



Junior Certificate Examination, 2017

Materials Technology (Wood)

Higher Level

Section B (60 marks)

Monday, 19 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 should be done freehand.*
- (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.*

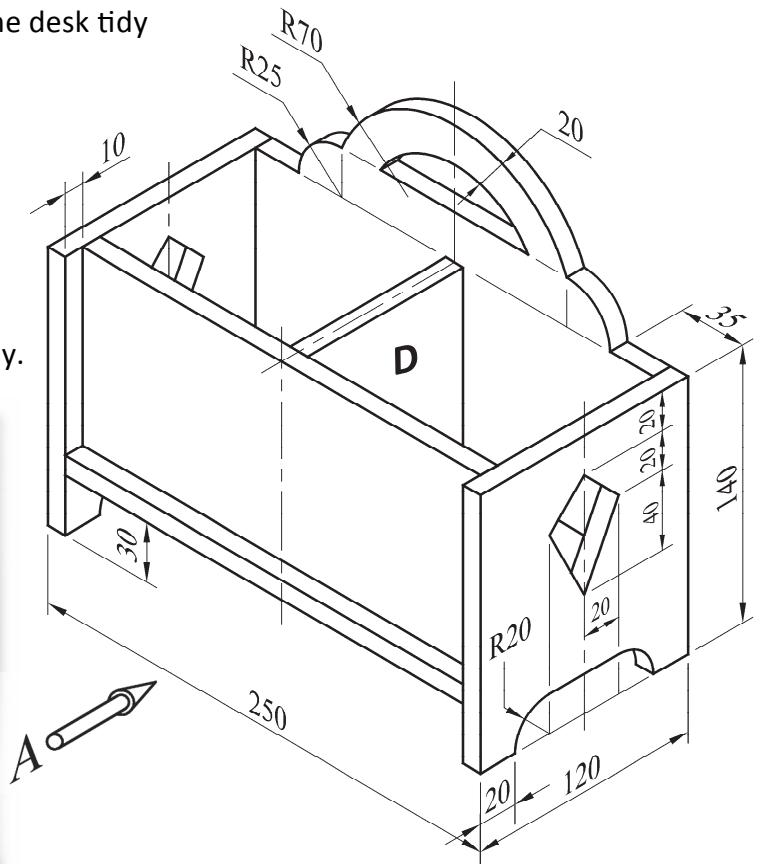
1. The diagram shows a Desk Tidy, which includes a novel calendar function.

(i) Draw a full size **front elevation** of the desk tidy in the direction of arrow **A**.

(ii) Project an **end view**.

Note: Include hidden detail.

(iii) Using notes and **neat freehand sketches**, suggest a suitable method of joining the central divider **D** to the front of the desk tidy.



All material is 10mm thick.



2. (i) Two stages in a typical design process are **Design Ideas/Solutions** and **Evaluation**.

Explain these **TWO** stages.

(ii) Candles and tea-lights are manufactured in a wide variety of forms and colours, as shown.

Using notes and **neat freehand sketches** to communicate your ideas, design a **wall-mounted** wooden unit to display a minimum of **three** candles or tea-lights.

The candles or tea-lights should be displayed at different heights.

(iii) Describe, using notes and **neat freehand sketches**, how you propose to attach the unit to the wall.

(iv) State a specific requirement, other than being wall-mounted, that must be considered in the design of your proposed unit. Using notes and **neat freehand sketches**, show how you incorporated this requirement into your design.

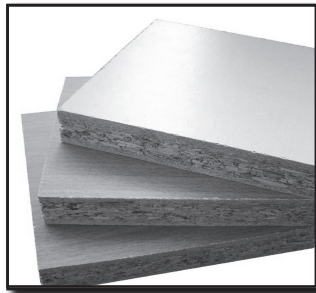


3. (i) Name the **FOUR** manufactured boards labelled **A**, **B**, **C** and **D** below.

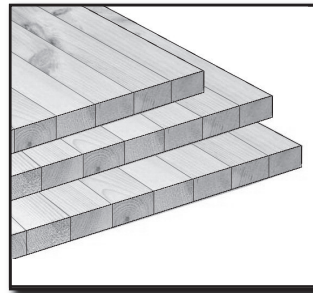
A



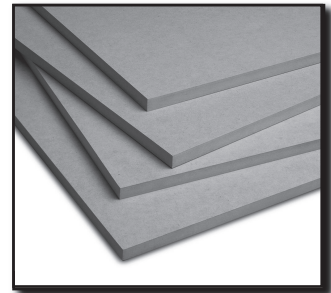
B



C



D

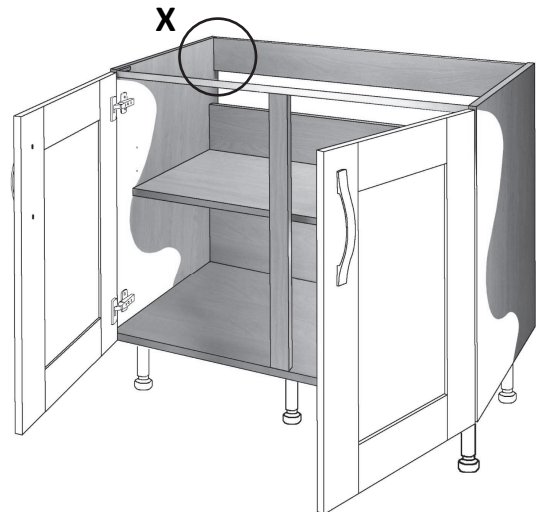


(ii) Briefly outline **FOUR** advantages of using manufactured boards instead of solid wood.

(iii) With the aid of notes and *neat freehand sketches* describe, in detail, the manufacture of board **A** above.

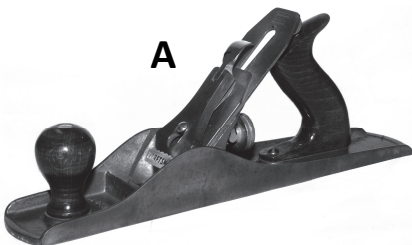
(iv) The methods for joining manufactured boards are usually different from the traditional methods used for joining solid wood.

With the aid of notes and *neat freehand sketches* compare **TWO** such methods of joining the board labelled **B** above at a 90° angle, as shown at corner 'X' in the diagram.

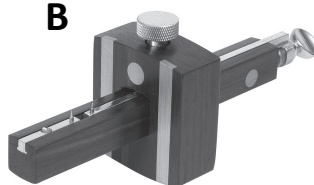


4. (i) State the correct name for **each** of the specialist tools labelled **A**, **B** and **C** below.

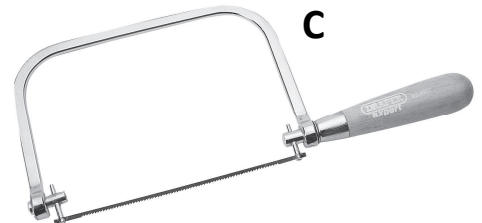
A



B



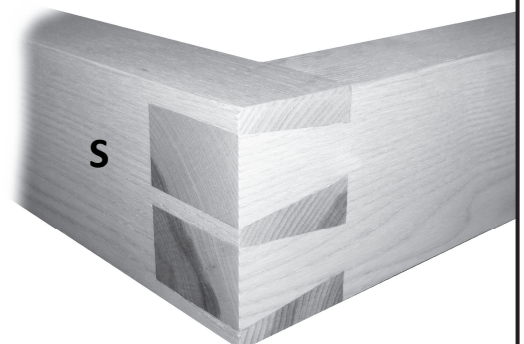
C



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

(iii) With the aid of notes and *neat freehand sketches*, describe how the tool labelled **B** would be **set** and **used**.

(iv) The diagram shows a **Corner Dovetail Joint**. With the aid of notes and *neat freehand sketches*, describe how to **mark out** and **remove** the waste from piece **S**.



5. Answer 5A or 5B

5A. The diagram shows a wooden rocking chair.

- (i) The rocker 'R' is laminated. With the aid of notes and **neat freehand sketches** describe, in detail, the steps involved in producing this rocker.
- (ii) The spindle 'S' is produced on a woodturning lathe. With the aid of notes and **neat freehand sketches** describe, in detail, the steps involved in making this spindle from a square block of wood.
- (iii) The spindle on the other arm of the chair is to be identical to 'S'. With the aid of notes and **neat freehand sketches** describe how this could be achieved.
- (iv) Describe, in detail, the steps involved in **preparing** the wood for, and in **applying** a varnish finish to, the chair.



OR

5B. The five boards on the right are to be glued together to form a large wooden block which is to be shaped to produce the duck carving shown below.

- (i) With the aid of notes and **neat freehand sketches**, describe, in detail, how the large block is made from the boards.
- (ii) Describe, using notes and **neat freehand sketches**, how the duck outline is transferred from a sheet of paper to the wooden block.
- (iii) Describe in detail, using notes and **neat freehand sketches**, how the duck would be carved from the wooden block.
- (iv) Describe, in detail, the steps involved in **preparing** the wood for, and in **applying**, a finish to the duck.

