



Junior Certificate Examination 2008

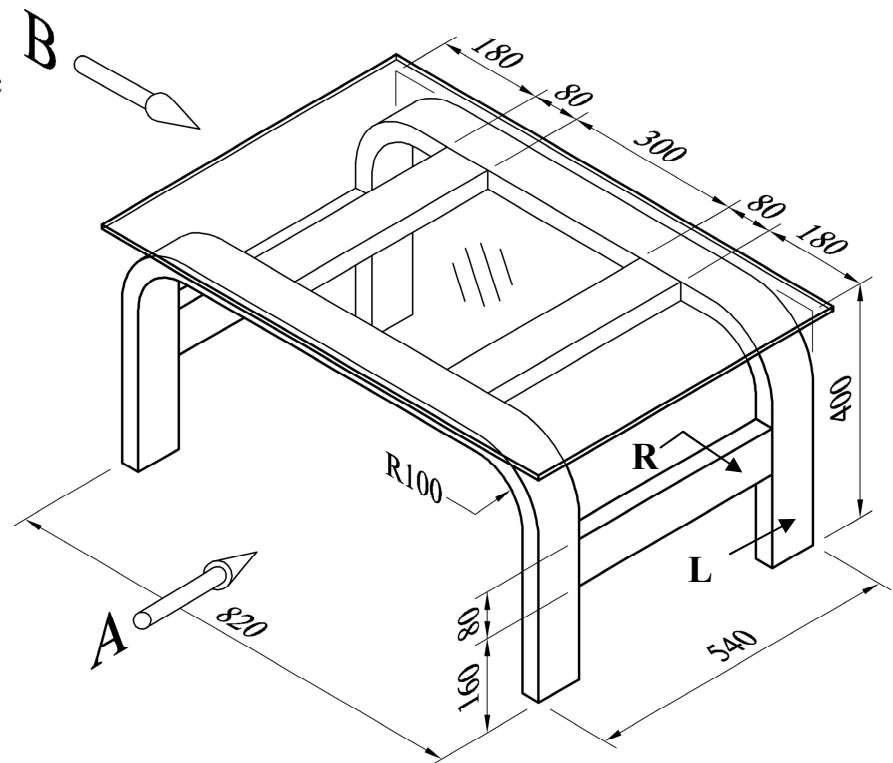
Materials Technology Wood
Higher Level
Section B (60 Marks)

Instructions

- (a) Answer **any** three questions. All questions carry equal marks.
- (b) Where sketches are required they may be done freehand or on the graph paper provided.
- (c) Write your examination number on the answer book and on all other pages used.
- (d) 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 coffee table consisting of a wooden frame and a glass top.

All frame material
is 80mm x 32mm

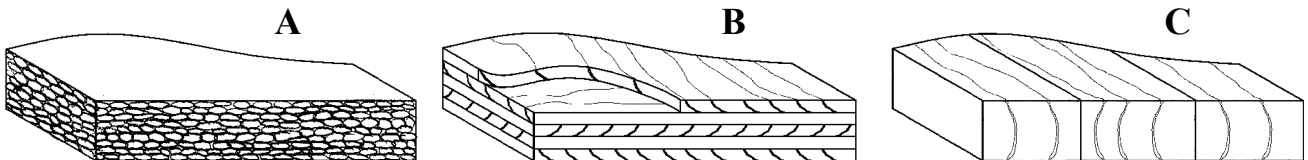


- (i) To a scale of 1:4, draw a **front elevation** of the wooden frame looking in the direction of arrow **A** and an **end elevation** looking in the direction of arrow **B**. Include **FOUR** main dimensions on your drawing.
- (ii) With the aid of notes and **neat freehand sketches**, describe a suitable method of joining the members **R** and **L**.

2. (i) Two stages in a typical design process are **sketches/working drawings** and **evaluation**. Explain these two stages.
- (ii) The diagram shows a collection of items which are often found in a home. Using notes and *neat freehand sketches* to communicate your ideas, design a unit to store these items.
- (iii) State **TWO** specific requirements that must be considered in your design.
- (iv) Suggest a suitable material for the manufacture of the unit and give **TWO** reasons for your choice.



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



- (ii) State **FOUR** advantages of manufactured boards.
- (iii) With the aid of notes and *neat freehand sketches* describe, in detail, the manufacture of **ONE** of the above boards.
- (iv) State how the use of manufactured boards can help reduce the current rate of global deforestation.

4. Answer either A or B

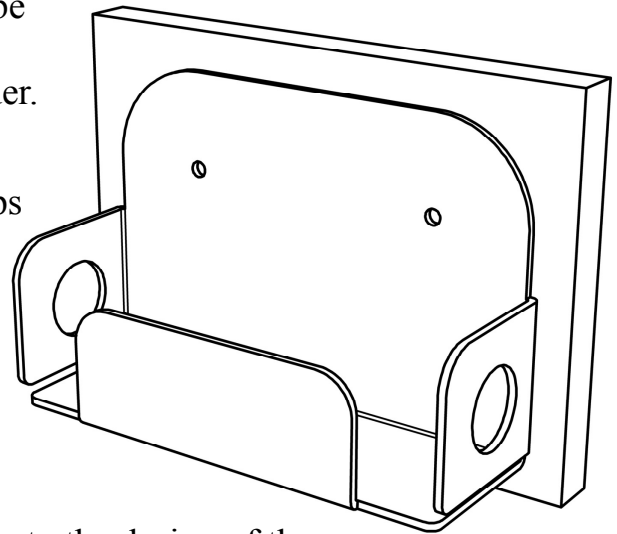
A. The diagram shows an acrylic letter holder with a hardwood back.

(i) Draw the development that would be marked out on an acrylic sheet in order to manufacture the letter holder.

(ii) With the aid of notes and *neat freehand sketches* describe the steps involved in drilling the two small holes in the acrylic.

(iii) Using notes and *neat freehand sketches* describe how the large holes at the sides of the holder could be formed.

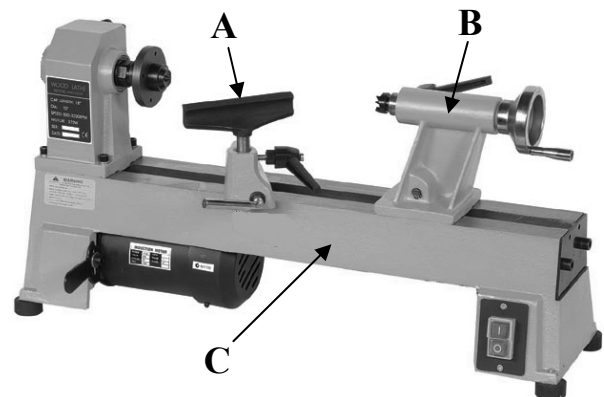
(iv) Suggest an appropriate modification to the design of the hardwood back which would improve the appearance of the unit.



OR

B. The diagram shows a woodturning lathe.

(i) Name the parts of the lathe labelled A, B and C and briefly describe the function of each part.



(ii) The diagram shows a table lamp turned from wood. Describe, in detail, and with the aid of notes and *neat freehand sketches*, how a hole could be formed in the body of the lamp to accommodate the electric cable.

(iii) The lamp has a maximum diameter of 150mm. Which of the following speeds would be the most appropriate for turning the lamp, **100 RPM**, **400 RPM** or **1000 RPM**?

(iv) State **THREE** specific safety precautions that should be observed when turning wood on a lathe.

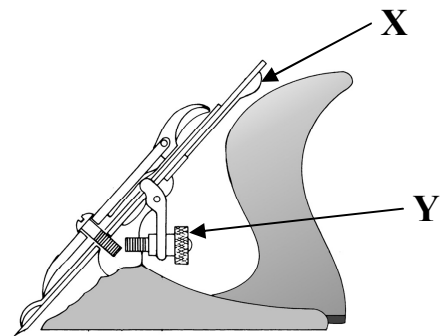


5. (i) State the correct name for each of the planes labelled **A**, **B** and **C** below.



(ii) Select any **TWO** of the above planes and describe their appropriate use.

(iii) The diagram on the right shows the cutting assembly of a plane. Name the parts labelled **X** and **Y** and state the function of each.



(iv) The blade of the plane, which is shown, has been badly damaged.

Describe, in detail, with the aid of notes and *neat freehand sketches*, the steps involved in re-sharpening the cutting edge of the blade.

