

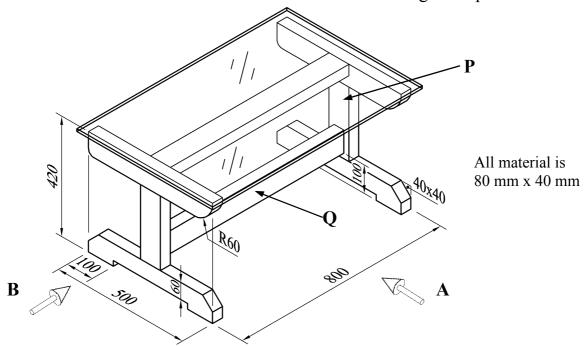
Coimisiún na Scrúduithe Stáit State Examinations Commission

Junior Certificate Examination 2006

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 should 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 manufactured from oak. The table has a 12mm thick glass top.



- (i) To a scale of 1:4, draw a Front Elevation of the table 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 **P** and **Q**.

2. (i) The following list describes a number of steps that are usually undertaken in a process of design.

Design Ideas/Solution Investigation and Research Evaluation Analysis of Brief Sketches/Working Drawings

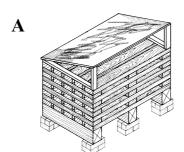
Place these steps in their correct order and write a short note explaining any **TWO** of the steps in the process.

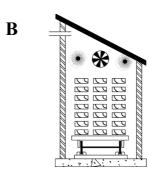
- (ii) The diagram shows a television, games console and accessories. Using notes and *neat freehand sketches* to communicate your ideas, design a unit that will store and display these items.
- (iii) State **TWO** specific design requirements that must be considered for the proposed unit.
- (iv) Suggest a suitable material for the manufacture of the proposed unit and give **TWO** reasons for your selection.





3. (i) Name the two methods of seasoning, A and B, shown in the diagrams and state TWO advantages and TWO disadvantages of each method of seasoning.





- (ii) Explain what is meant by the term **Equilibrium Moisture Content** (EMC).
- (iii) When wood is used in external situations it is normally treated with a **Preservative**. State **TWO** reasons for the use of preservatives and name **TWO** classes of preservative.
- (iv) Name **THREE** methods of applying preservatives, and state **ONE** advantage and **ONE** disadvantage of each method.

4. Answer either A or B

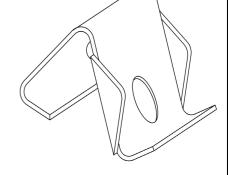
- **A.** The diagram shows a storage chest for toys. The chest is made from pine.
 - (i) With the aid of *neat freehand sketches*, describe *in detail*, the steps you would follow to prepare the wood for a clear applied finish.
 - (ii) Select an appropriate clear finish for the chest and give **TWO** reasons in support of your choice.



- (iii) With the aid of *neat freehand sketches*, describe *in detail* the steps you would follow in the application of your chosen finish.
- (iv) State **TWO** specific safety precautions that should be observed when using applied finishes.

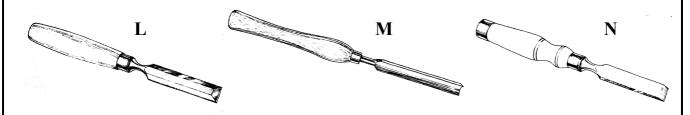
OR

- **B.** The diagram shows a mobile phone holder manufactured from acrylic.
 - (i) Using *neat freehand sketches*, draw the development that would be marked out on an acrylic sheet in order to manufacture this holder.
 - (ii) With the aid of *neat freehand sketches*, describe *in detail* the steps you would follow to **CUT OUT** and **FORM** the holder.

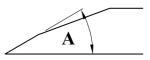


- (iii) With the aid of *neat freehand sketches*, describe how you would bore the hole in the acrylic sheet.
- (iv) With the aid of *neat freehand sketches*, suggest a suitable design for a wooden base for the holder that would incorporate a storage facility for a notepad and pen.

5. (i) State the correct names for the tools labelled L, M and N.



(ii) What is the correct angle, **A**, for the cutting edge of a chisel when resharpening it?



(iii) Describe, *in detail*, using notes and *neat freehand sketches*, how you would resharpen a chisel that has a badly damaged cutting edge such as that shown in the diagram.



(iv) With the aid of notes and *neat freehand sketches*, describe *in detail* the steps you would follow to cut out the trench shown in the diagram.

