

Pre-Junior Certificate Examination, 2011

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

Time: 2 hours

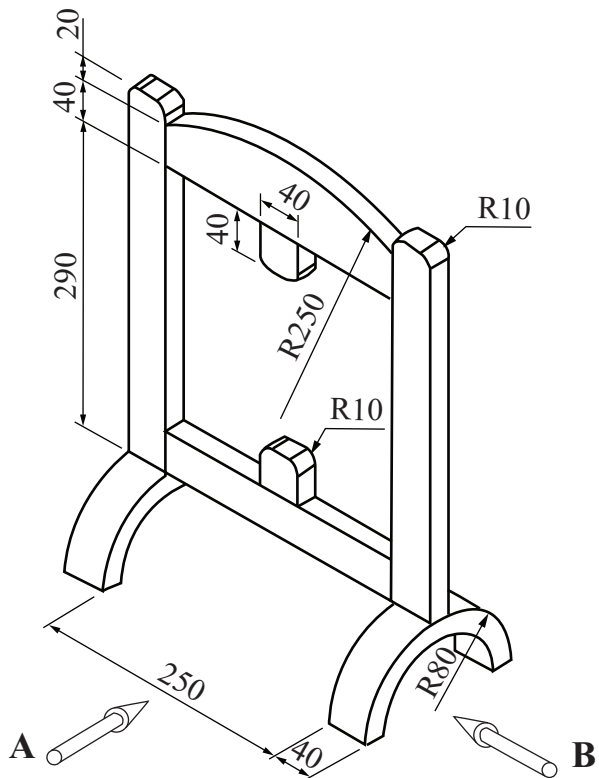
Instructions

- (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 should 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 wooden mirror frame.

Frame Material: 40mm × 20mm.

- (i) To a scale of 1:2, draw a **front elevation** of the mirror 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 the curved legs to the frame.



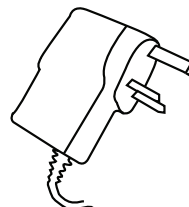
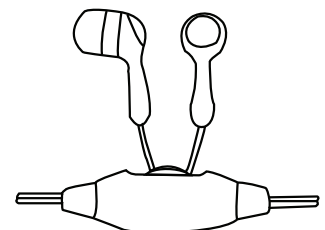
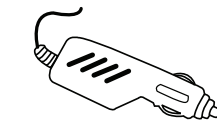
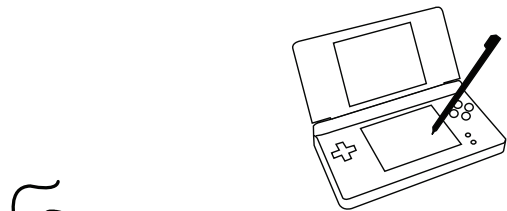
2. (i) Two stages in a typical design process are **Design Ideas/Solutions** and **Evaluation**. Explain these **TWO** stages.

- (ii) The diagram shows a games console and a selection of accessories.

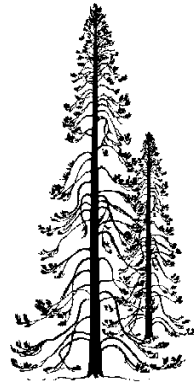
Using notes and *neat freehand sketches* to communicate your ideas, design a freestanding unit that will display and store the items in an attractive manner.

- (iii) State **TWO** specific design requirements that must be considered for the proposed unit.

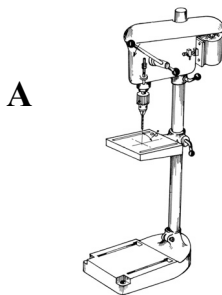
- (iv) Suggest a suitable material for the manufacture of the unit and give **TWO** reasons for your choice.



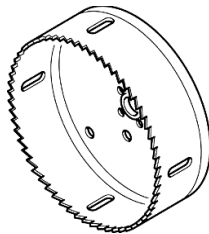
3. (i) Trees can be classified as coniferous or deciduous. Compare conifers and deciduous trees under the headings, seeds, leaves, root system and timber.
- (ii) Trees generate their own food through the process of photosynthesis. Describe this process using notes and *neat freehand sketches*.
- (iii) State **TWO** reasons why we should conserve the rainforests and reduce our use of hardwoods.
- (iv) Suggest **TWO** alternatives to rainforest hardwoods.



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



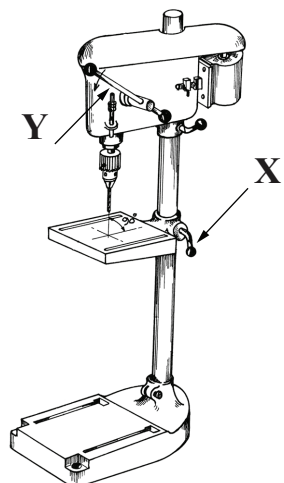
B



C



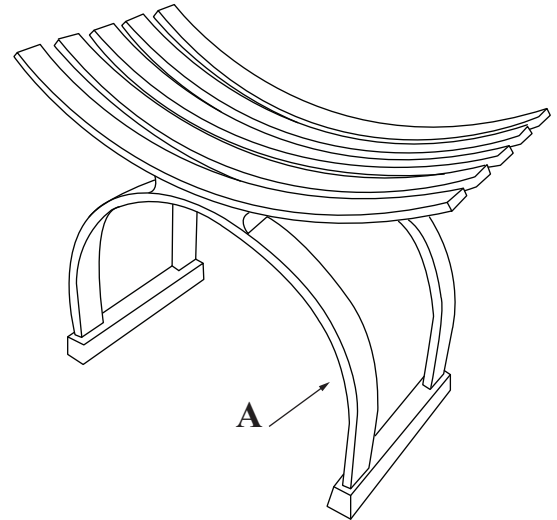
- (ii) Outline **THREE** specific safety precautions that should be observed when using the tool labelled A above.
- (iii) An enlarged view of tool A is shown to the right. Explain, using notes and *neat freehand sketches*, the function of the parts labelled X and Y.



5. Answer 5A or 5B

5A. The diagram shows a laminated wooden seat.

- (i) With the aid of *neat freehand sketches*, describe in detail how the laminated leg **A** should be manufactured.
- (ii) Suggest a suitable applied finish for the seat. Give **TWO** reasons in support of your choice of finish.
- (iii) With the aid of *neat freehand sketches*, describe in detail how you would prepare the surface for the application of your chosen finish.
- (iv) Suggest a suitable wood to make the laminates from and a suitable adhesive to bond the laminates together. Give **ONE** reason for each of your choices.



OR

5B. The diagram shows a wooden panel that has been carved by relief carving.

- (i) With the aid of notes and *neat freehand sketches*, describe how you would transfer the design from a sheet of paper onto the wooden panel prior to carving.
- (ii) Using notes and *neat freehand sketches*, describe the process of relief carving.
- (iii) Name **TWO** carving tools and draw a *neat freehand sketch* of each.
- (iv) Suggest a suitable finish for the wooden carving and give **TWO** reasons in support of your choice.

