



Junior Certificate Examination, 2015

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	
5(a) or 5(b)	
Total	

SECTION A - 40 MARKS

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

1. (i) Name the woodworking tool shown.

NAME

- (ii) Give **ONE** specific use for this tool.

USE



2. Safety in the MTW classroom is important.
List **THREE** specific safety rules that must be observed in an MTW classroom.

1

2

3



3. Name **THREE** adhesives suitable for gluing wood.

1

2

3

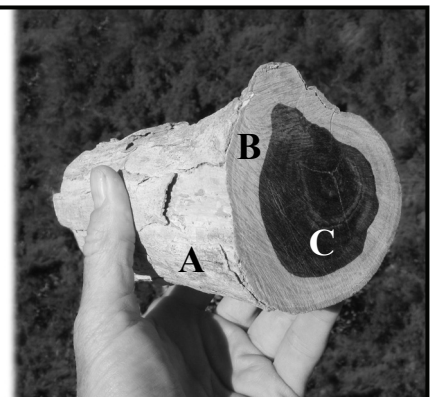


4. The diagram shows a cross section of a tree trunk.
Name the areas labelled **A**, **B** and **C**.

A

B

C



5. The diagram shows the leaves and seeds of three common Irish trees.
In the spaces provided below, name **each** tree.

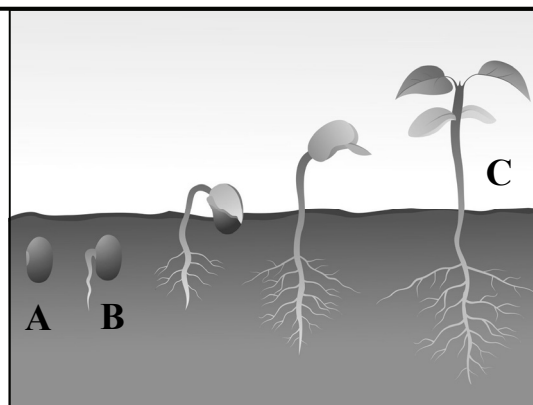


6. The diagram shows the **GERMINATION** of a seed. From the list below identify the stages labelled **A**, **B** and **C**.

Radicle ☐

Sapling ☐

Seed ☐



7. (i) Name the woodworking tool shown.

NAME

- (ii) Give an appropriate use for this tool.

USE



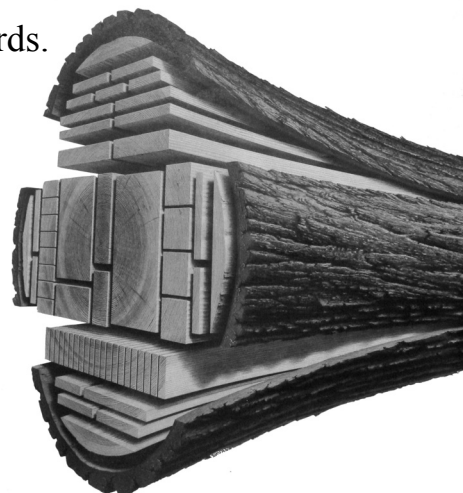
8. The diagram shows a log converted into wooden boards.

Name **THREE** methods of timber conversion.

1

2

3



9. Defects in timber are often an attractive feature.

The diagram shows a wooden bowl, turned from beech which has a fungal defect.

Name the defect.

DEFECT



10. (i) Name the tool shown.

NAME

- (ii) State an appropriate use for this tool.

USE



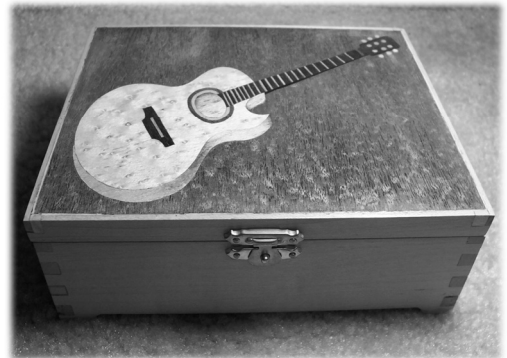
11. (i) Veneers are often used to create decorative embellishments on wooden artefacts, as shown.

What is this craft technique called?

NAME

- (ii) Name a suitable adhesive for applying veneers to wood.

GLUE



12. Preservatives prolong the lifespan of external wooden products.

Name **THREE** methods of applying preservatives to wood which is to be used externally.

1

2

3



13. The graphic shows a variety of manufactured boards.

Name **FIVE** types of manufactured board.

1	
2	
3	
4	
5	

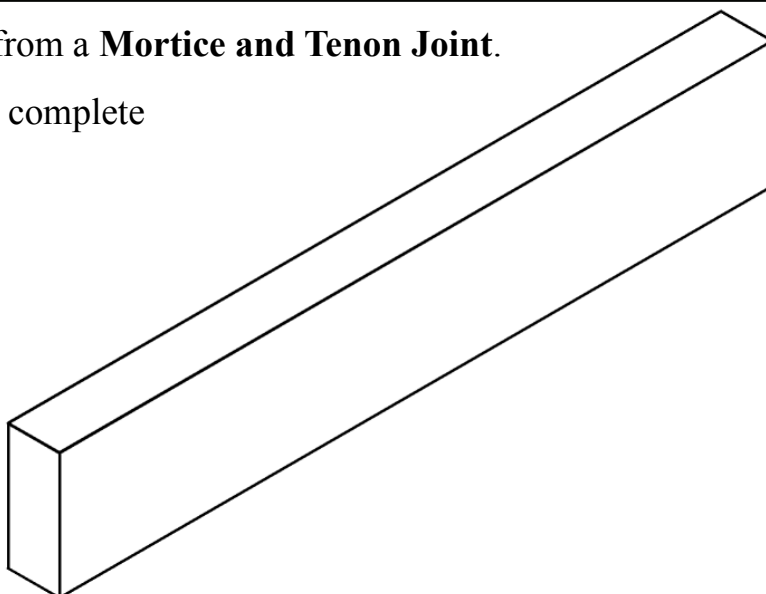
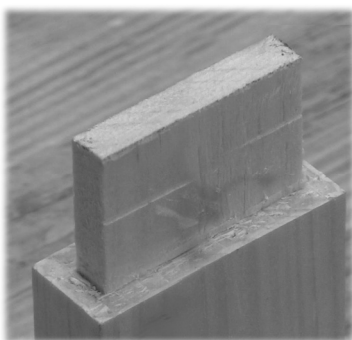


14. Name the **THREE** items shown, which are associated with woodturning.



15. The graphic shows the tenon from a **Mortice and Tenon Joint**.

Sketch the marking out of the complete *Mortice and Tenon* joint on the diagram on the right.



16. The letters **EMC** are associated with drying of timber.

What do the letters EMC stand for?

E	M	C
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17. The diagram shows a student using a cordless drill to insert a screw.

- (i) What is the correct name for the turning force being applied by the drill to the screw?

FORCE

- (ii) Name **ONE** other type of force.

FORCE



18. Metal is often used with wood as a design feature in jewellery making.

Identify, using a tick (✓), whether the following metals are **Ferrous** or **Non Ferrous**.

Metals	Ferrous	Non Ferrous
Aluminium		
Tin		
Lead		
Mild Steel		
Silver		



19. (i) Name the woodworking machine shown.

NAME

- (ii) State **TWO** specific safety precautions that should be observed when using this machine.

PRECAUTION 1

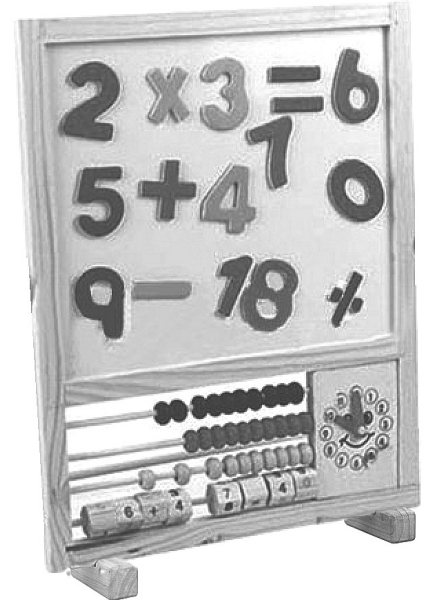
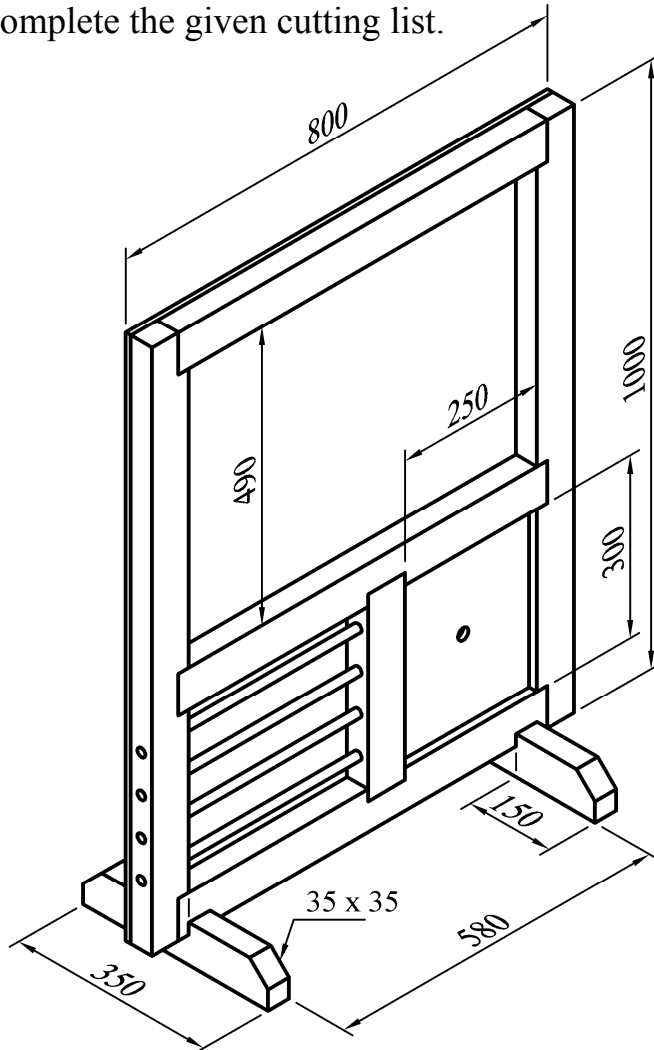
PRECAUTION 2



20. The image on the right below shows a child's whiteboard which has an integrated abacus and a clock. A dimensioned drawing of the artefact is also shown below.

All frame material is 70mm × 40mm and all housing joints are 20mm deep.

Complete the given cutting list.



Description	Quantity	Length	Width	Thickness
Sides	2	1000		40
Cross Rails	3		70	40
Middle Upright	1		70	40
Whiteboard Backing	3	1000	800	10
Feet	2		70	40
Clock Face	1	300	250	10
	4	480	Ø15	

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

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Junior Certificate Examination, 2015

Materials Technology (Wood)
Higher Level
Section B (60 marks)

Monday, 15 June
Afternoon, 2:00 - 4:00

Instructions

- (a) Answer **three** questions. All questions carry equal marks.
- (b) You may answer either question 5A **or** question 5B but **not both** questions.
- (c) Where sketches are required they may be done freehand or on the graph paper provided.
- (d) Write your examination number on the answerbook and on all other pages used.
- (e) **Question 1** from this section must be answered on drawing paper.
All other questions should be answered on the answerbook supplied.

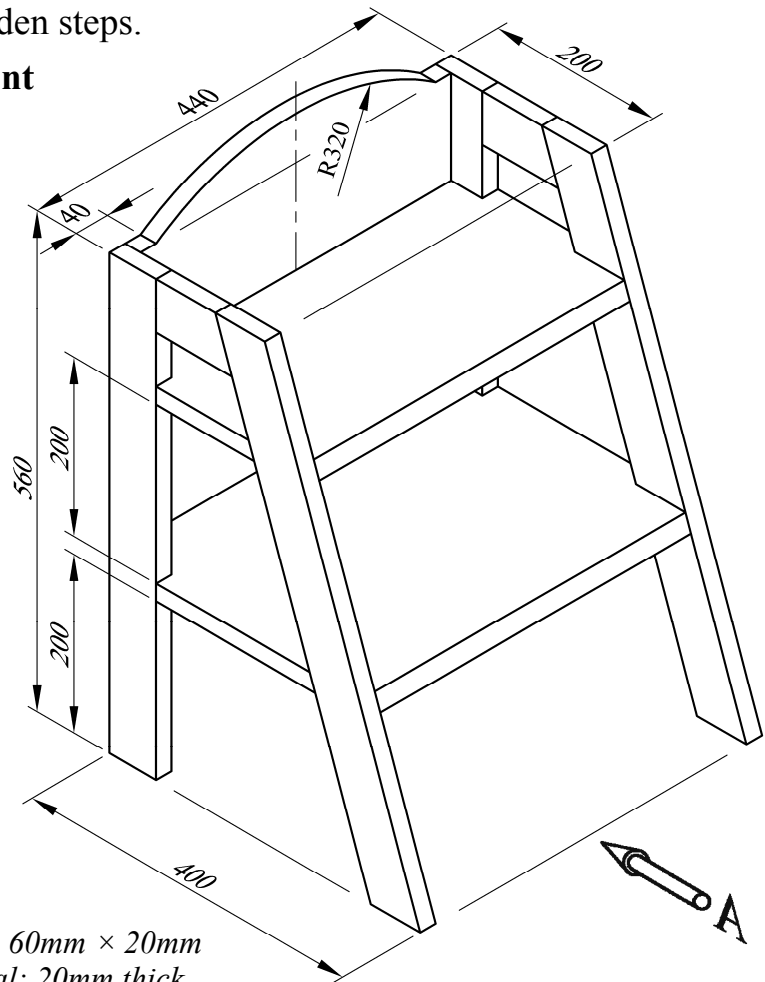
1. The diagram shows a set of wooden steps.

- (i) To a scale of 1:4, draw a **front elevation** of the steps in the direction of arrow A.
- (ii) Project a **plan** from the elevation.
- (iii) Project an **end view**.

Note: Hidden detail is not required.



Frame material: 60mm × 20mm
All other material: 20mm thick



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

- (ii) The image shows a collection of DIY tools and equipment which can be found in many homes.

Using notes and *neat freehand sketches* to communicate your ideas, design a suitable portable wooden unit to store such items.



- (iii) State **TWO** specific design requirements that must be considered in the design of the proposed unit.
- (iv) Describe, using notes and *neat freehand sketches*, how you incorporated these **TWO** requirements into your final design solution.

3. Wood is generally seasoned before use in order to reduce its moisture content. The diagram shows one method of seasoning wood.

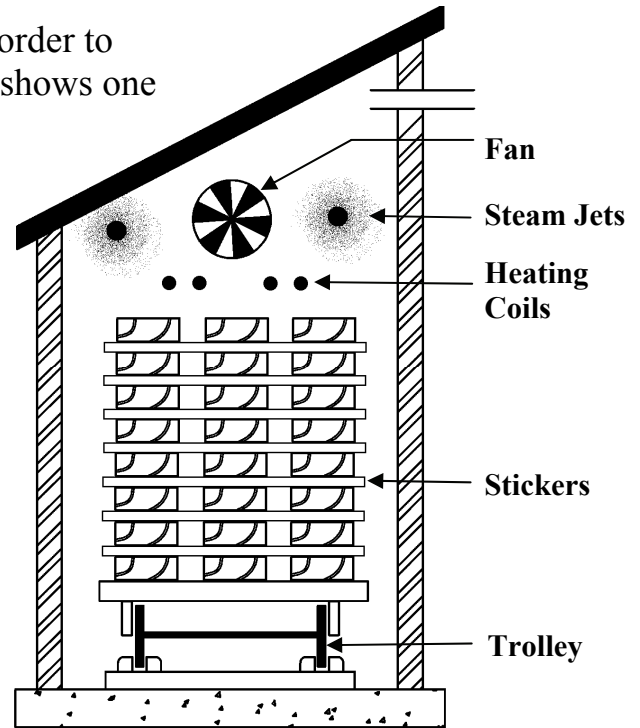
- (i) What is the correct name for this method of seasoning?
- (ii) State the **FUNCTION** of **each** of the following parts as shown in the diagram:

- **Fan**
- **Steam Jets**
- **Heating Coils**
- **Stickers**
- **Trolley**

- (iii) Name **ONE** other method of seasoning timber.

State **TWO** advantages and **TWO** disadvantages of this second method of seasoning. Make specific reference to the moisture content achievable by **each** method.

- (iv) Using notes and *neat freehand sketches*, identify **THREE** seasoning related defects. Describe how **each** defect can be prevented.



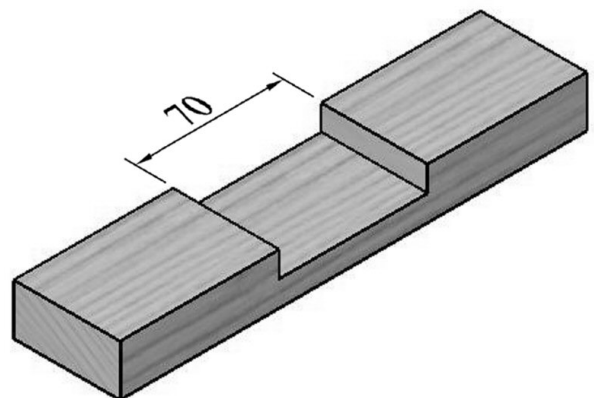
4. The image on the right shows four saw types.



- (i) Give the correct name for each of the saws, labelled **A**, **B**, **C**, and **D**, and state where each saw would be used.
- (ii) In most saws, the teeth face away from the handle, but in saw **C**, the teeth generally face towards the handle. Explain why this is so.

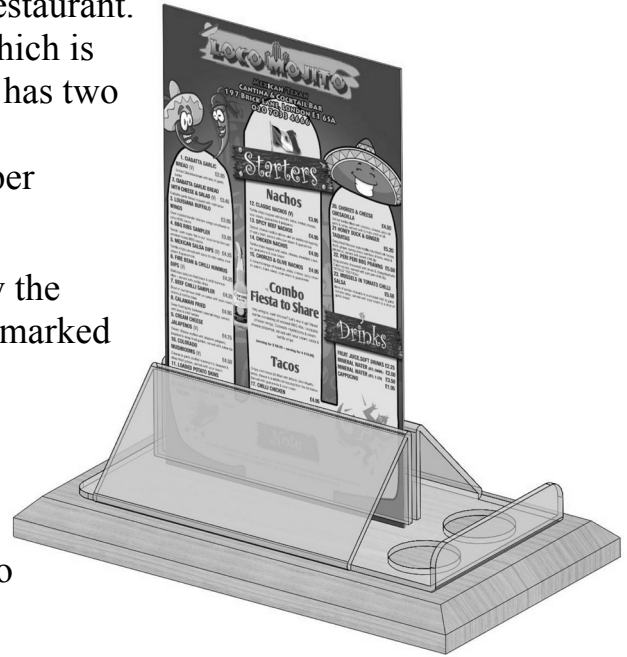
- (iii) Using notes and *neat freehand sketches*, describe the steps involved in replacing a broken blade in saw **C**.

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



5. Answer 5A or 5B

5A. The image shows a menu holder for a restaurant. The holder is made from bent acrylic which is attached to a wooden base. The acrylic has two circular holes at one end, as shown, to accommodate the bases of salt and pepper containers.



- (i) Using a **neat freehand sketch**, draw the surface development that would be marked out on the acrylic sheet in order to manufacture the holder.
- (ii) With the aid of notes and **neat freehand sketches**, describe **in detail**, the steps you would follow to **CUT OUT** and **FORM** the holder.
- (iii) With the aid of notes and **neat freehand sketches**, describe how you would form the two circular holes in the acrylic sheet.
- (iv) Describe, with the aid of notes and **neat freehand sketches**, the steps involved in fixing the acrylic holder to the wooden base, using four screws.

OR

5B. Wood is frequently shaped in a variety of ways, such as turning, carving and laminating.

- (i) The diagrams on the right show three different carving methods.

Name **EACH** method.



A



B



C

- (ii) Carving usually requires the transfer of a design or pattern from a piece of paper onto a piece of wood. With the aid of notes and **neat freehand sketches**, describe how this could be done.
- (iii) In the student project on the right, the four legs are laminated. Give **TWO** reasons why lamination is used instead of cutting the curved legs from solid wood.
- (iv) With the aid of notes and **neat freehand sketches**, describe the steps involved in producing **ONE** of the laminated legs.

