Question 1 from this section should be answered on drawing paper. All other questions should be answered on the answer book supplied.

1. The diagram shows a dimensioned isometric drawing of a coffee table manufactured from oak. The table has a 12mm thick glass top.



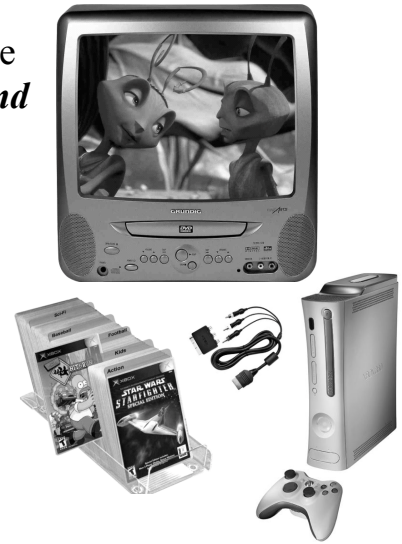
- (i) To a scale of 1:4, draw a Front Elevation of the table looking in the direction of arrow **A** and an End Elevation looking in the direction of arrow **B**. Include **FOUR** main dimensions on your drawing.
- (ii) With the aid of notes and **neat freehand sketches**, describe a suitable method of joining the members **P** and **Q**.

2. (i) The following list describes a number of steps that are usually undertaken in a process of design.

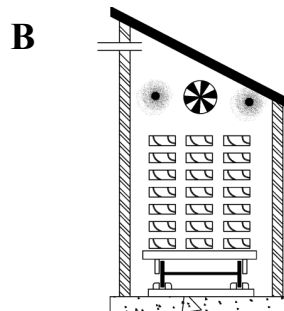
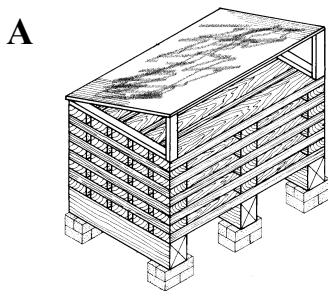
Design Ideas/Solution Investigation and Research Evaluation
Analysis of Brief Sketches/Working Drawings

Place these steps in their correct order and write a short note explaining any **TWO** of the steps in the process.

- (ii) The diagram shows a television, games console and accessories. Using notes and *neat freehand sketches* to communicate your ideas, design a unit that will store and display these items.
- (iii) State **TWO** specific design requirements that must be considered for the proposed unit.
- (iv) Suggest a suitable material for the manufacture of the proposed unit and give **TWO** reasons for your selection.



3. (i) Name the two methods of seasoning, **A** and **B**, shown in the diagrams and state **TWO** advantages and **TWO** disadvantages of each method of seasoning.



- (ii) Explain what is meant by the term **Equilibrium Moisture Content (EMC)**.
- (iii) When wood is used in external situations it is normally treated with a **Preservative**. State **TWO** reasons for the use of preservatives and name **TWO** classes of preservative.
- (iv) Name **THREE** methods of applying preservatives, and state **ONE** advantage and **ONE** disadvantage of each method.

4. Answer either A or B

A. The diagram shows a storage chest for toys.
The chest is made from pine.

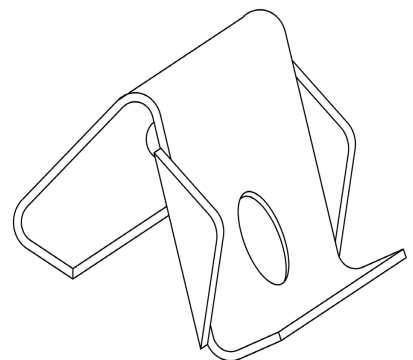
- (i) With the aid of *neat freehand sketches*, describe *in detail*, the steps you would follow to prepare the wood for a clear applied finish.
- (ii) Select an appropriate clear finish for the chest and give **TWO** reasons in support of your choice.
- (iii) With the aid of *neat freehand sketches*, describe *in detail* the steps you would follow in the application of your chosen finish.
- (iv) State **TWO** specific safety precautions that should be observed when using applied finishes.



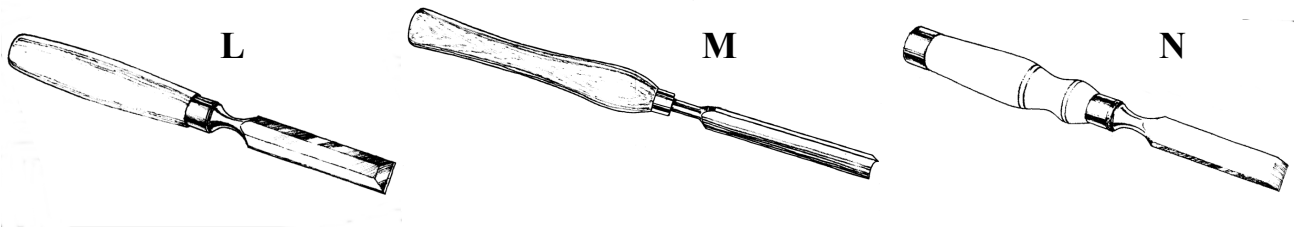
OR

B. The diagram shows a mobile phone holder manufactured from acrylic.

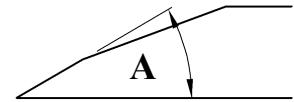
- (i) Using *neat freehand sketches*, draw the development that would be marked out on an acrylic sheet in order to manufacture this holder.
- (ii) With the aid of *neat freehand sketches*, describe *in detail* the steps you would follow to **CUT OUT** and **FORM** the holder.
- (iii) With the aid of *neat freehand sketches*, describe how you would bore the hole in the acrylic sheet.
- (iv) With the aid of *neat freehand sketches*, suggest a suitable design for a wooden base for the holder that would incorporate a storage facility for a notepad and pen.



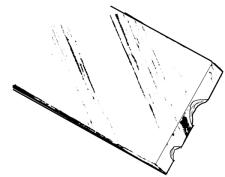
5. (i) State the correct names for the tools labelled **L**, **M** and **N**.



- (ii) What is the correct angle, **A**, for the cutting edge of a chisel when sharpening it?



- (iii) Describe, *in detail*, using notes and *neat freehand sketches*, how you would sharpen a chisel that has a badly damaged cutting edge such as that shown in the diagram.



- (iv) With the aid of notes and *neat freehand sketches*, describe *in detail* the steps you would follow to cut out the trench shown in the diagram.

