



*Junior Certificate Examination, 2013*

***Materials Technology - Wood***  
***Higher Level***  
***Section A*** (40 marks)

***Monday, 17 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)	
<b>Total</b>	

## SECTION A - 40 MARKS

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

1. (i) Using a tick (✓) identify the power tool shown from the list below.

Orbital Sander ☐ Router ☐ Jig Saw ☐

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

USE



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

ANSWER

- (ii) What is this tool commonly used for?

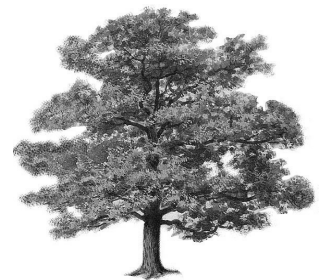
USE



3. Using a tick (✓) identify whether the following trees are **Softwoods** or **Hardwoods**.



Softwood	Trees	Hardwood
	Ash	
	Norway Spruce	
	Sycamore	
	Cherry	
	Scots Pine	



4. In the manufacture of exterior grade plywood, what do the letters **WBP** stand for?

W

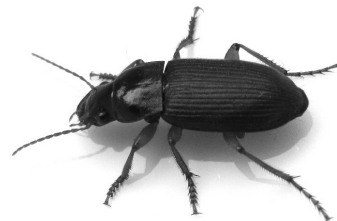
B

P



5. The four stages in the lifecycle of a common furniture beetle (woodworm) are **Adult**, **Larva**, **Egg** and **Pupa**.

List these stages in the correct order below starting with the egg.



1. **Egg**

2.

3.

4.

6. The diagram shows bevel gears which are commonly used in woodworking tools.

- (i) If the small gear rotates clockwise as shown, indicate using a tick (✓), the direction in which the large gear will rotate.

☐

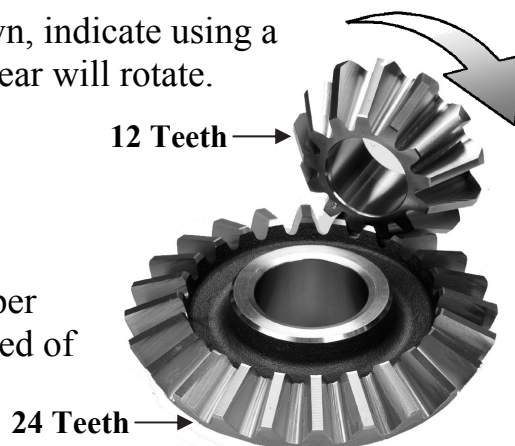
**CLOCKWISE**

☐

**ANTI-CLOCKWISE**

- (ii) If the small gear rotates at 35 revolutions per minute (R.P.M.), what is the rotational speed of the large gear?

**SPEED**  **R.P.M.**



7. The diagram shows a cross-section of a tree.

Name the areas labelled **A** and **B**.

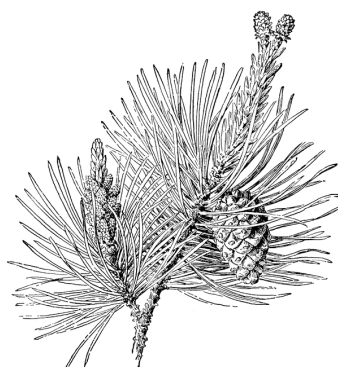
**AREA A**

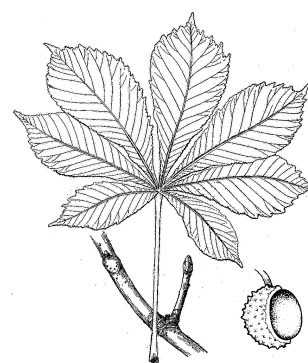
**AREA B**



8. The diagrams show the leaves of three common Irish trees.  
In the spaces provided, name the trees.







9. (i) Name the **TWO** main categories into which **Plastics** can be divided.

**CATEGORY 1**

**CATEGORY 2**

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

**ANSWER**



10. (i) The diagram shows a wood-holding device.  
What is the correct name for this device?

**ANSWER**

- (ii) What is this device commonly used for?

**USE**



11. The diagram shows the cutting edge of a chisel being sharpened on an oilstone.

The steps involved in sharpening are  
**Oil Honing, Burr Removal and Grinding.**

List these stages in the correct order below.



1.

2.

3.

12. (i) Metals can be divided into **TWO** main categories. Name these categories.

**CATEGORY 1**

**CATEGORY 2**

- (ii) What is the main difference between the two categories?

**DIFFERENCE**

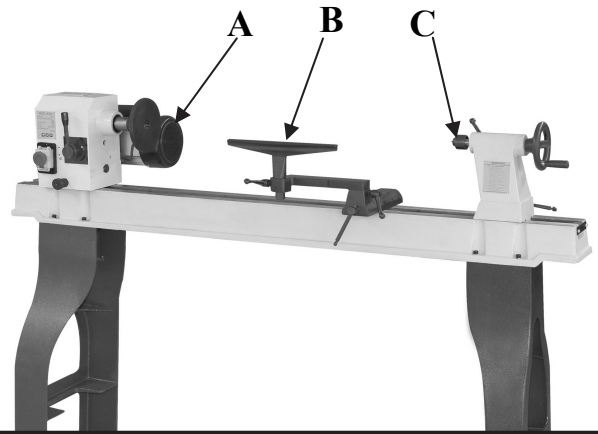



13. Name the parts of the woodturning lathe labelled **A**, **B** and **C** in the diagram.

**A**

**B**

**C**



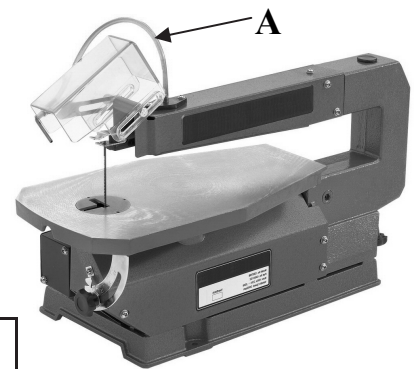
14. (i) Name the woodworking machine shown in the diagram.

**NAME**

(ii) What is the function of the plastic tubing, labelled **A** in the diagram?

**FUNCTION**



15. (i) When converting timber, the natural edge is often left on boards to give a more rustic look to pieces of furniture. What is the correct name for this feature?

**NAME**

(ii) Name **ONE** method of timber conversion.

**METHOD**



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

**NAME**

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

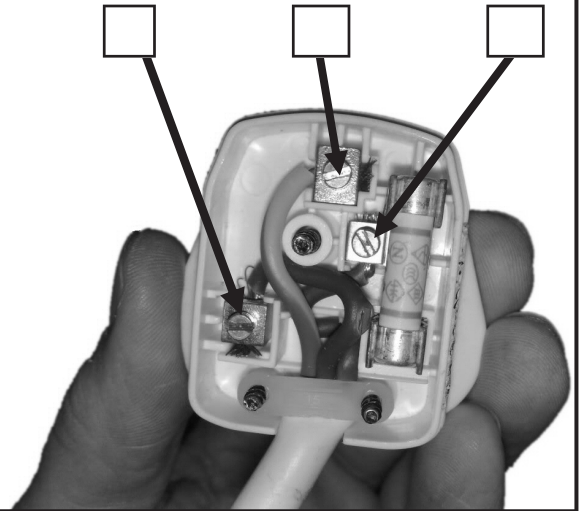
**USE**



17. The diagram shows the wiring terminals of a three-pin plug.

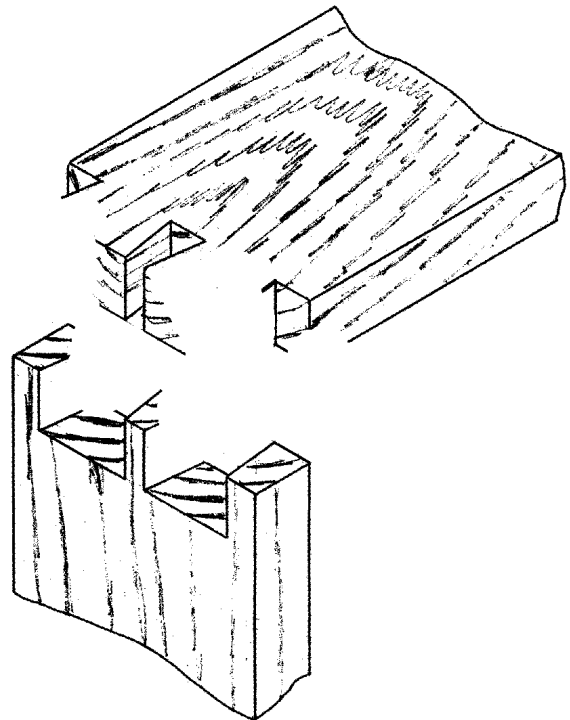
- (i) Indicate, using a tick (✓), the **NEUTRAL** terminal.
- (ii) State the correct **COLOUR CODING** for the wire connected to the **neutral** terminal.

**COLOUR CODING**



18. The diagram shows an incomplete exploded isometric sketch of a **BOX DOVETAIL JOINT**.

Complete the sketch of the joint.



19. The term **DRY ROT** refers to decay caused by certain species of fungi which attack wood.

- (i) Name any such species of fungus.

**FUNGUS**

- (ii) List **THREE** conditions necessary for **dry rot** to develop.

1.

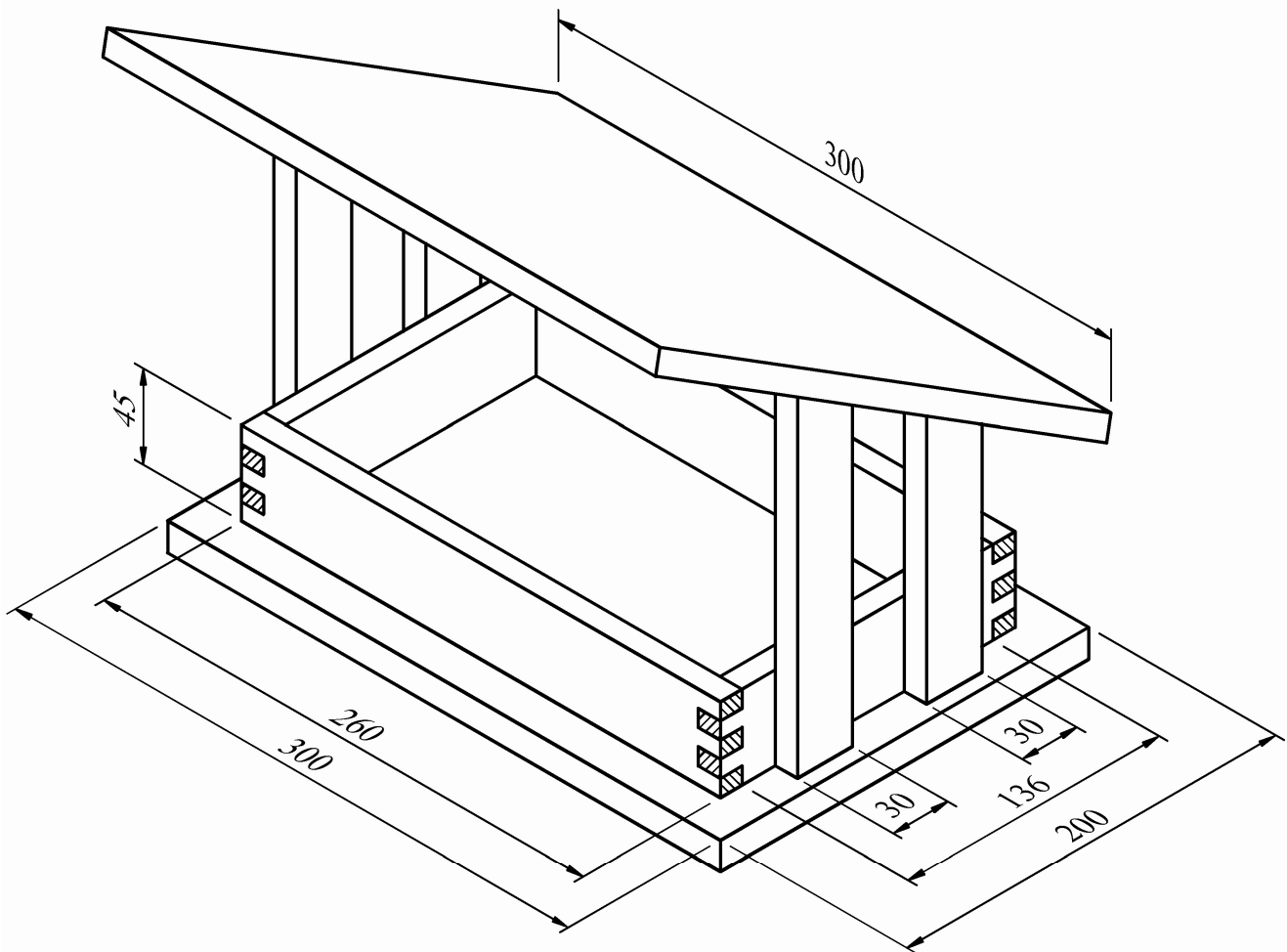
2.

3.





20. The dimensioned drawing below shows a Bird Feeder Table made from oak. Complete the cutting list below. *(All material is 12mm thick.)*



Description	Quantity	Length	Width	Thickness
Base	1	300		12
Long Horizontal Rail	2	260		12
Short Horizontal Rail	2		45	12
Long Upright	2	180	30	12
Short Upright		150	30	12
Roof	1		240	12

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

Blank Page





*Junior Certificate Examination, 2013*

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

***Monday, 17 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** of them.
- (c) Where sketches are required they may be done freehand or on the graph paper provided.
- (d) Write your examination number on the answer book 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 answer book supplied.

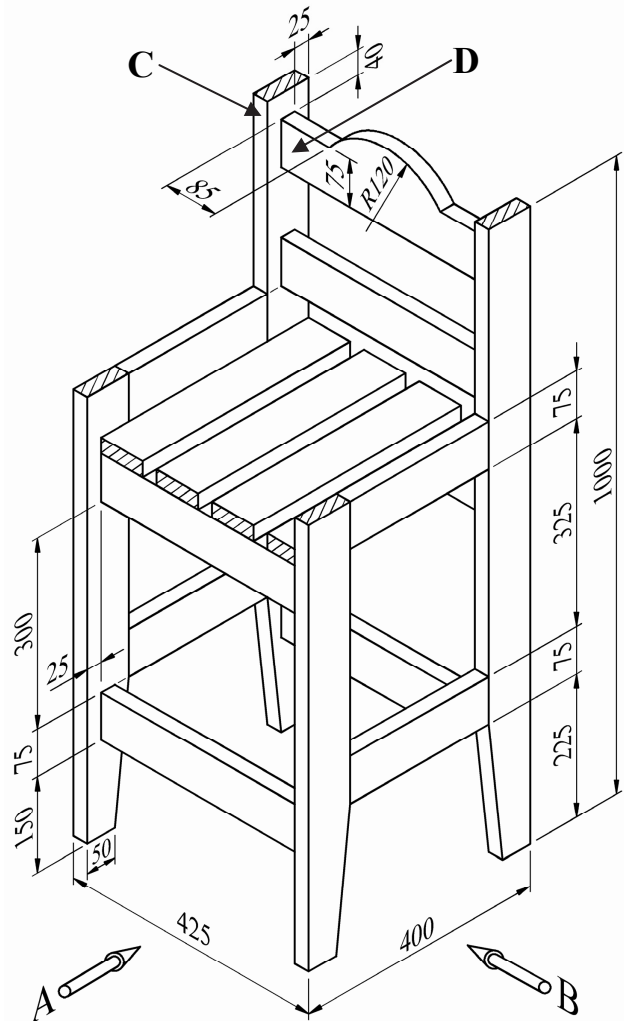
1. The diagram shows a dimensioned isometric drawing of a counter stool made from wood.

- (i) To a scale of 1:5, draw a **front elevation** of the stool 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 jointing the members **C** and **D**.

All Material: 75mm x 25mm  
(Unless otherwise stated)



2. (i) Two stages in a typical design process are **Analysis of Brief** and **Evaluation**. Explain these **TWO** stages.

- (ii) The diagram shows a collection of artefacts, including vases, trophies, photo frames, lamps and ornaments that are to be found in many houses.

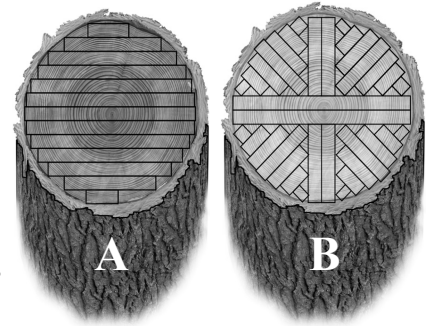
Using notes and *neat freehand sketches* to communicate your ideas, design a suitable wooden unit to display approximately twelve items of this nature. The unit should be free standing on a floor.



- (iii) Describe, using notes and *neat freehand sketches*, **ONE** wood joint that would be necessary in the manufacture of your proposed unit.
- (iv) Suggest a suitable wood for the manufacture of the unit and give **TWO** reasons for your choice.

3. The diagram shows two methods of timber conversion.

- (i) Name the **TWO** conversion methods and give **TWO** advantages and **TWO** disadvantages of **each** method.
- (ii) Name and describe, using a *neat freehand sketch*, **ONE** other conversion method.
- (iii) Freshly converted timber generally needs to be seasoned before use. Name **TWO** methods of seasoning and compare them under the following headings:



**Cost**

**Duration**

**Moisture Content**



- (iv) When timber is being seasoned it is important to allow air circulation around the boards. Make a *neat freehand sketch* to show how this is achieved.

4. (i) State the correct name for the specialist tools labelled X, Y and Z below.



**X**



**Y**



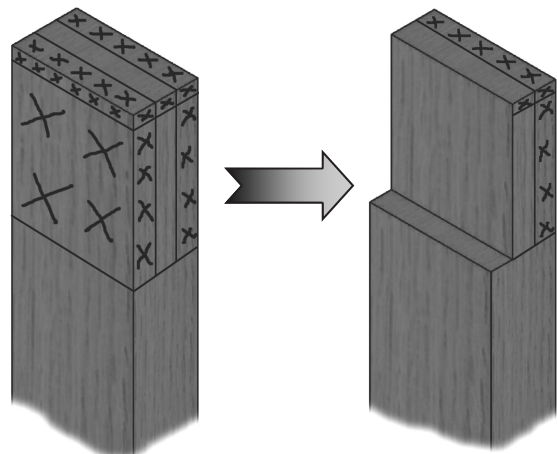
**Z**

- (ii) With the aid notes and *neat freehand sketches*, describe how the tool labelled X would be **set** and **used**.

- (iii) Diagram A shows the marking out of a tenon on a piece of wood.

Diagram B shows the piece after one face of the tenon has been removed.

With the aid of notes and *neat freehand sketches*, describe the correct steps involved in using a tenon saw to remove the face as shown.



**A**

**B**

**5. Answer 5A or 5B**

**5A.** The diagram shows a wooden rocking toy for a child.

- (i) Select an appropriate clear finish for this toy and give **TWO** reasons in support of your answer.
- (ii) The circular discs on the sides are designed to resemble a snail's shell. With the aid of notes and *neat freehand sketches* describe *in detail*, the steps you would follow to **prepare** one of these wooden discs for a clear applied finish.
- (iii) With the aid of *neat freehand sketches*, describe, *in detail* the steps you would follow in the **application** of your chosen finish to one of the discs.
- (iv) State **TWO** specific safety precautions that should be observed when using applied finishes.



**OR**

**5B.** The diagram shows a dolphin which has been carved from solid wood.

- (i) (a) Name this method of carving.  
(b) Name **TWO** other methods of carving.

- (ii) With the aid of notes and *neat freehand sketches*, describe how you would mark out and carve the dolphin from a block of hardwood, as shown.

- (iii) Name **THREE** solid woods suitable for carving and give **ONE** reason for each choice.

