



*Junior Certificate Examination 2007*

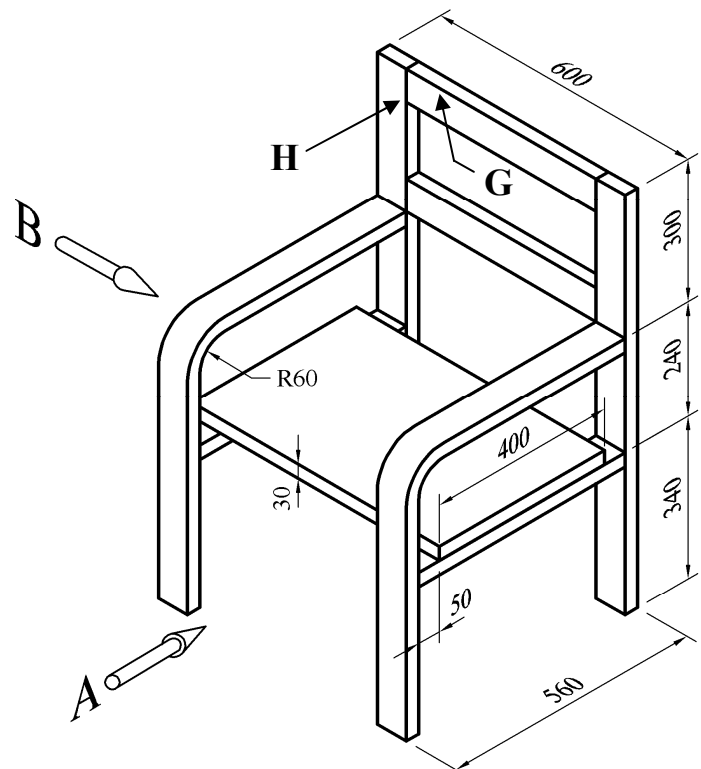
***Materials Technology Wood***  
***Higher Level***  
***Section B (60 Marks)***

***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 wooden chair.

All frame material  
is 70mm x 30mm



- (i) To a scale of 1:4, draw a **front elevation** of the chair 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 **G** and **H**.

2. (i) Two stages in a typical design process are **investigation/research** and **evaluation**. Explain these two stages.

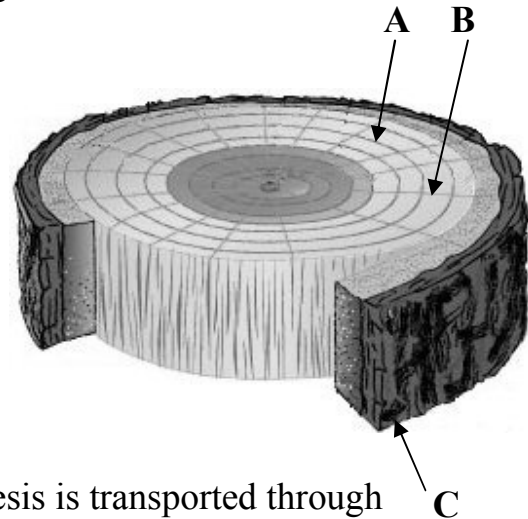
- (ii) The diagram shows a collection of DVDs and Video Cassettes. Using notes and *neat freehand sketches* to communicate your ideas, design a unit to store **five** of each of these items. The unit should incorporate a film theme.



- (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. The diagram shows a cross section through the trunk of a tree.

- (i) Name the parts of the cross section labelled **A**, **B** and **C**.
- (ii) In the diagram, the heartwood and sapwood areas are clearly shown. State **TWO** differences between the areas.



- (iii) Food generated through photosynthesis is transported through the tree trunk. Describe, using notes and *neat freehand sketches*, the process of photosynthesis.
- (iv) Give **TWO** reasons why rain forests should be conserved and give **TWO** examples of methods which will reduce the rate of global deforestation.

4. Answer either A or B

A. The diagram shows the leg of a stool which has been turned on a lathe.

(i) With the aid of notes and *neat freehand sketches* describe **ONE** method that could be used to make another leg identical to the one shown.

(ii) Select **TWO** specific woods which are suitable for turning and give **TWO** reasons for your selection.

(iii) With the aid of notes describe how a square piece of wood should be **(a) prepared** and **(b) mounted** for turning on a lathe.



OR

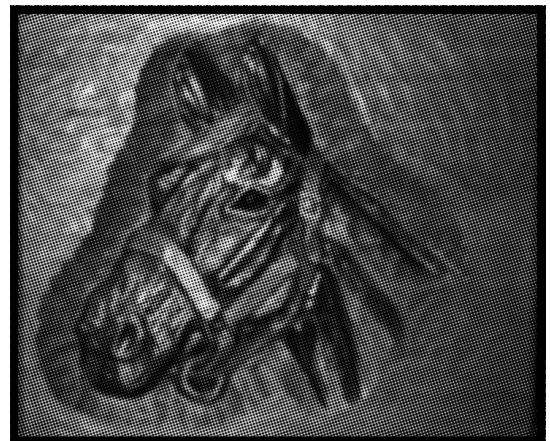
B. The diagram shows a carved wooden panel.

(i) With the aid of notes and sketches describe how you would transfer the design from a sheet of paper onto the wooden panel prior to carving.

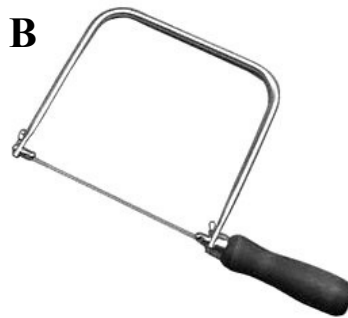
(ii) Name **THREE** methods of carving.

(iii) State **TWO** reasons why it is necessary to apply a finish to a wooden artefact.

(iv) State **TWO** specific safety precautions that should be observed when using applied finishes.



5. (i) The diagram shows three different types of saw. State the correct names for the saws labelled **A**, **B** and **C** below and give one appropriate use for each of the saws.



- (ii) Using notes and *neat freehand sketches* outline the steps involved in replacing a broken blade in the saw labelled **B** above.
- (iii) With the aid of notes and *neat freehand sketches* explain the terms **Saw Kerf** and **Saw Set**.

- (iv) The diagram shows a cut tenon. State the correct name for part **D** of the tenon and describe its function.

