

Pre-Junior Certificate Examination, 2012

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

Time: 2 hours

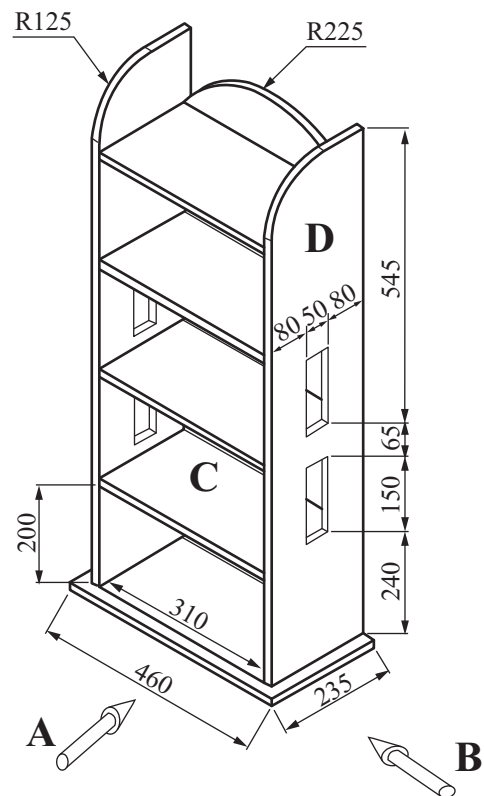
Instructions

- (a) Answer **three** questions. All questions carry equal marks.*
- (b) You may answer either question 5A **or** question 5B but **not both** of them.*
- (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 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 your answer book.*

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

Material: 15mm thick
The shelves are all equally spaced.

- (i) To a scale of 1:4, draw a **front elevation** of the shelving unit 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 shelf **C** to the side **D**.



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

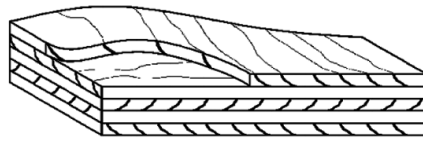
- (ii) The diagram shows a portable DVD player, some DVDs and a selection of accessories.

Using notes and *neat freehand sketches* to communicate your ideas, design a freestanding unit that would display and store the items in an attractive manner.



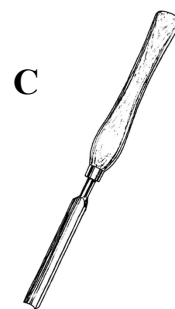
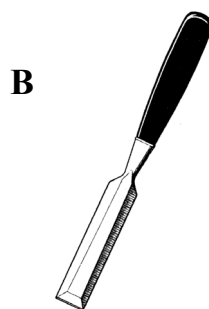
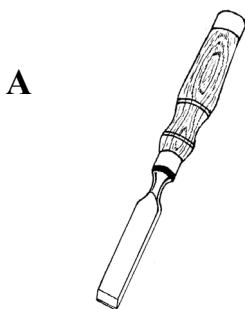
- (iii) State **TWO** specific design requirements that must be considered for the proposed unit.
- (iv) Suggest a suitable material for the manufacture of the unit and give **TWO** reasons for your choice.

3. (i) Name the manufactured board shown in the diagram and state **TWO** advantages and **TWO** disadvantages of this board.



- (ii) With the aid of notes and *neat freehand sketches*, describe, in detail, the manufacture of the board shown.
- (iii) The habitats of some endangered animals are being clear-felled on a daily basis. Give **TWO** examples of how the use of manufactured boards may help to alleviate the destruction of the rainforests.
- (iv) Give **TWO** examples of how manufactured board can have a smaller carbon footprint than solid wood.

4. (i) State the correct name and function for the tools labelled **A**, **B** and **C**.



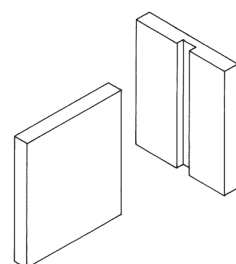
- (ii) The diagram shows the cross sections of two different chisel types. Name each chisel.



- (iii) Describe in detail, using notes and *neat freehand sketches*, how you would re-sharpen a chisel that has a badly damaged cutting edge.

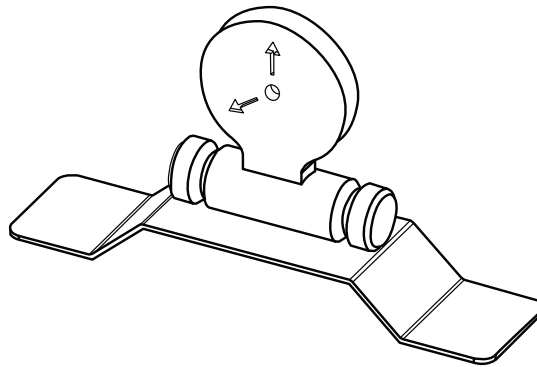


- (iv) The diagram shows a through housing joint often used in drawers. With the aid of notes and *neat freehand sketches*, describe the stages in **marking out** and **removing the waste**.



5. Answer 5A or 5B

5A. The diagram shows a clock which is made from wood and acrylic.



- (i) Using a *neat freehand sketch*, draw the development that would be marked out on the acrylic sheet in order to manufacture the acrylic base.
- (ii) With the aid of *neat freehand sketches*, describe, in detail, the steps you would follow to **cut out** and **form** the acrylic base.
- (iii) With the aid of notes and *neat freehand sketches*, describe the steps involved in drilling the two small holes in the acrylic to attach the turned wood.

OR

5B. The diagram shows a wooden panel that has a decorative veneer applied. The centre design and outside border are made using walnut veneer and the main panel is made from sycamore veneer.

- (i) With the aid of notes and *neat freehand sketches*, describe how to mark out and cut the veneers for application to the panel.
- (ii) Both impact adhesive and scotch glue can be used to bond the veneers to the surface. Give **TWO** advantages and **ONE** disadvantage of using each type.
- (iii) Select an appropriate clear finish for the panel and give **TWO** reasons for your choice.
- (iv) Select a suitable method of application for your finish and give **ONE** reason for your choice.

