



Junior Certificate Examination 2009

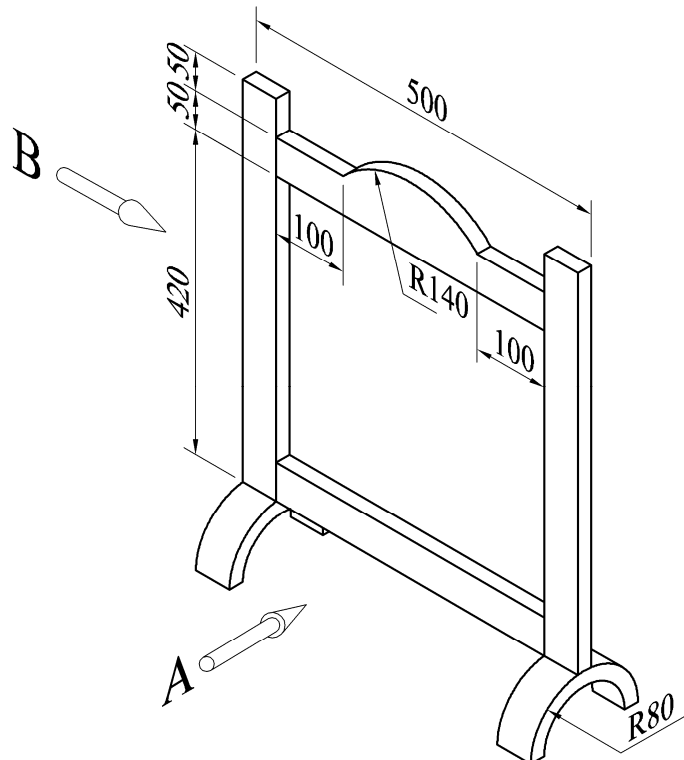
Materials Technology - Wood
Higher Level
Section B (60 Marks)

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 frame for a fire-screen.

Material dimensions
50mm x 20mm



- (i) To a scale of 1:2, 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 inserting a wooden panel into the frame.

2. (i) Two stages in a typical design process are **Investigation/Research** and **Design Ideas/Solutions**. Explain these **TWO** stages.

(ii) The diagram shows a collection of awards won by a young person. Using notes and *neat freehand sketches* to communicate your ideas, design a wall mounted unit that will display the **three** trophies and **ten** medals 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.

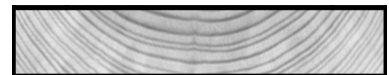


3. The diagrams show two methods of timber conversion.

(i) Name the **TWO** methods of conversion.

(ii) State **TWO** advantages and **TWO** disadvantages of **each** conversion method.

(iii) The board shown on the right is prone to **cupping**. Using a *neat freehand sketch*, show the direction of the cupping and explain why this happens.



(iv) With increasing awareness of environmental issues, there is a greater focus on the protection of existing tropical rain forests and on the conservation of hardwoods.

(a) State **TWO** reasons why we should conserve our rainforests.

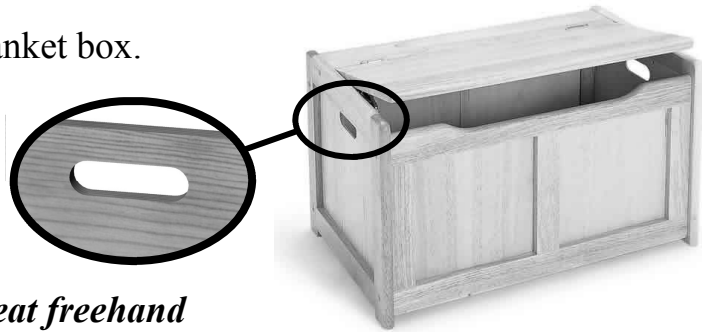
(b) Suggest **TWO** ways that we can reduce our use of hardwoods.

4. Answer 4A or 4B

A. The diagram shows a wooden blanket box.

- (i) Holes, as shown on the right, are to be cut in the side panels to allow for lifting and ventilation.

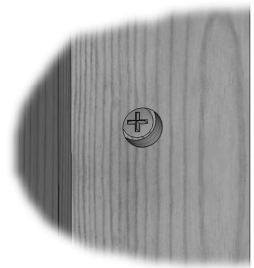
Describe, using notes and *neat freehand sketches*, how would you form these holes.



- (ii) Describe the steps involved in **preparing** this artefact for an applied finish.

- (iii) Select a suitable clear applied finish and give **TWO** reasons for your answer.

- (iv) The box is assembled using recessed screws as shown on the right. Describe, using notes and *neat freehand sketches*, **ONE** method of concealing the screws in order to improve the overall appearance.



OR

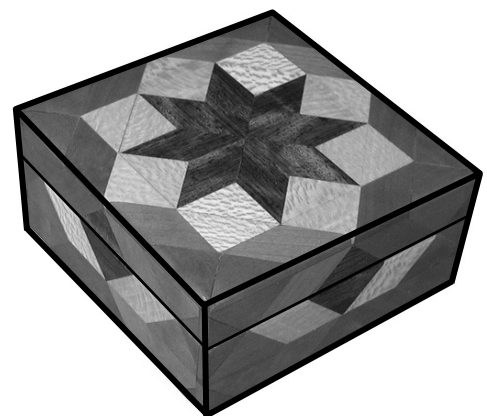
B. The diagram shows a veneered jewellery box.

- (i) With the aid of notes and *neat freehand sketches*, describe how to mark out **and** cut the veneers for the top.

- (ii) Describe, in detail, how the finished veneers would be applied to the top of the jewellery box.

- (iii) Name three types of adhesive that could be used to apply the veneers.

- (iv) Explain, with the aid of notes and a *neat freehand sketch*, what is meant by **rotary cutting** in the manufacture of veneers.



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



- (ii) Select any **TWO** of the above saws and, using notes and *neat freehand sketches*, describe their appropriate use.
- (iii) State **THREE** safety precautions that should be observed when using the saw labelled **A** above and briefly outline the reason for **EACH** precaution.
- (iv) An enlarged view of the front of saw **C** is shown on the right. Explain, using notes and a *neat freehand sketch*, the function of the part labelled **X**.

