

**Junior Certificate Examination, 2002.**

**Materials Technology (Wood).**

**Monday 17 June - Morning 9.30 - 11.30**

14571

**Section A- Higher Level**

**40 marks**

Examination number.

**INSTRUCTIONS**

1. Answer any 16 questions from this section. All questions carry equal marks.
2. Answer questions in the spaces provided.
3. Write your examination number in the box provided and on all other pages used.
4. This booklet must be handed up at the end of the examination.

**FOR EXAMINERS USE**

FOR EXAMINERS USE	
SECTION A- TOTAL	
1.	
2.	
3.	
4(a) or (b).	
5.	
<b>Overall Total.</b>	

Centre number.

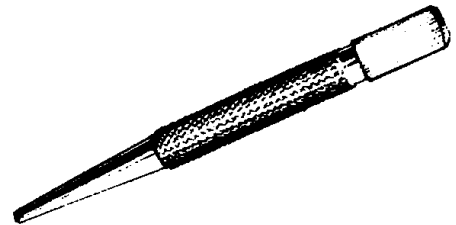
**THIS BOOKLET MUST BE  
HANDED UP**

## SECTION A - 40 MARKS

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

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

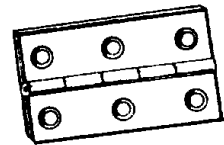
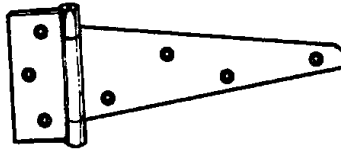
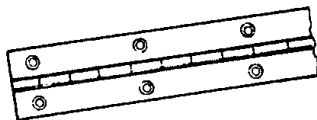
ANSWER



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

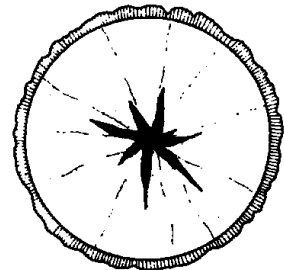
PURPOSE

2. The diagrams below show three different types of hinge. In the spaces provided, name any **TWO** of the hinges.



3. Name the timber defect shown in the diagram.

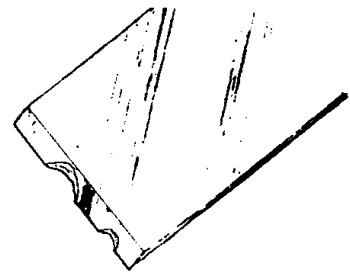
ANSWER



4. The steps involved in sharpening a badly damaged chisel are listed below. Place them in the correct order.

HONING
REMOVAL OF BURR
GRINDING

1.
2.
3.



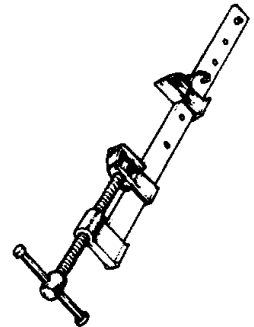
5. (i) The diagram shows a wood holding tool.

What is the correct name for this tool?

ANSWER

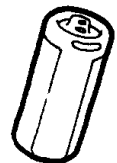
- (ii) For what purpose is this tool used?

ANSWER



6. There are two types of electrical current, Alternating Current (AC) and Direct Current (DC). Which form of current is produced by a battery?

ANSWER



7. The diagrams show the leaves and fruit of three common Irish trees. Name any **TWO** of the trees in the spaces provided.





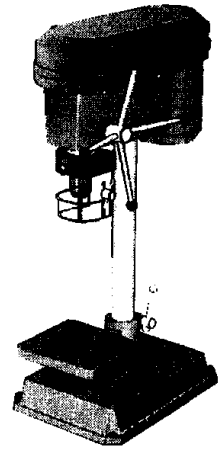


8. The diagram shows a drilling machine.

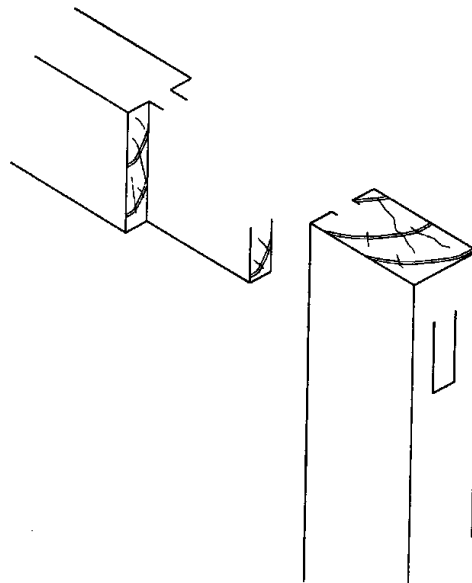
State **TWO** safety precautions that should be observed when using such a machine.

1

2



9. Complete the sketch to show a haunched mortise and tenon joint.



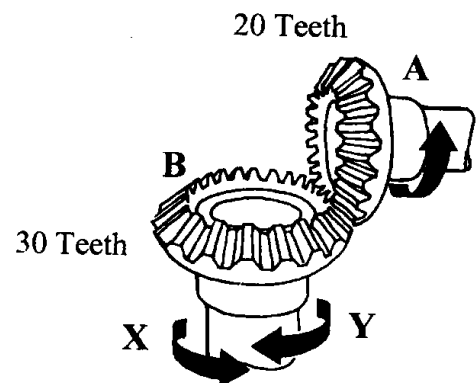
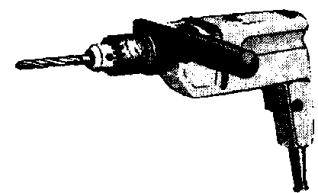
10. The diagram shows part of the gear mechanism from an electric hand drill.

(i) Gear wheel A rotates in the direction shown. Which arrow, X or Y shows the correct rotational direction of gearwheel B?

ANSWER

(ii) If A rotates at 24 revolutions per minute, at what speed will B rotate?

ANSWER



11. In the spaces provided state, for each of the following metals, whether they are *Ferrous* or *Non-ferrous*.

**CAST IRON**

**BRASS**

**COPPER**

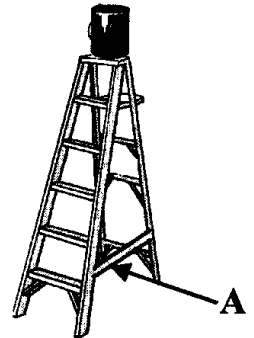
**LEAD**


12. The diagram shows a step ladder with a weight acting on it.

What is the correct name for the force acting in rail A?

**ANSWER**

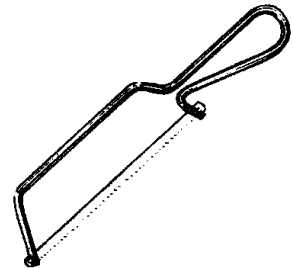
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13. (i) Name the metalworking tool shown in the diagram.

**ANSWER**

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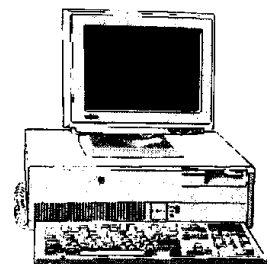
(ii) What type of material is this tool normally used to cut?

**ANSWER**

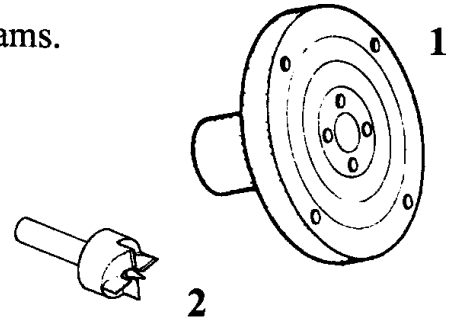
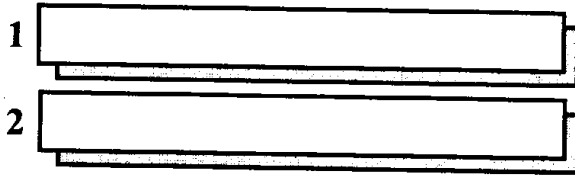
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14. **CAD** is used widely in furniture design. State one advantage of using CAD.

**ADVANTAGE**

15. Name the TWO lathe parts shown in the diagrams.



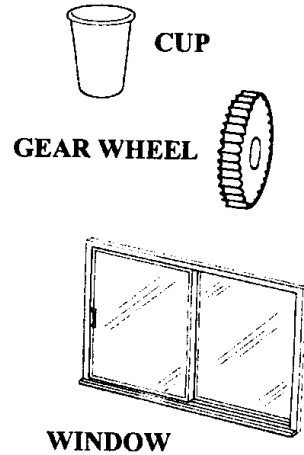
16. The diagrams show a number of items which might be manufactured from various types of plastic.

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

**NYLON**

**uPVC**

**EXPANDED POLYSTYRENE**

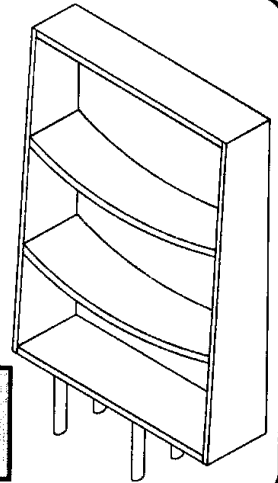
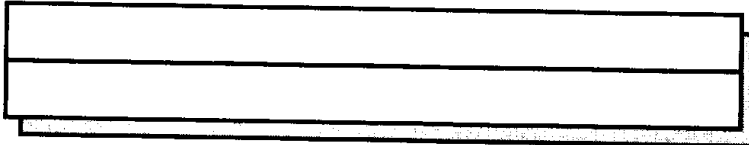


17. The diagram shows a set of book shelves. Identify ONE design defect in the book shelves and describe a possible design remedy.

**DEFECT**

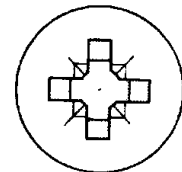


**REMEDY**



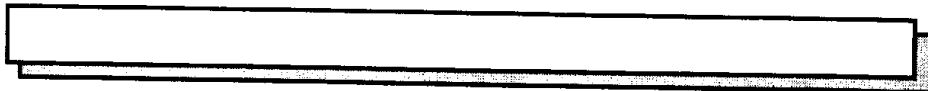
18. (i) Name the screw slot shown in the diagram.

**ANSWER**

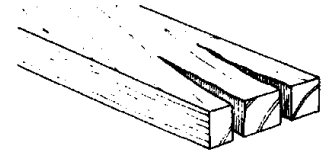


(ii) State one advantage of this type of slot.

**ADVANTAGE**



19. The end grain of a piece of timber has split during the seasoning process. Suggest one method of preventing this.



**METHOD**


20. The cut edges of chipboard are rough and unattractive.



In the spaces provided, describe and sketch a possible method of making the board's edges more attractive.

**DESCRIPTION**


**SKETCH**

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

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**Junior Certificate Examination, 2002.**

**Materials Technology (Wood).**

**Monday 17 June - Morning 9.30 - 11.30**

14115

**Section B - Higher Level  
60 marks**

**INSTRUCTIONS**

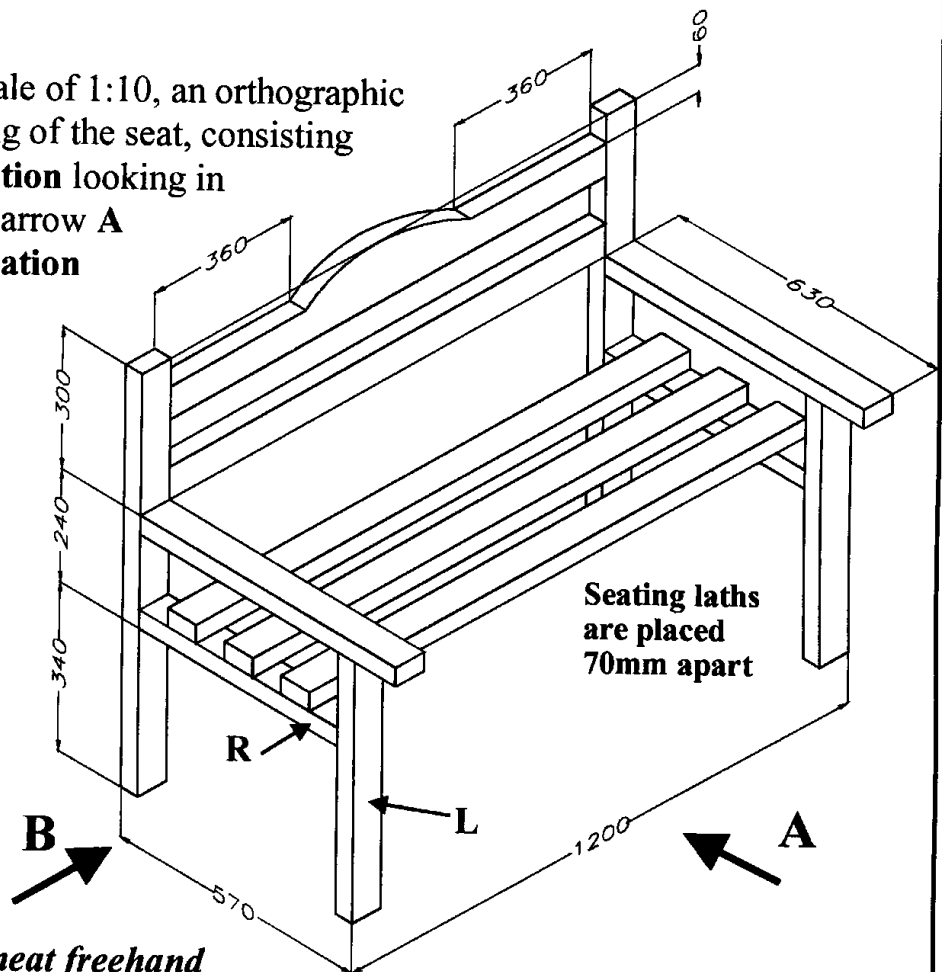
1. Answer any **THREE** questions from this section. All questions carry equal marks.
2. Where sketches are required they may be done freehand or on the graph paper provided.
3. Write your examination number on the answer book and on any other sheets used.

1. The diagram shows a dimensioned isometric drawing of a garden seat made from teak.

- (i) Prepare, to a scale of 1:10, an orthographic working drawing of the seat, consisting of a **front elevation** looking in the direction of arrow **A** and an **end elevation** looking in the direction of arrow **B**.

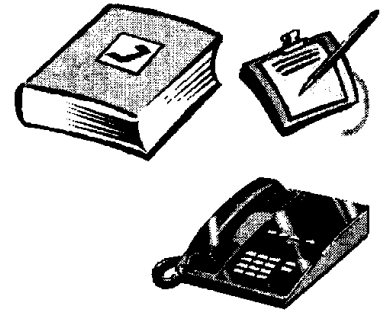
**FOUR** main dimensions must be included.

(All material is 70mm x 40mm)



- (ii) With the aid of *neat freehand sketches*, describe a suitable method of joining the leg **L** to the rail **R**.

2. (i) Two important stages in a design process are **INVESTIGATION** and **EVALUATION**. State what is meant by each term and explain its importance in designing.

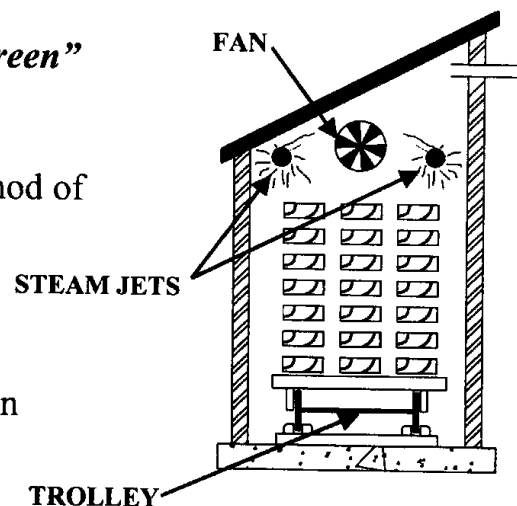


- (ii) Shown in the diagram are a telephone book, a telephone and a notepad with a pencil. Using notes and *neat freehand sketches* to communicate your ideas, suggest a possible wall mounted unit to hold these items. Your design should allow the notepad to be written on when the phone is in use.

- (iii) State **TWO** main design requirements that should be considered in the design of such a unit. Show clearly how you have considered these design requirements in your proposal.

3. The diagram shows a method of drying “green” timber.

- (i) What is the correct name for this method of drying timber?
- (ii) What are the functions of the *fan*, the *steam jets* and the *trolley* as labelled in the diagram?



- (iii) Name one other method of seasoning that you are familiar with. State **TWO** advantages and **TWO** disadvantages of that method of seasoning.
- (iv) Rainforests are a valuable natural resource. State **TWO** reasons why rainforests should be conserved. Describe **TWO** means of reducing the use of hardwoods.

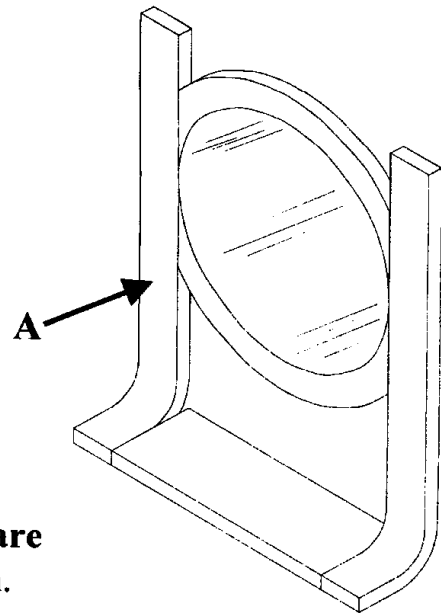
4. Answer either A or B.

(A) The diagram shows a mirror with **laminated** beech sides.

(i) With the aid of notes and *neat freehand sketches*, describe how the laminated side A would be formed.

(ii) Suggest a suitable finish for the frame. With the aid of notes and *neat freehand sketches*, describe how you would **prepare** the surface and **apply** your chosen finish.

(iii) Wood stains are often used on timber artefacts before the application of finishes. State **TWO** reasons why a stain might be used.



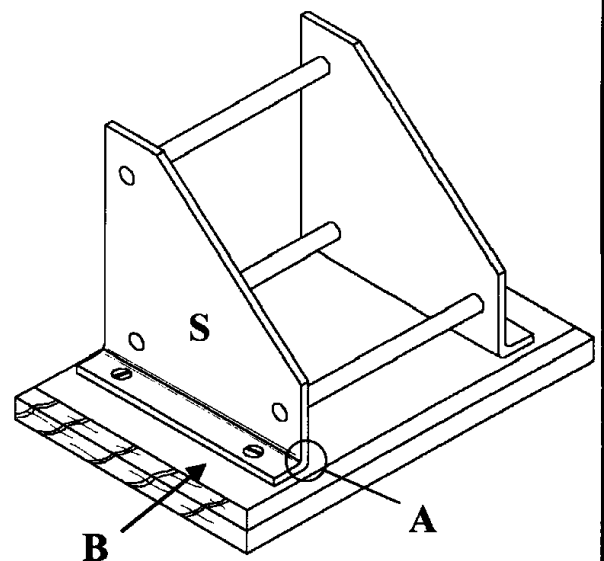
**OR**

(B) The diagram shows a CD holder with Acrylic sides and a mahogany base.

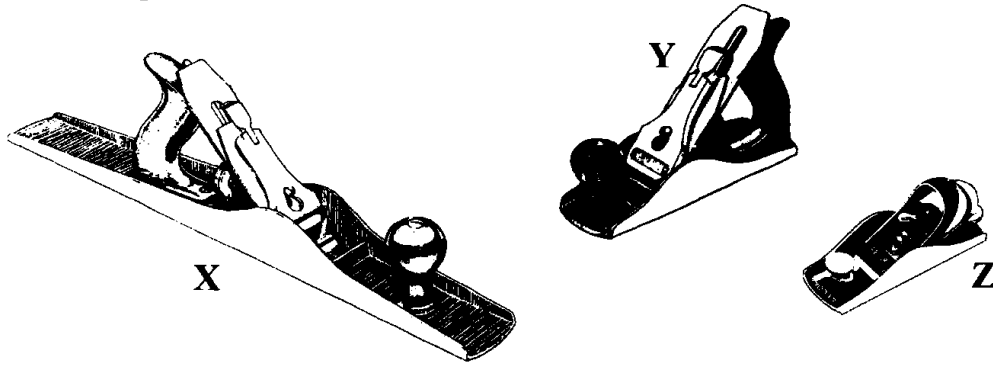
(i) With the aid of notes and *neat freehand sketches*, describe how you would form the 90 degree bend at A.

(ii) The sides are to be fixed to the **hardwood** base with **countersunk** screws. Describe, with the aid of notes and *neat freehand sketches*, how you would prepare the base **B** and the side **S** for the insertion of the screws.

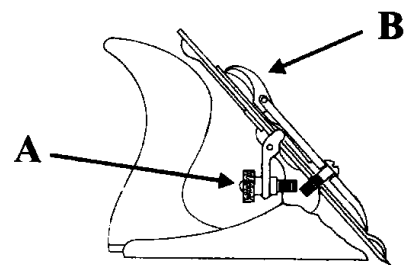
(iii) Acrylic belongs to the category of **THERMOPLASTIC** materials. Explain what thermoplastic materials are and how they differ from *thermosetting* materials.



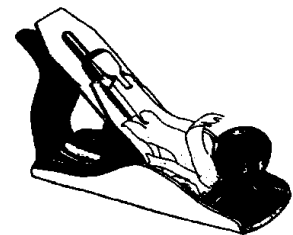
5. (i) The diagrams show three different types of plane. Name **ANY TWO** of the planes.



- (ii) The diagram on the right shows the cutting assembly of a plane. Name the parts labelled **A** and **B** and state their functions.



- (iii) The mouth of the plane shown in the diagram has become clogged. Give **TWO** reasons why this might have happened and describe what should be done to prevent it from occurring in the future.



- (iv) When planing a piece of timber, the blade hits a nail, damaging the cutting edge. Describe, with the aid of notes and *neat freehand sketches* how you would restore the sharp cutting edge on the blade.