



*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.*

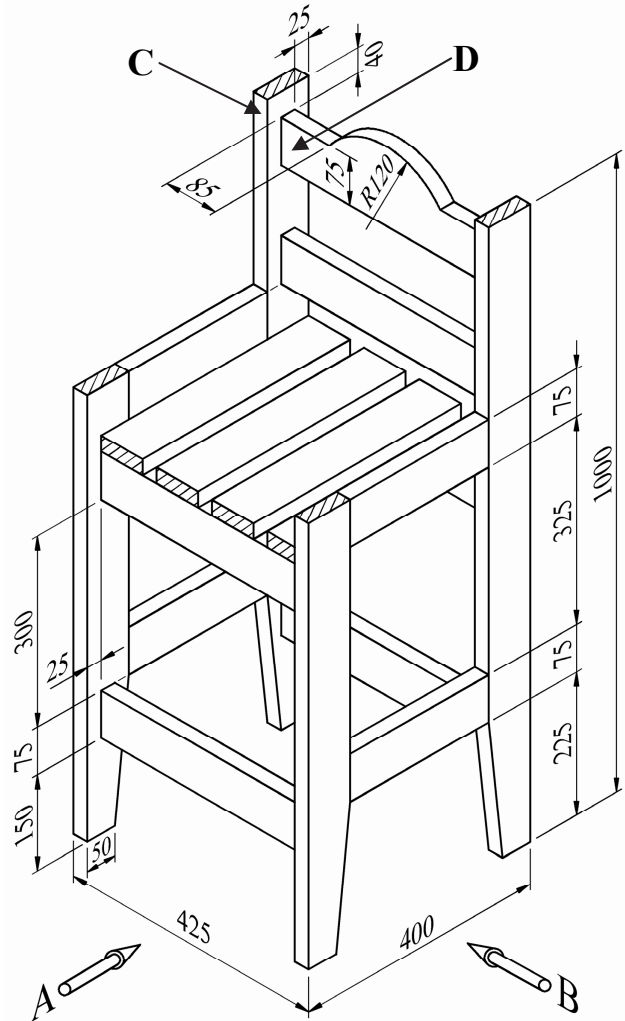
1. The diagram shows a dimensioned isometric drawing of a counter stool made from wood.

- (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:

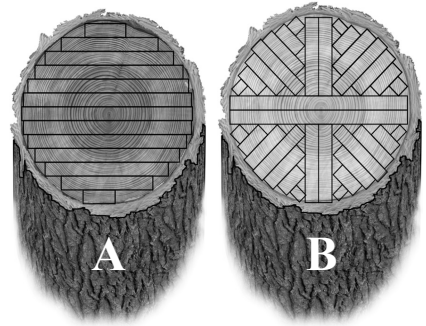
**Cost**

**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**



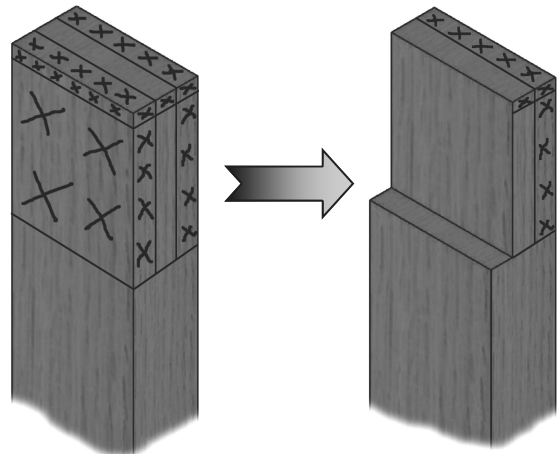
**Z**

(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.

