

An Roinn Oideachais agus Eolaíochta.

S54A

Junior Certificate Examination, 2001.

Materials Technology (Wood).

Monday 18 June - Morning 9.30 - 11.30

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

SECTION A - TOTAL	
1.	
2.	
3.	
4(a) or 4(b).	
5.	
Overall Total	

Centre number.

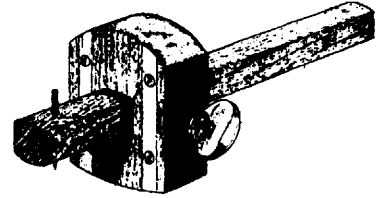
**THIS BOOKLET MUST BE
HANDED UP**

SECTION A - 40 MARKS

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

1. (i) What is the correct name for the gauge shown in the diagram?

ANSWER

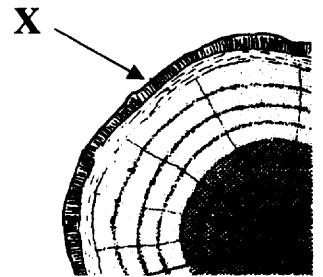


- (ii) From what hardwood is this gauge usually manufactured?

ANSWER

2. What is the function of the part of the tree labelled X in the diagram?

ANSWER

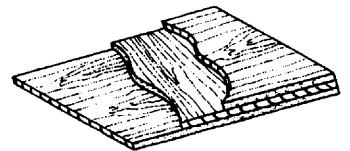


3. (i) Name the manufactured board shown in the diagram.

ANSWER

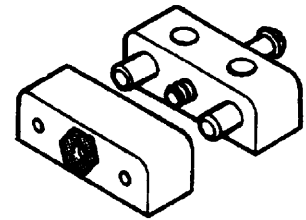
- (ii) State ONE property of this type of board.

PROPERTY



4. (i) Name the fitting shown in the diagram.

ANSWER



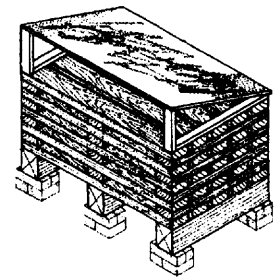
(ii) Where would this type of fitting normally be used?

ANSWER

5. The diagram shows a method of seasoning timber.

(i) What is this method of seasoning called?

ANSWER



(ii) State ONE disadvantage of this method of seasoning.

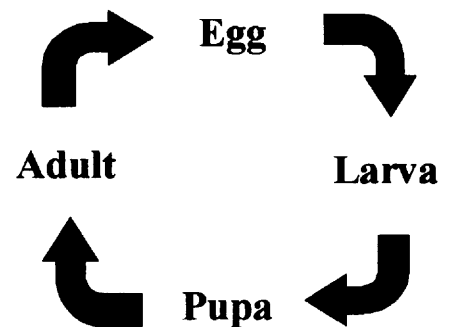
DISADVANTAGE

6. What do the letters **M. D. F** stand for?

7. The lifecycle of a wood-boring beetle comprises four stages.

At what stage in the lifecycle is the most damage caused to timber?

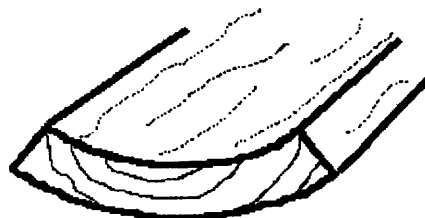
ANSWER



8. The diagram shows a defect in a plank of timber.

(i) Name the defect.

NAME



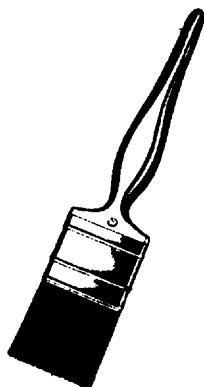
(ii) Why does this defect occur?

ANSWER

9. The steps involved in painting a timber artefact are listed. Place them in the correct order.

STEPS

Finish coat
Filling
Priming
Sanding
Undercoat



CORRECT ORDER

10. State which of the following plastics are;

(a) **THERMOPLASTIC**
 or (b) **THERMOSETTING**

PLASTICS	TYPE
POLYETHYLENE	
NYLON	
POLYESTER	
ACRYLIC	

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

ANSWER

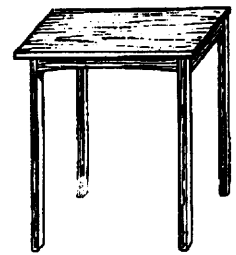
(ii) For what purpose is this tool used?

ANSWER



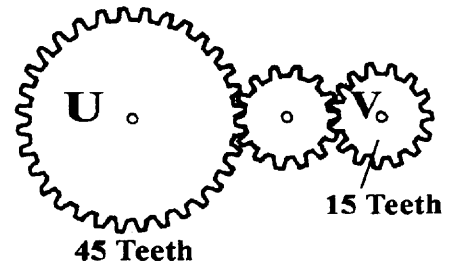
12. The diagram shows a wooden stool.
Describe ONE design defect evident in this stool

DESIGN DEFECT



13. (i) If gear-wheel U rotates anti-clockwise, in what direction will gear-wheel V rotate?

ANSWER



(ii) If gear-wheel U rotates at 240 revolutions per minute, what is the rotational speed of gear-wheel V?

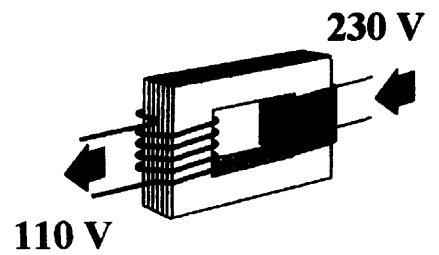
ANSWER

14. Brass is an ALLOY of two metals. Name the two metals.

METAL 1

METAL 2

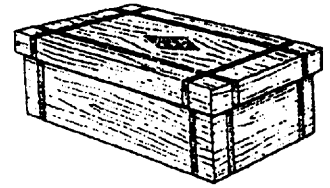
15. The diagram shows a component which, for safety reasons, is used to convert electrical voltage from 230 volts to 110 volts.
What is this component called?



ANSWER

16. The diagram shows a jewellery box which is veneered.

- (i) Suggest a suitable adhesive that could be used when applying the veneer.

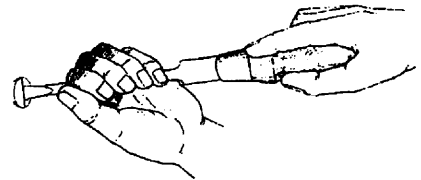


ADHESIVE

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

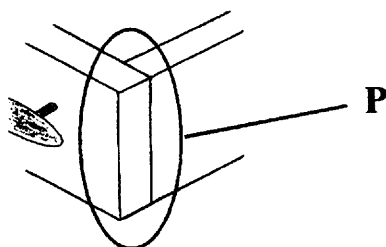
REASON

17. The diagram shows a screwdriver inserting a screw through the application of a turning force.
What is the correct name for such a turning force?

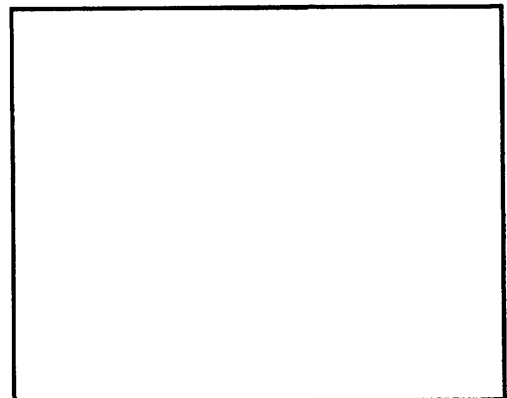


ANSWER

18. The diagram shows the corner of a mahogany dressing table drawer.
In the space provided, make a neat sketch of a joint suitable for use at P.



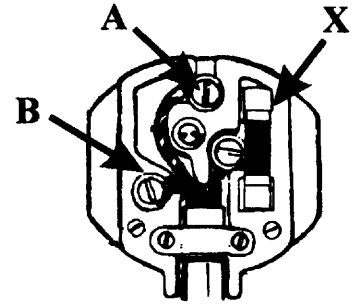
SKETCH



19. The diagram shows a plug-top.

(i) Name the plug terminals marked A and B.

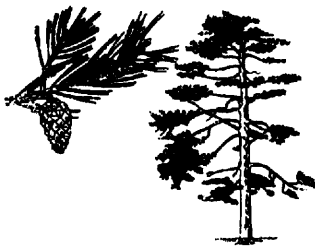
A B



(ii) What is the function of the component marked X?

ANSWER

20. These diagrams show the outline and fruit of three common Irish trees.
Name any **TWO** of the trees in the spaces provided.



(i)

(ii)

(iii)

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

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Materials Technology (Wood).

13349

Monday 18 June - Morning 9.30 - 11.30

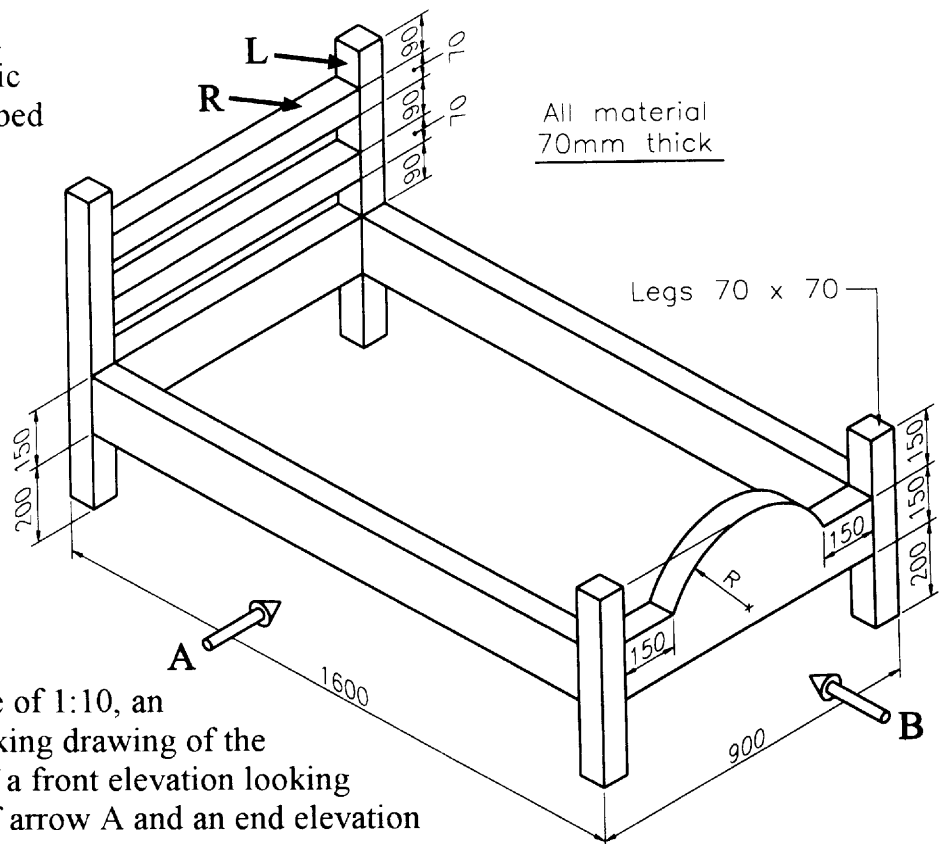
Section B - Higher Level.

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 child's bed which is made from wood.



- (i) Prepare, to a scale of 1:10, an orthographic working drawing of the bed, 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.**
- (ii) With the aid of notes and *neat freehand sketches*, describe a suitable method of joining the rail R to the leg L.

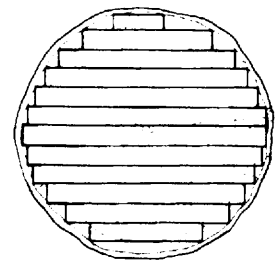
2. The diagram shows a collection of First-Aid items similar to those found in most homes. You are asked to design a storage unit for these items.



- (i) State **THREE** main design requirements that should be considered in the design of this unit.
- (ii) With the aid of *neat freehand* sketches, suggest a possible solution to this design problem. Show clearly how you have considered the design requirements you identified at (i) above.
- (iii) To accommodate packages of different heights, shelves in the unit should be adjustable. With the aid of *neat freehand* sketches, show **TWO** methods of providing for this adjustment.

3. (i) Name the two methods of timber conversion shown in the diagrams A and B.

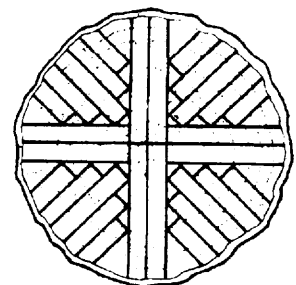
A



- (ii) State **TWO** advantages and **TWO** disadvantages of each method of conversion.

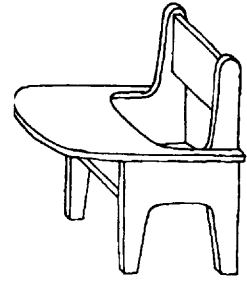
B

- (iii) **DRY ROT** can have a seriously destructive effect on timber. Describe how you should **treat** an incidence of dry rot and how you would attempt to **prevent** its reoccurrence.



4. Answer either A or B.

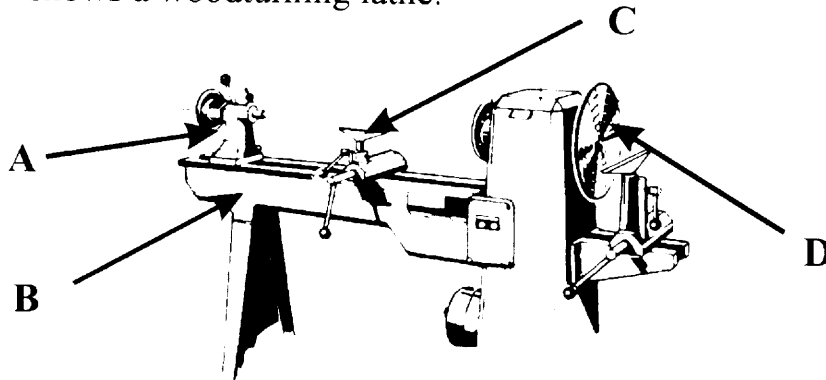
(A) The diagram shows a child's chair made from pine.



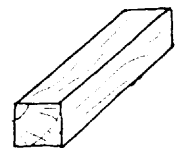
- (i) Describe how you would **prepare** the wood for a clear applied finish.
- (ii) Select a suitable finish and give **TWO** reasons for your answer.
- (iii) With the aid of *neat freehand* sketches, describe how this finish should be **applied**.
- (iv) State **TWO** safety precautions that should be observed when using oil based finishes.

OR

(B) The diagram shows a woodturning lathe.

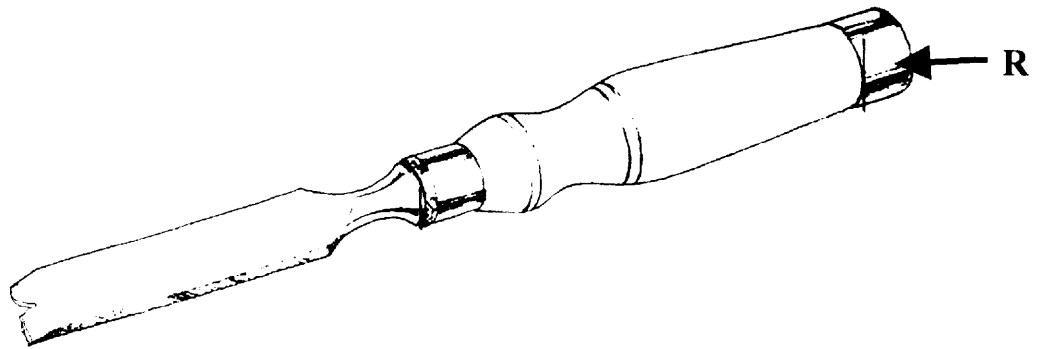


- (i) Name the parts of the lathe labelled **A, B, C,** and **D**.
- (ii) With the aid of *neat freehand* sketches, describe how a piece of timber, such as that shown, should be **prepared** and **mounted** for turning on a lathe.



- (iii) State **FOUR** safety precautions that should be observed when using a lathe.

5. The diagram shows a wood chisel, the cutting edge of which is badly damaged.



- (i) What is the correct name for this type of chisel?
- (ii) With the aid of notes and *neat freehand* sketches, describe how you would restore a sharp cutting edge.
- (iii) State **TWO** safety precautions that should be observed when using chisels
- (iv) The chisel shown in the diagram has a metal ring R around the handle. What is this ring called and what purpose does it serve?