

Pre-Junior Certificate Examination, 2015

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

Time: 2 hours

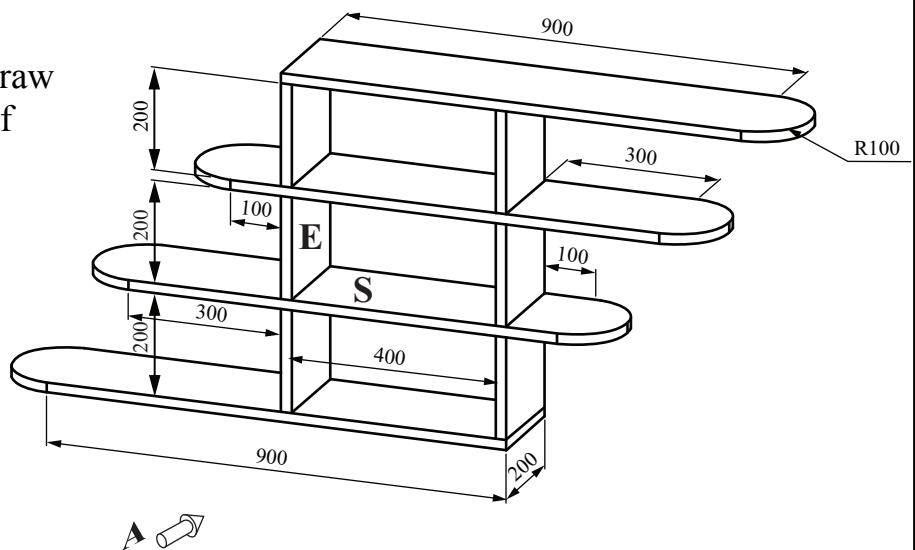
Instructions

- (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 graph paper.*
- (d) Write your name, your school's name and your teacher's name 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 your answerbook.*

1. The diagram shows a dimensioned isometric drawing of a wall mounted shelving unit.

- (i) To a scale of 1:5, draw a **front elevation** of the shelving unit looking in the direction of arrow **A** and project a **plan** from this elevation.

Include **FOUR** main dimensions on your drawing.



- (ii) With the aid of notes and *neat freehand sketches*, describe a suitable method of jointing the side **E** to the shelf **S**.

All material: 20mm thick
(Unless otherwise stated).

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

- (ii) The diagrams show a selection of items found on many study desks.

Using notes and *neat freehand sketches* to communicate your ideas, design a wooden, visually attractive, portable unit that will store these items in a safe and easy to access manner.

- (iii) Describe, using notes and *neat freehand sketches*, how you specifically incorporated the following requirements into your final design solution:

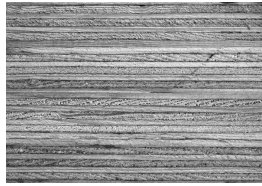
- (a) The portability of the unit;
(b) The ease of access to the items.



3. (i) Name the **THREE** manufactured boards, labelled **A**, **B**, and **C** below.



A



B



C

- (ii) With the aid of notes and *neat freehand sketches*, describe in detail the manufacture of **ONE** of the above boards.
- (iii) Briefly explain **FOUR** advantages that manufactured boards have over natural boards.
- (iv) The conservation of hardwoods and protection of existing rainforests is one of the most pressing environmental issues concerning the developing countries of the world.
- (a) Suggest **TWO** reasons why developing countries should conserve their tropical rainforests.
- (b) State **TWO** ways that the use of manufactured boards can help reduce the current rate of deforestation.

4. (i) Name the woodworking tools labelled **W**, **X**, **Y** and **Z** below and briefly describe what **each** tool is used for.



W



X



Y



Z

- (ii) With the aid of notes and *neat freehand sketches*, describe how the tool labelled **Y** above would be set and used.
- (iii) Diagram **A** shows the marking out of a common woodworking joint. Diagram **B** shows the piece after the waste has been removed. With the aid of notes and *neat freehand sketches*, describe the correct steps involved to remove the waste as shown.

A



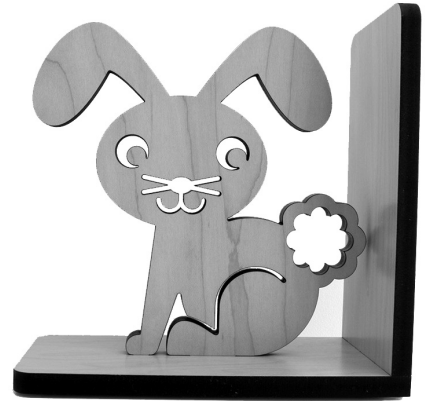
B



5. Answer 5A or 5B

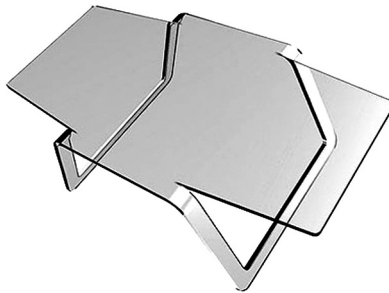
5A. The diagram shows a decorative bookend, for a young person's room, made from wood.

- (i) Using notes and *neat freehand sketches*, show how you would transfer a picture of the bunny from a sheet of paper onto the wood.
- (ii) Select an appropriate clear finish for this bookend and give **TWO** reasons in support of your choice.
- (iii) With the aid of notes and *neat freehand sketches*, describe in detail the steps you would follow to apply the chosen finish to the wood.
- (iv) State **TWO** specific safety precautions that should be observed when using applied finishes.



OR

5B. The diagram shows a bed table made from one piece of folded acrylic.



- (i) Using *neat freehand sketches*, draw the development that would be marked out on the acrylic sheet in order to manufacture the table. Show clearly all fold lines and cut lines.
- (ii) A strip heater is required to soften the acrylic so it can be bent easily to form the bed table. Using notes and *neat freehand sketches*, describe how you would use the strip heater to bend one of the angles required.
- (iii) It is proposed to attach handles to both ends of the bed table to make it easier to carry. This will require drilling four small holes to attach the handles securely. Describe, using notes and *neat freehand sketches*, the steps involved in drilling these small holes in acrylic.