

|                |
|----------------|
| CANDIDATE NAME |
|                |

|              |   |   |   |  |  |  |
|--------------|---|---|---|--|--|--|
| CANDIDATE No |   |   |   |  |  |  |
| 0            | 7 | F | O |  |  |  |



# The Institute Of Carpenters

## FOUNDATION CERTIFICATE

**Wednesday May 23rd 2007**

**THEORY PAPER**

**TIME ALLOWED ONE AND A HALF HOURS**

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

To obtain full marks Candidates must answer **ALL** questions  
Answers **MUST** be submitted on the question paper  
immediately below the question

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

1. State the type of work for which an electrically powered percussion drill is best suited.

---

---

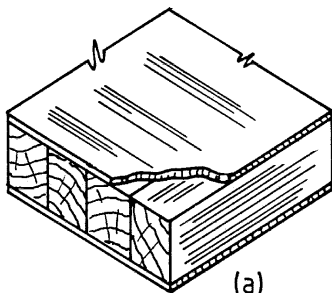
---

---

---

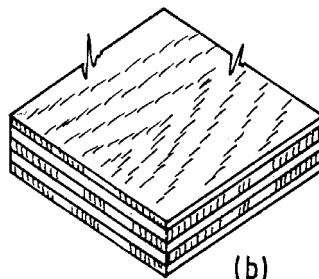
---

2. State the name given to the manufactured boards shown in figures 1a and 1b.



(a)

Fig. 1



(b)

|     |
|-----|
| (a) |
| (b) |

3. State **TWO** situations where an architrave would be used in construction.

1.

---

2.

---



---

4. State **TWO** main causes of Dry Rot.

1.

---

2.

---



---

5. Using drawing instruments, i.e. a compass, bisect the given angle in figure 2.

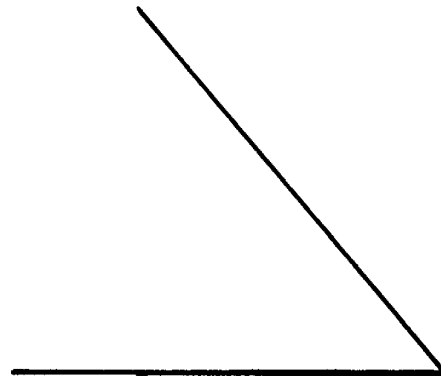


Fig. 2

6. With reference to a spirit level, describe :-

(a) A situation where it would be used;

(a)

---



---



---

(b) How it may be checked for accuracy.

(b)

---



---



---

7. 25 drawing boards 700 mm x 500 mm are to be manufactured using plywood.

(a) Calculate the total area of plywood required in square metres.

|                     |  |
|---------------------|--|
| Area of one board = |  |
| x 25 =              |  |

(b) Determine the number of sheets required to cut the boards if one sheet is  $2.9768 \text{ m}^2$ .

|                    |  |
|--------------------|--|
| Number of sheets = |  |
|--------------------|--|

(Round your answer up to the nearest number of sheets).

8. Describe why it is important to maintain a clean and tidy work area when working in a joinery workshop.

---

---

---

---

---

9. Name the type of lengthening joint shown in figure 3.

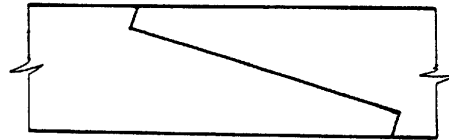


Fig. 3

10. State a difference in construction between a marking gauge and a mortise gauge.

---

---

---

---

11. Name **TWO** timbers, which are classified as softwoods

|     |
|-----|
| (1) |
| (2) |

12. State a use for the item of cupboard hardware shown in figure 4.

---

---

---

---

---

---

---

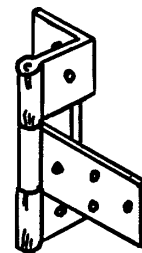
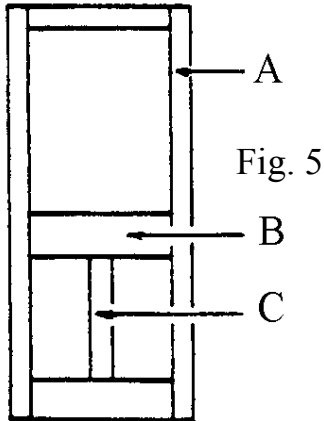


Fig. 4

13. List the **FOUR** main ingredients used when mixing a batch of concrete.

|     |
|-----|
| (1) |
| (2) |
| (3) |
| (4) |

14. Name the component parts of the half glazed and panelled door shown at figure 5.



|     |
|-----|
| (A) |
| (B) |
| (C) |

15. Sketch **ONE** method of edge jointing floor boarding other than a butt joint.

16. List **FIVE** other trades involved in the building of a house, apart from Carpenters and Joiners.

|     |
|-----|
| (1) |
| (2) |
| (3) |
| (4) |
| (5) |

17. Figure 6 shows a vertical section through a casement window. Name the members indicated.

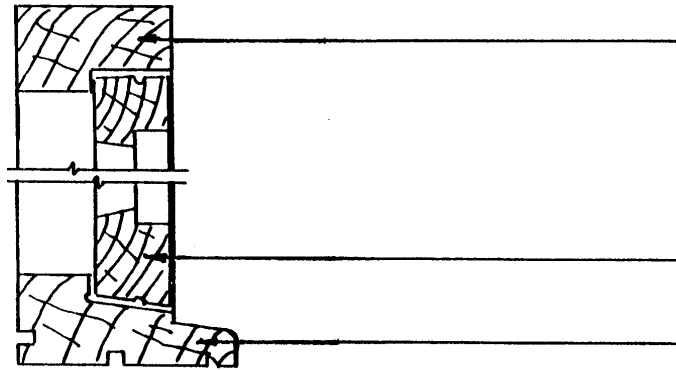


Fig. 6

18. (a) State **ONE** use for contact adhesive.

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

- (b) State **THREE** safety precautions to be observed when using it.

|     |
|-----|
| (1) |
| (2) |
| (3) |

19. Indicate on the circle at figure 7, the following :-  
 (a) Radius; (b) Circumference; (c) Diameter; (d) Centre.

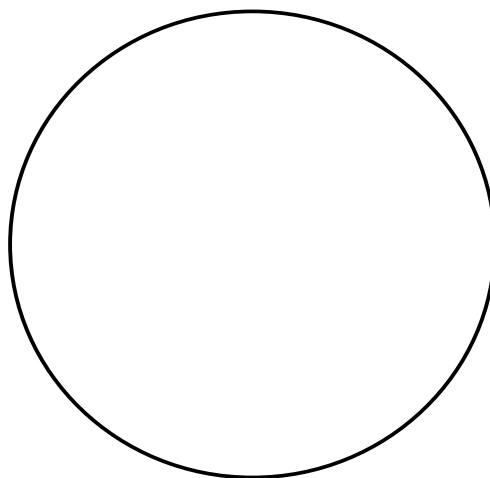


Fig. 7

20. List **TWO** items of essential protective wear that must be worn when using a portable electrically powered sanding machine.

|     |
|-----|
| (1) |
| (2) |

21. Name **FOUR** different types of nails.

|     |
|-----|
| (1) |
| (2) |
| (3) |
| (4) |

22. Name the joints shown in figure 8.

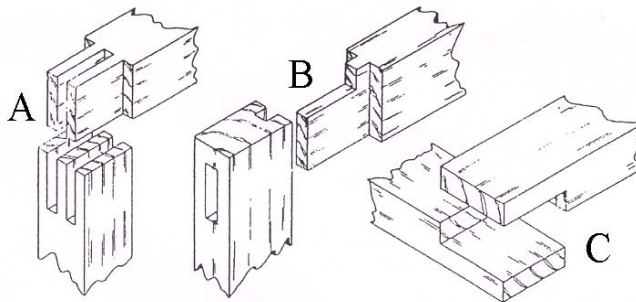


Fig. 8

|     |
|-----|
| (A) |
| (B) |
| (C) |

23. (a) State **ONE** situation where a "Water Bar" may be used.

---



---



---

- (b) Describe its purpose.

---



---



---



---

24. Figure 9 represents the cross section through the trunk of a growing tree. Indicate with arrows the positions of the parts listed below.  
(a) Bark; (b) Pith; (c) Cambium; (d) Heartwood.

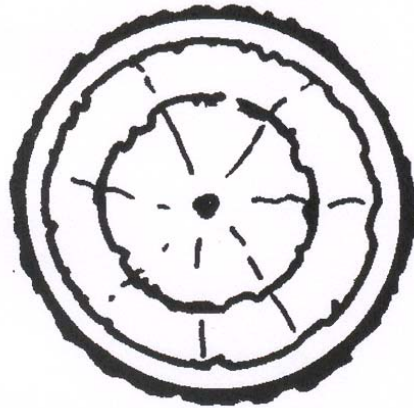


Fig. 9

25. When using an electric screwdriver, adjustment has to be made to the torque. Explain this adjustment with regard to fixing when using countersunk screws.

---

---

---

---

---

---

26. Sketch **TWO** methods of fixing hardwood lippings to cupboard sides which are constructed using 18 mm thick blockboard.



27. Describe **ONE** job which a Carpenter and Joiner may do during the construction of a house to assist both the :-  
(a) Bricklayer; and (b) Plumber.

|     |
|-----|
| (a) |
|     |
|     |
| (b) |
|     |
|     |

28. Sketch **TWO** of the following roof shapes :-  
(a) Gable; (b) Hipped; (c) Lean-to.

29. Name **ONE** type of common wood boring insect.

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

30. List **FOUR** safety precautions applicable to a joinery workshop or a building site.

|    |
|----|
| 1. |
|    |
| 2. |
|    |
| 3. |
|    |
| 4. |
|    |

31. A high wind has stripped the roof tiles off one hipped end of a pitched roof.

Given the span of the roof as 10 metres and a common rafter/spar length of 5.6 metres. Calculate the cost of re-tiling this area at £30-00 /m<sup>2</sup> (including 20% waste).

|                      |  |
|----------------------|--|
| Area of hipped end = |  |
| Total cost =         |  |

32. Using notes and sketches, indicate the correct angle a ladder must be placed before using it.

33. Describe a method of sanding by hand the following :-

(a) A softwood door that is to be painted.

---

---

---

---

---

---

(b) An oak table top in preparation to receive varnish/polish.

---

---

---

---

---

---

34. Sketch a "Tee" hinge and state which type of door it would most likely to be used on.

Type of door

35. Complete the following statements :-
- (a) When building a new domestic dwelling, the plans will be drawn up by an \_\_\_\_\_.
- (b) The amount of materials and labour required for a contract is undertaken by a \_\_\_\_\_.
36. Illustrate **TWO** natural timber growth defects.

37. When using an oil-stone for sharpening, state reasons for applying thin oil to the stone.

---

---

---

---

---

---

38. Illustrate a method of jointing each of the timber sections shown in figure 10 (a) and (b) other than using butt joints, and name the joint used in each case.

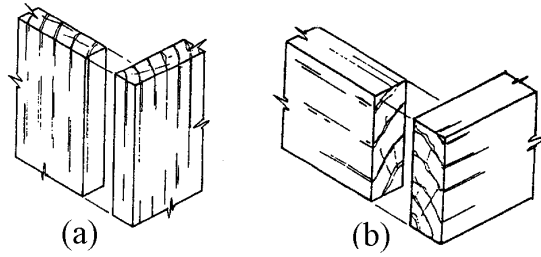


Fig. 10

39. With the aid of a **section sketch** indicate the pre-boring required for a steel, countersunk headed screw in hardwood.
40. Using notes and sketches, describe **TWO** methods of fixing a skirting board in position at the floor and wall junction.