



Junior Certificate Examination 2009

Materials Technology - Wood

Higher Level

Section A

(40 Marks)

Monday, 15 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 (b)	
5	
Total	

SECTION A - 40 MARKS

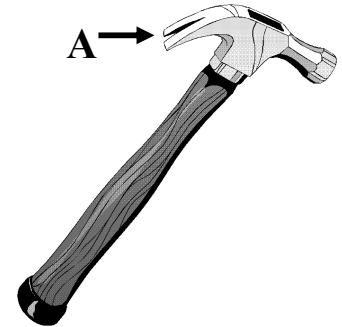
Answer any 16 questions from this section. All questions carry equal marks.

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

NAME

- (ii) State the function of the part **A** of this tool.

FUNCTION



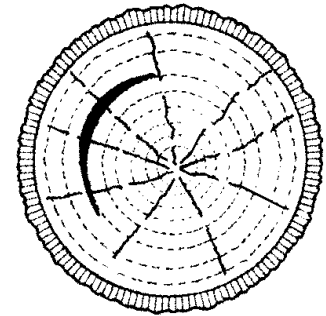
2. The diagram shows a common defect in timber.

- (i) Give the correct name for this defect.

NAME

- (ii) What is the most common cause of this defect?

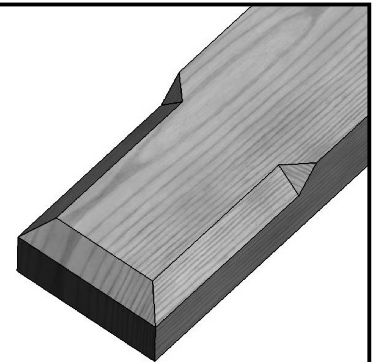
CAUSE



3. The edge of a piece of timber is finished with a common moulding as shown.

Name the moulding.

NAME



4. The diagram shows the interior of a three pin plug.

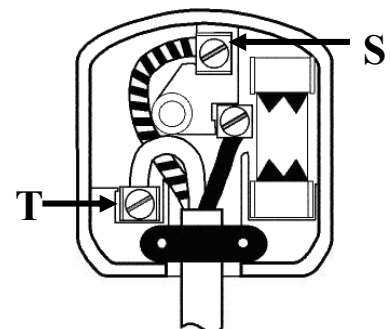
- (i) Name the plug terminals **S** and **T**.

S

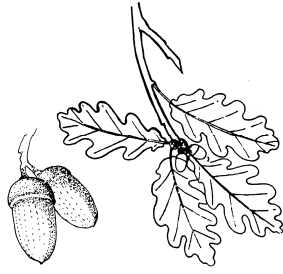
T

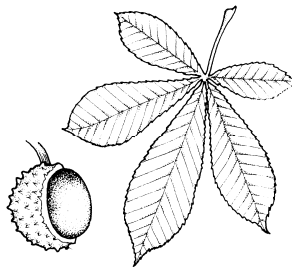
- (ii) What is the function of the **FUSE** in the plug?

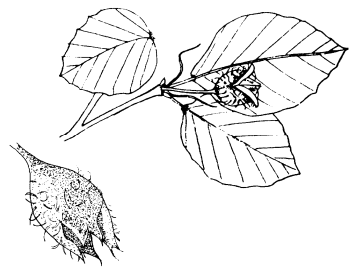
FUNCTION



5. The diagram shows the leaves and fruit of three common Irish trees. In the spaces provided, name the trees.







6. (i) Using a tick, identify the woodworking tool shown.

Skew Chisel

Gouge Chisel

Mortice Chisel



- (ii) State the correct use for this tool.

USE

7. (i) Plastics are divided into two main categories. Name the categories.

CATEGORY 1

CATEGORY 2

- (ii) Which category of plastic can be moulded and remoulded many times?

ANSWER

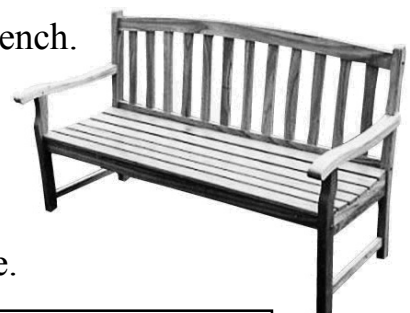


8. The diagram shows a wooden garden bench.

- (i) Suggest **TWO** suitable applied finishes for the bench.

FINISH 1

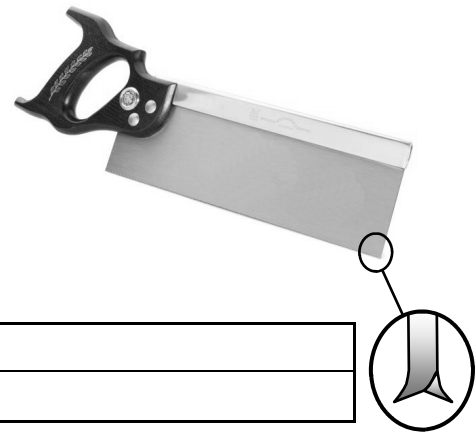
FINISH 2



- (ii) Give **ONE** reason why these finishes are suitable.

REASON

9. (i) The diagram shows a tenon saw and a close up view of its teeth. Every second tooth is bent left and right. What is this feature called?

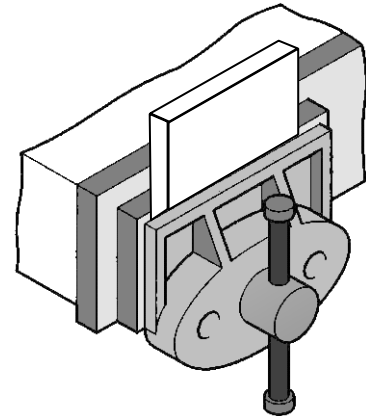


FEATURE

(ii) Why is this feature necessary?

ANSWER

10. The diagram shows a piece of wood securely held in a wood working vice. What is the correct name for the force applied to the piece of wood in the vice?



TORSION

COMPRESSION

TENSION

11. Identify, using a tick, whether the following metals are **Ferrous** or **Non Ferrous**.

Metals	Ferrous	Non Ferrous
Brass		
Copper		
Steel		
Zinc		
Cast Iron		

12. Identify **THREE** safety features that are found in M.T.W. school workshops.

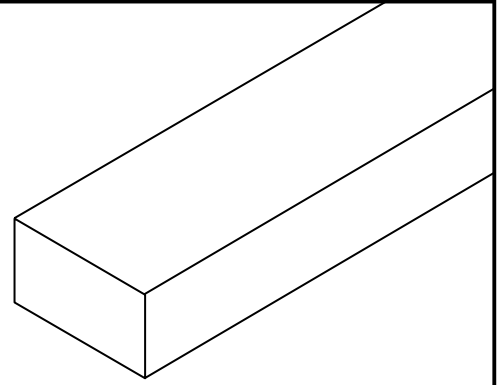
FEATURE 1

FEATURE 2

FEATURE 3

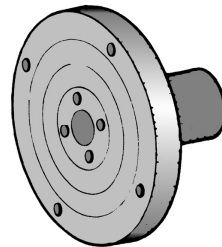
13. The diagram shows an unfinished 3D sketch.

- (i) Apply grain and shading to the sketch so that it resembles a piece of wood.
- (ii) On the sketch, show the face side and face edge using the appropriate symbols.



14. Shown are two pieces of equipment associated with woodturning.

- (i) Name the two pieces of equipment.



- (ii) State **ONE** safety precaution that should be observed when using the woodturning lathe.

PRECAUTION

15. The diagram shows a machine controlled by a computer.

State **TWO** advantages of controlling machines in this way.

1

2



- 16. (i) The diagram shows a common type of hinge. Name this hinge type.

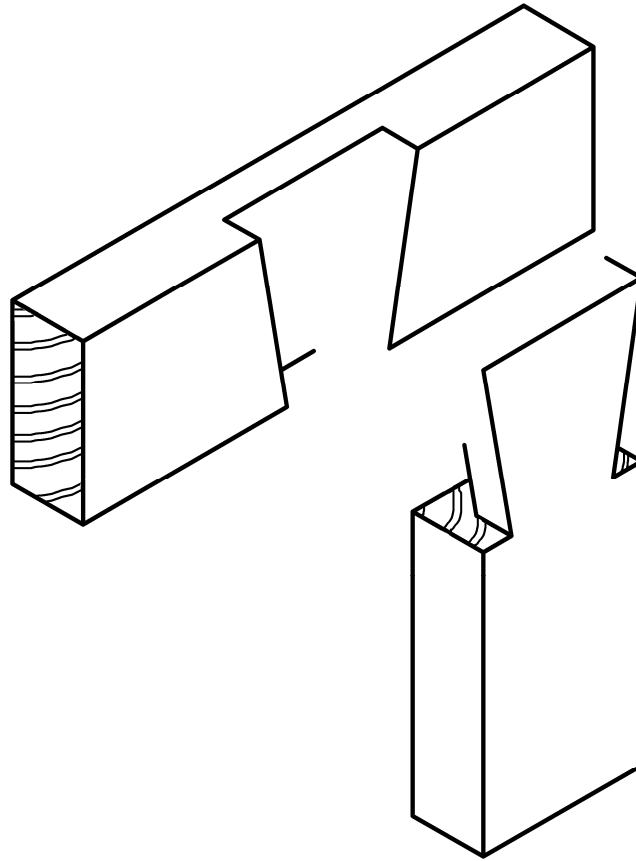
TYPE

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

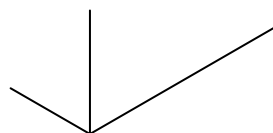
USE



17. The diagram shows an incomplete exploded isometric sketch of a **Dovetail Halving Joint**. Complete the sketch of this joint.



18. Make a 3D sketch of a **bench hook** on the given isometric axes.



19. The diagram shows a book shelf unit made from wood.

Identify **ONE** design defect in the unit and describe a possible remedy.

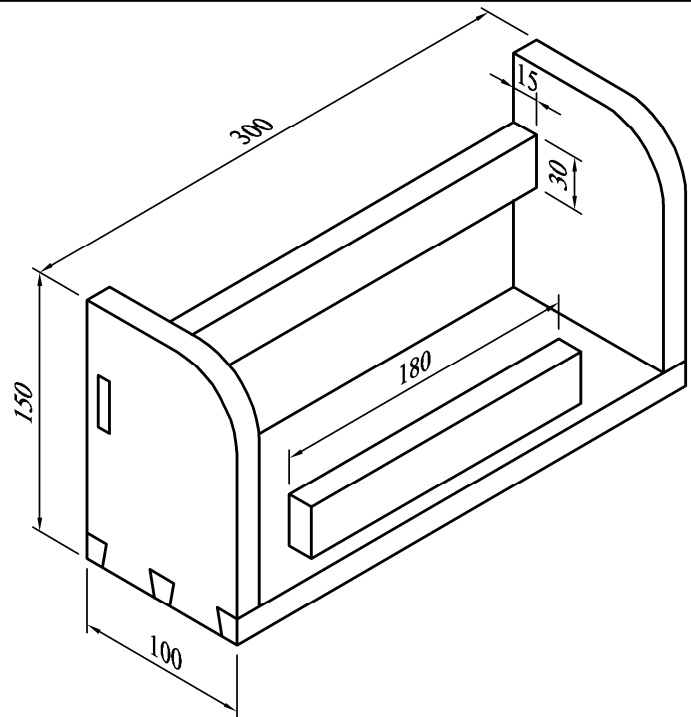
DEFECT

REMEDY



20. The diagram shows a kitchen shelf made from wood.

Complete the cutting list below for the shelf.



Description	Quantity	Length	Width	Thickness
Base	1		100	15
Sides	2	150		15
Back Rail	1	300		
Front Rail	1		30	15

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

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Junior Certificate Examination 2009

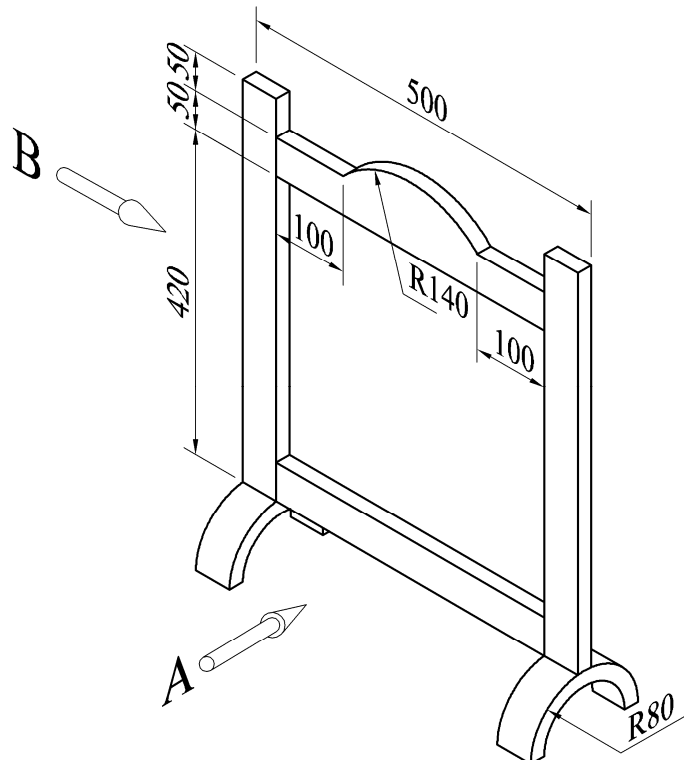
Materials Technology - Wood
Higher Level
Section B (60 Marks)

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 must 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 frame for a fire-screen.

Material dimensions
50mm x 20mm



- (i) To a scale of 1:2, draw a **front elevation** of the wooden frame 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 inserting a wooden panel into the frame.

2. (i) Two stages in a typical design process are **Investigation/Research** and **Design Ideas/Solutions**. Explain these **TWO** stages.

(ii) The diagram shows a collection of awards won by a young person. Using notes and *neat freehand sketches* to communicate your ideas, design a wall mounted unit that will display the **three** trophies and **ten** medals in an attractive manner.

(iii) State **TWO** specific design requirements that must be considered for the proposed unit.

(iv) Suggest a suitable material for the manufacture of the unit and give **TWO** reasons for your choice.

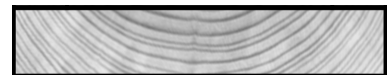


3. The diagrams show two methods of timber conversion.

(i) Name the **TWO** methods of conversion.

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

(iii) The board shown on the right is prone to **cupping**. Using a *neat freehand sketch*, show the direction of the cupping and explain why this happens.



(iv) With increasing awareness of environmental issues, there is a greater focus on the protection of existing tropical rain forests and on the conservation of hardwoods.

(a) State **TWO** reasons why we should conserve our rainforests.

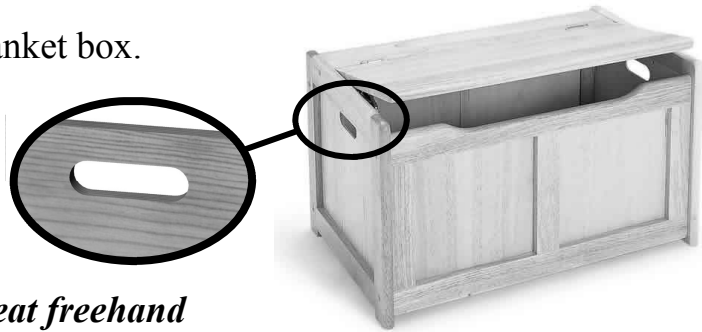
(b) Suggest **TWO** ways that we can reduce our use of hardwoods.

4. Answer 4A or 4B

A. The diagram shows a wooden blanket box.

- (i) Holes, as shown on the right, are to be cut in the side panels to allow for lifting and ventilation.

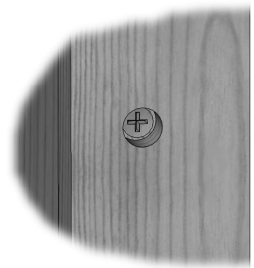
Describe, using notes and *neat freehand sketches*, how would you form these holes.



- (ii) Describe the steps involved in **preparing** this artefact for an applied finish.

- (iii) Select a suitable clear applied finish and give **TWO** reasons for your answer.

- (iv) The box is assembled using recessed screws as shown on the right. Describe, using notes and *neat freehand sketches*, **ONE** method of concealing the screws in order to improve the overall appearance.



OR

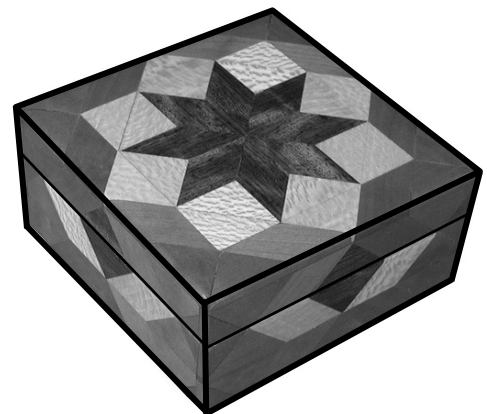
B. The diagram shows a veneered jewellery box.

- (i) With the aid of notes and *neat freehand sketches*, describe how to mark out **and** cut the veneers for the top.

- (ii) Describe, in detail, how the finished veneers would be applied to the top of the jewellery box.

- (iii) Name three types of adhesive that could be used to apply the veneers.

- (iv) Explain, with the aid of notes and a *neat freehand sketch*, what is meant by **rotary cutting** in the manufacture of veneers.



5. (i) State the correct name for each of the saws labelled **A**, **B** and **C** below.



- (ii) Select any **TWO** of the above saws and, using notes and *neat freehand sketches*, describe their appropriate use.
- (iii) State **THREE** safety precautions that should be observed when using the saw labelled **A** above and briefly outline the reason for **EACH** precaution.
- (iv) An enlarged view of the front of saw **C** is shown on the right. Explain, using notes and a *neat freehand sketch*, the function of the part labelled **X**.

