

Pre-Junior Certificate Examination, 2013

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

Time: 2 hours

Instructions

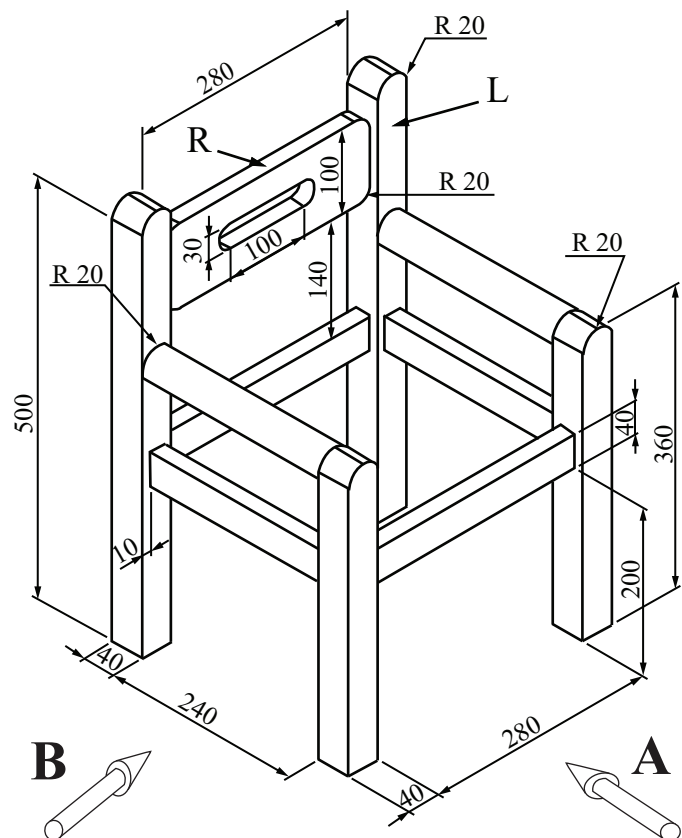
- (a) Answer **three** questions. All questions carry equal marks.*
- (b) You may answer either question 5A **or** question 5B but **not both** of them.*
- (c) Where sketches are required they may be done freehand or on graph paper.*
- (d) Write your name, your school's name and your teacher's name on the answer book and on all other pages used.*
- (e) **Question 1** from this section must 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 small wooden chair frame.

- (i) To a scale of 1:4, draw a **front elevation** of the chair 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 jointing the leg **L** to the back **R**.



All Rail Material: 20mm thick

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

- (ii) The diagram shows a portable tablet PC, and a selection of accessories.

Using notes and *neat freehand sketches* to communicate your ideas, design a freestanding unit to hold and display the tablet PC when charging. The unit should also store the accessories in an attractive manner.

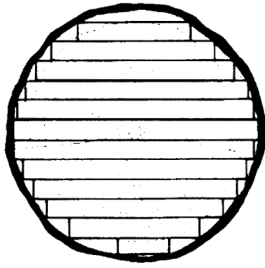


- (iii) State **TWO** specific design requirements that must be considered for the proposed unit.

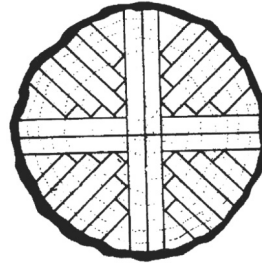


- (iv) Describe, using notes and *neat freehand sketches*, how you specifically incorporated these requirements into your final design solution.

3. The diagrams show two methods of timber conversion.

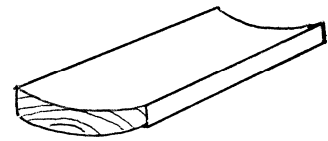


A

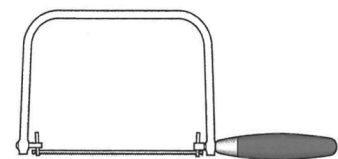
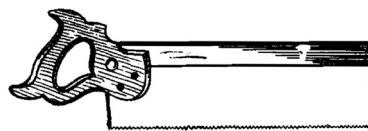
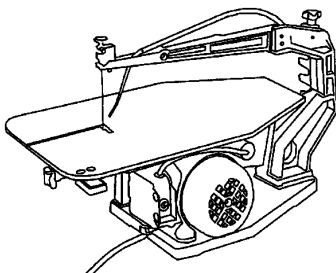


B

- (i) Name the **TWO** methods of conversion.
- (ii) State **TWO** advantages and **TWO** disadvantages of each method.
- (iii) The board shown on the right has cupped.
From which of the two methods above is this move likely to occur and explain why this happens.
- (iv) The destruction of our tropical rainforests is proceeding at an alarming rate.
 - (a) State **TWO** reasons why we should conserve our tropical rainforests.
 - (b) Suggest **TWO** replacements we can use instead of tropical hardwoods.



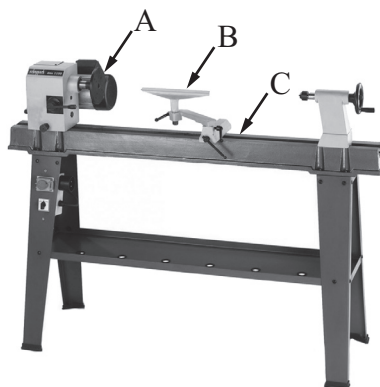
4. (i) State the correct name for the tools labelled X, Y and Z below and give **ONE** appropriate use for each saw.



- (ii) Describe, using notes and *neat freehand sketches*, the steps involved in replacing the blade in tool Z above.
- (iii) The teeth of the saw labelled Y above are arranged in a crosscut configuration. Make a neat labelled sketch of these teeth.
- (iv) State **THREE** safety precautions that should be observed when a person is using the tool labelled X above and briefly outline the reason for each precaution.

5. Answer 5A or 5B

5A. The diagram shows a woodturning lathe.



- (i) Name the parts labelled **A**, **B** and **C** and state the function of each.
- (ii) With the aid of *neat freehand sketches*, describe how a square piece of wood should be **prepared** and **mounted** for turning on a lathe.
- (iii) 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.
- (iv) With the aid of notes and *neat freehand sketches*, describe **ONE** method that could be used to make another lamp identical to the one shown.



OR

5B. The diagram shows a child's bike that is made from wood.

- (i) Name **THREE** finishes that could be applied to the bike to protect it from weathering.

Select **ONE** finish that would be best suited for the bike and give **TWO** reasons for your choice.



- (ii) With the aid of notes and *neat freehand sketches*, describe, in detail, the steps you would follow to **prepare** the wood and the steps you would follow to **apply** the finish you have chosen.
- (iii) State **TWO** specific safety precautions that should be followed when using applied finishes.