

# THE INSTITUTE OF CARPENTERS



## Intermediate Examination

# 15th June 1999

## Associated Vocational Technology Paper

**TIME ALLOWED : 90 MINUTES**

**The following instructions should be read by ALL CANDIDATES before they commence work**

To obtain full marks Candidates must answer **ALL 20** questions

All questions carry equal marks

Answers **MUST** be submitted on the question paper immediately below the question.

Your candidate number **MUST** be written clearly in the top right hand corner of this sheet

This question paper remains the property of the **Institute of Carpenters**

and all USED AND UNUSED PAPERS **MUST BE RETURNED** after the examination

TO BE COMPLETED BY CANDIDATE  
BLOCK LETTERS PLEASE

**Name:**  
**Date of Birth:**  
**Occupation:**

[illegible]

## Age

1. (a) Illustrate by sketches the following terms related to door hanging.  
 (i) Arris; (ii) Leading edge.  
 (b) Explain the function of the above **TWO** terms.  
 (c) State, with reference to a Framed, Ledged, Braced and Battened door, the function of the brace.

a.

- b. 1. \_\_\_\_\_  
 2. \_\_\_\_\_
- c. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

2. Complete Fig. 1 to show the finishes, including lining, around a doorway opening in a stud partition.

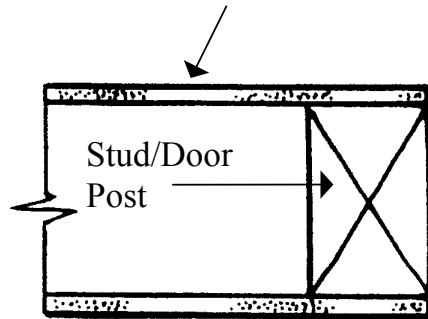
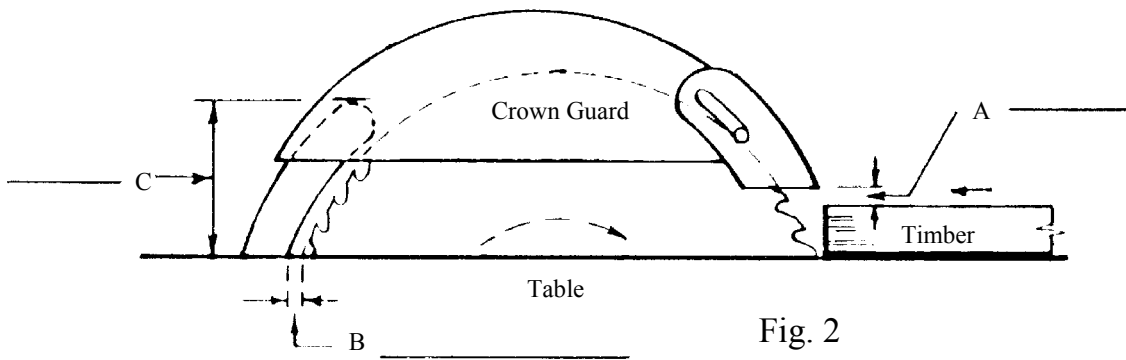


Fig. 1

3. State the following building regulations :-

a. The maximum gap permitted between balustrades.	
b. The maximum gap between treads on an open tread	

4. Fig. 2 illustrates the crown guard to a circular saw fitted with a blade of 650 mm diameter. Complete the figure to include the indicated dimensions necessary to comply with current Regulations.



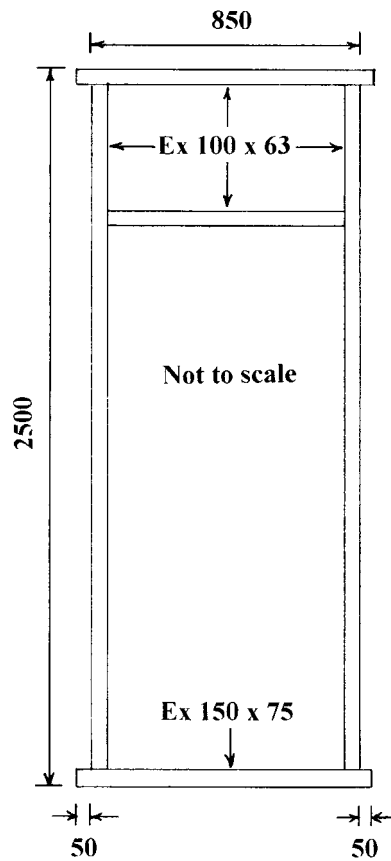
5. (a) State the MAIN difference between the components of a single roof and a double roof.  
 (b) State the function of a ridge board in a pitched roof.  
 (c) State **TWO** reasons for the use of wall plates.

- (a) \_\_\_\_\_  
 \_\_\_\_\_  
 (b) \_\_\_\_\_  
 \_\_\_\_\_  
 (c) 1. \_\_\_\_\_  
 2. \_\_\_\_\_

6. Name and sketch a suitable joint for **ONE** of the following situations:-

- (a) Drawer side to front.  
 (b) Rebated external door jamb to head.

7. Prepare a cutting list for **TWENTY** hardwood door frames, as shown in Fig. 3. (Add on 10 mm to the length for each tenon, also 50 mm for each of the horns).



No of Pieces	Item	Length	Sawn Size		Fin Size		Remarks
			W	T	W	T	

Fig. 3

8. State a use for each of the materials listed in the table below.

Materials	Uses
Chipboard	
Medium Density Fibreboard	
Blockboard	
Plywood	
Hardboard	

9. State a use for each of the following hand tools :-

Handtool	Use
Sliding Bevel	
Paring Chisel	
Marking Gauge	

10. (a) Complete Fig. 4 to illustrate **TWO** methods of strutting timber upper floor joists.

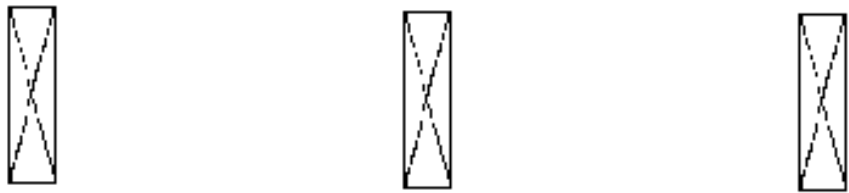


Fig. 4

- (b) State **ONE** reason for strutting timber upper floor joists.

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11. With the aid of a sketch illustrate how the effects of capillarity may be reduced between the frame cill and bottom rail of a casement window.

12. (a) Tick the appropriate box to classify the listed timbers into their respective Softwood and Hardwood categories.

Timber	Softwood	Hardwood
Parana Pine		
Ash		
Beech		
Western Red Cedar		
Hemlock		
Oak		

- (b) State which of the above listed timbers is the most suitable **Softwood** and **Hardwood** for external use.

External Softwood	External Hardwood

13. State the recommended :-

(a) Voltage for electrically powered portable tools which are to be used on site or in the workshop and state **ONE** reason for the recommendation.

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(b) Colour coding for the wiring to a three pin electric plug as shown in Fig. 5.

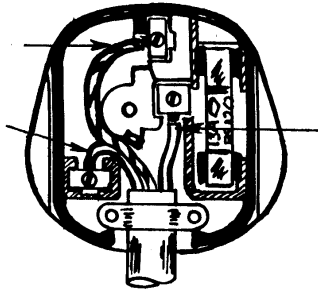


Fig. 5

14. Complete Fig. 6 to show the rear elevation of a ledged, braced and battened door.  
Indicate the hanging side, also name and dimension all members for a door which is 1980 x 760.

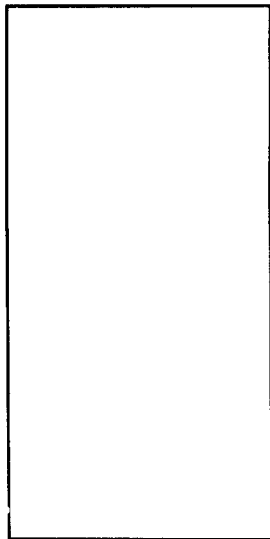


Fig. 6

15. (a) Complete Fig. 7 to indicate the following :-  
(i) Nosing Line; (ii) Pitch Line; (iii) Margin; (iv) Rise; (v) Going.

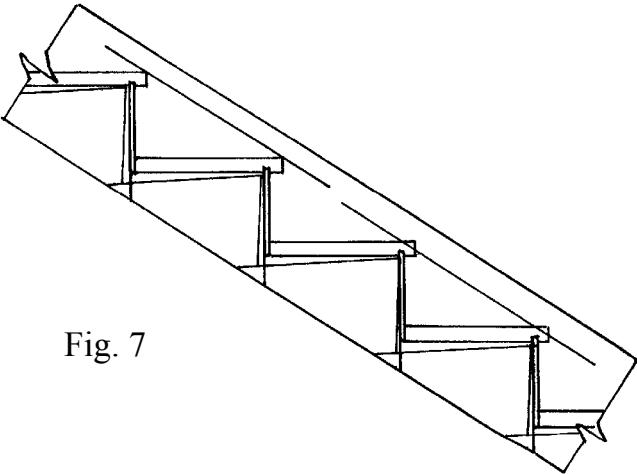


Fig. 7

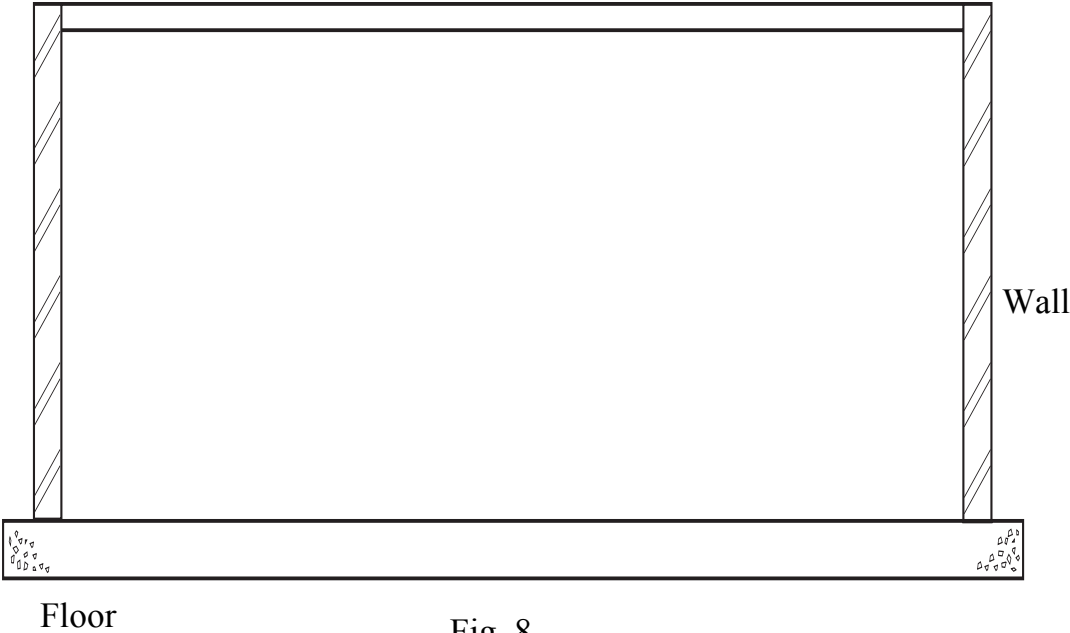
- (b) State the formula used to determine the ideal ratio of the tread rise and going.

16. Complete the table below by stating a different type of lock which may be used in each of the situations indicated.

Situation	Type of Lock
External Panelled Door to a domestic Dwelling	
Ledged and Braced Door to a Portable Building	
Pair of Wooden Gates to a Compound	

17. With the aid of sketches describe **THREE** defects which may occur when timber is seasoned.

18. a) Complete Fig. 8 to show the front elevation of the studwork required to include a doorway which is positioned approximately **ONE** metre from the left hand wall.
- b) Name the timber members and indicate the spacing of the studs when using plaster board.



19. Complete the table below.

Name of Timber	Country of Origin	One use
Oak		
Mahogany		
Redwood		
Whitewood		
Douglas Fir		

20. With the aid of sketches show horizontal sections through the jambs of a traditional and a stormproof casement window. Also indicate materials sizes suitable for single glazing.



## **AFFILIATE MEMBERSHIP**

Affiliate membership of the Institute of Carpenters is available to candidates achieving success in the Institutes Intermediate examination, also to Teachers/Lecturers/Instructors of Woodcrafts possessing a trade background.

Further information and application forms may be obtained from

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