



*Junior Certificate Examination, 2014*

# *Materials Technology (Wood)*

## *Higher Level*

### *Section A (40 marks)*

*Monday, 16 June*

*Afternoon, 2:00 - 4:00*

#### **Instructions**

- (a) Answer any **sixteen** questions.
- (b) All questions carry equal marks.
- (c) Answer the questions in the spaces provided.
- (d) This booklet **must** be handed up at the end of the examination.
- (e) Write your examination number in the box provided and on all other pages used.

**Examination Number:**

| Centre Number |  |
|---------------|--|
|               |  |

| Section A    |  |
|--------------|--|
| 1            |  |
| 2            |  |
| 3            |  |
| 4            |  |
| 5(a) or 5(b) |  |
| <b>Total</b> |  |

## SECTION A - 40 MARKS

Answer any 16 questions from this section. All questions carry equal marks.

1. (i) Identify the power tool shown.

NAME

(ii) Describe **ONE** specific use for this power tool.

USE


2. The diagram shows a wooden garden bench.

Suggest **TWO** suitable applied finishes for the bench and give a reason for **each** chosen finish.

FINISH 1

REASON

FINISH 2

REASON



3. (i) Name the manufactured board shown in the diagram.

NAME

(ii) State **ONE** advantage of this manufactured board.

ADVANTAGE



4. (i) Name the woodworking tool shown in the diagram.

NAME

(ii) Give an appropriate use for this tool.

USE



5. The diagram shows a common defect in timber.

(i) Give the correct name for this defect.

NAME

(ii) Give **ONE** cause of this defect.

CAUSE



6. The diagram shows a CNC router.

State **TWO** advantages of controlling a router in this way.

1

2


7. The diagram shows the leaves and seeds of three common Irish trees.

In the spaces provided below, name **each** tree.



8. (i) Name the power tool shown in the diagram.




NAME

(ii) State an appropriate use for this tool.

USE



9. Name the screw driving systems shown at **A**, **B** and **C** below.

|          |   |  |
|----------|---|--|
| <b>A</b> |  |  |
| <b>B</b> |  |  |
| <b>C</b> |  |  |

10. (i) The diagram shows wooden boards held by four cramps. What is the correct name for this type of cramp?

NAME

(ii) Name the force applied to the boards by the cramps.

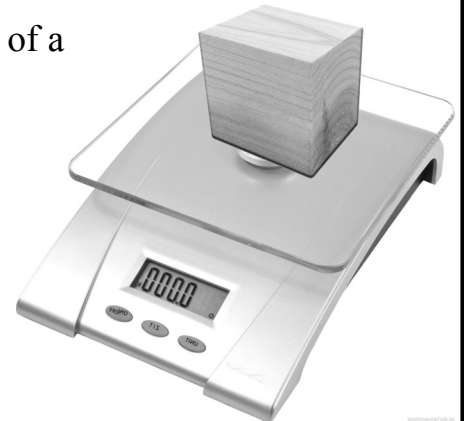
FORCE



11. Calculate the *original* moisture content (in % terms) of a piece of unseasoned wood, given its wet weight as 35.4 grams and its dry weight as 30 grams.

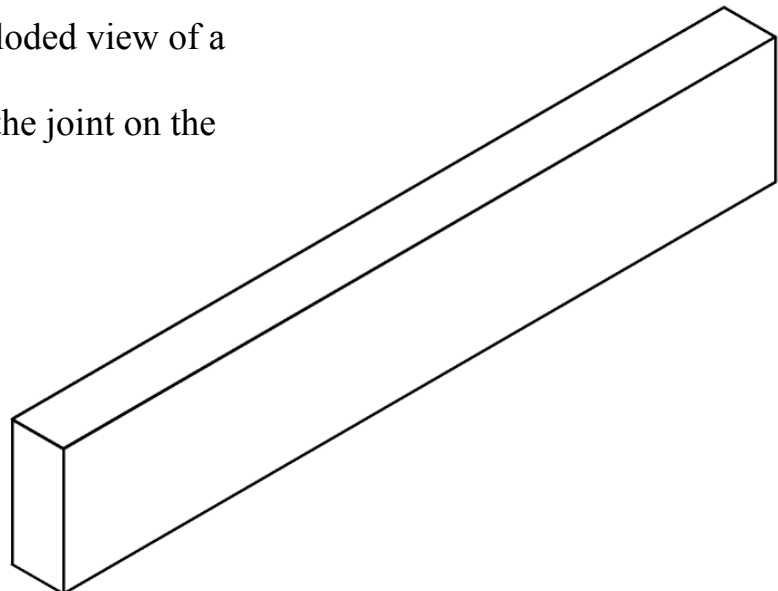
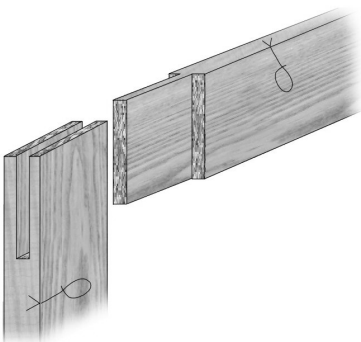
Calculation:

ANSWER  %



12. The diagram shows an exploded view of a **Bridle Joint**.

Sketch the marking out of the joint on the diagram on the right.



13. Give **TWO** reasons why a surface finish is usually applied to a wooden artefact as shown.

REASON 1

REASON 2


14. (i) Name the woodworking tool shown.

NAME

(ii) State **ONE** specific safety precaution that should be observed when using this tool.

PRECAUTION

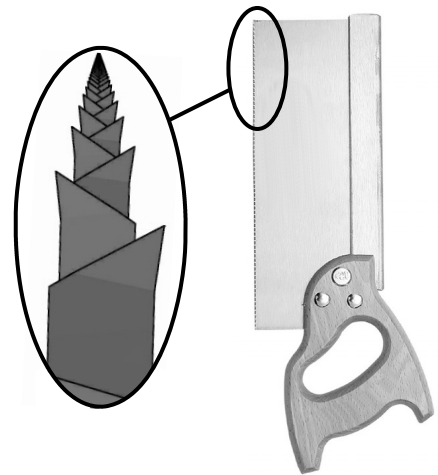

15. The teeth on a saw are bent alternately to the left and right as shown in the diagram.

(i) Name this feature.

NAME

(ii) What function does it serve?

FUNCTION

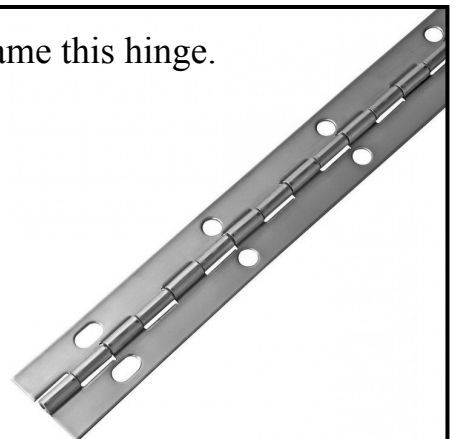
  


16. (i) The diagram shows a common type of hinge. Name this hinge.

NAME

(ii) Why would this type of hinge be used in preference to a butt hinge?

REASON



17. The diagram shows a dovetail joint. The slope of the dovetail is usually different for hardwoods and softwoods.



(i) What is the typical slope for each wood type?

**SOFTWOOD**       **HARDWOOD**

(ii) Why is the slope different for each wood type?

**REASON**

|  |  |
|--|--|
|  |  |
|  |  |

18. A tall reading lamp with a flat wooden base is shown in the diagram. The lamp is unstable on the floor.

Suggest **TWO** design modifications that would solve this problem.



1

|  |  |
|--|--|
|  |  |
|  |  |

2

|  |  |
|--|--|
|  |  |
|  |  |

19. Wooden boards are often joined to form longer lengths. The boards at **A** are to be butt jointed and the boards at **B** are to be finger jointed.

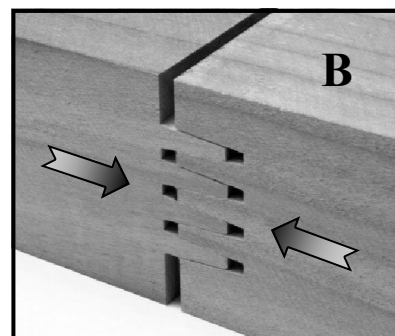
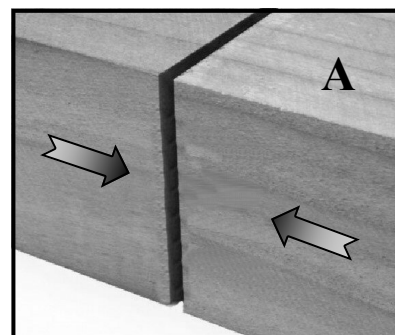
(i) Indicate, using a tick (✓), which method will produce the stronger joint.

**A**       **B**

(ii) Give a reason for your answer.

**REASON**

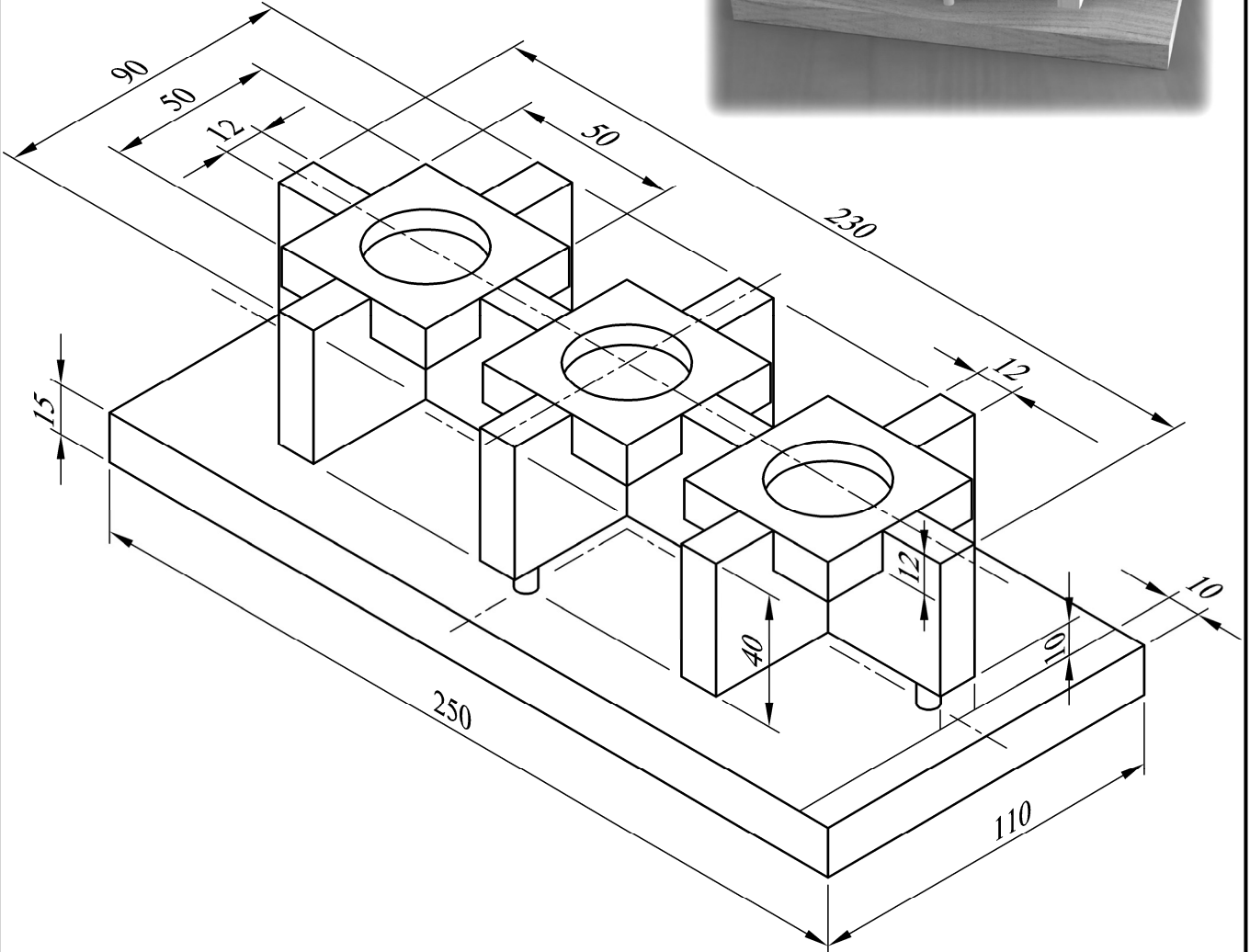
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20. The image on the right shows a design for a *Tea Light* holder.  
A dimensioned drawing of the artefact is shown below.



Complete the given cutting list.



| Description | Quantity | Length | Width | Thickness |
|-------------|----------|--------|-------|-----------|
| Base        | 1        |        | 110   | 15        |
| Long Rail   | 1        | 230    | 40    |           |
| Short Rail  | 3        | 90     |       | 12        |
| Candle Base | 3        |        | 50    | 12        |
| Dowels      |          | 30     | Ø6    |           |

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