

CANDIDATE NAME

CANDIDATE No					
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THE INSTITUTE OF CARPENTERS



PRE-VOCATIONAL CERTIFICATE

EXAMINATION

May 24th 2000

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

<p>This question paper remains the property of the Institute of Carpenters and all USED AND UNUSED PAPERS MUST BE RETURNED after the examination</p>
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1. The selection of a lock for the outside door of a house is between a cylinder night latch and a mortice lock. State which of these two locks would give the greater degree of security.

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2. State the purpose of providing fresh air inlets on outer walls below suspended ground floors.

3. What is the purpose of a skirting board and where is it used?

4. Describe the main difference between "Precast" and "In-situ" concrete.

5. Produce a circle and illustrate the following :-

(i) Radius; (ii) Circumference; (iii) Diameter; (iv) Centre.

6. The theorem of Pythagorus is put to good use in roof construction. Given that half the span of a pitched roof is 8 metres and the rise is 6 metres, determine the length of the common rafter/spar.

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7. State two important safety features when using a ladder on site.

1.
2.

8. List the tools necessary to construct a dovetail halving joint using 50 mm x 18 mm prepared timbers.

9. Figure 1 below is the outline of a timber log. Complete the details to show :-

i) Bark; ii) Cambium layer; iii) Annual or Growth ring; iv) Heartwood; v) Sapwood.

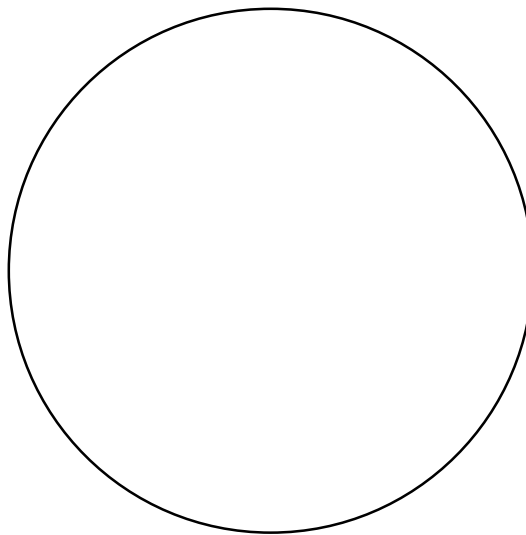


Fig. 1

10. Sketch or describe **TWO** of the following board/sheet materials and indicate their composition/construction and use.

i) Plywood; ii) Chipboard; iii) Blockboard; iv) Hardboard.

11. State a use for a butt hinge.

12. State the recommended mains voltage to be used on building sites and how this is achieved.

13. Indicate the component parts of the half glazed and panelled door shown below in Figure 2.

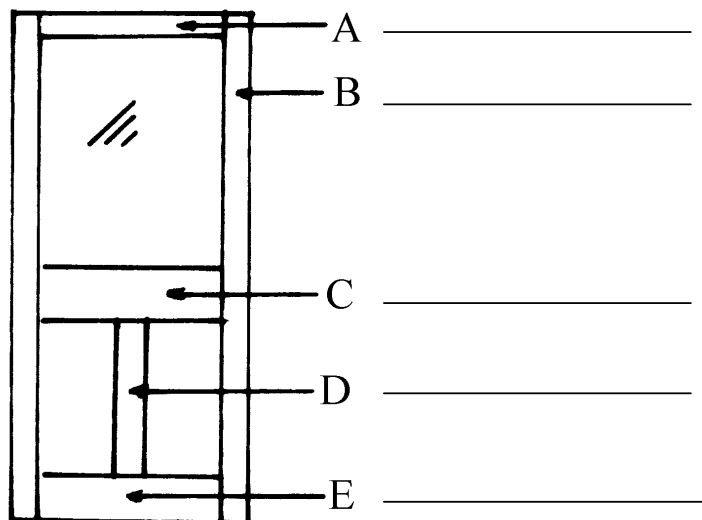


Fig. 2

14. Make a neat sketch to show one method of strutting to a single span floor.

15. On a kitchen floor unit, state where the plinth is fitted or found.

16. Indicate on Figure 3 the approximate position of a dado rail and a picture rail to a room.

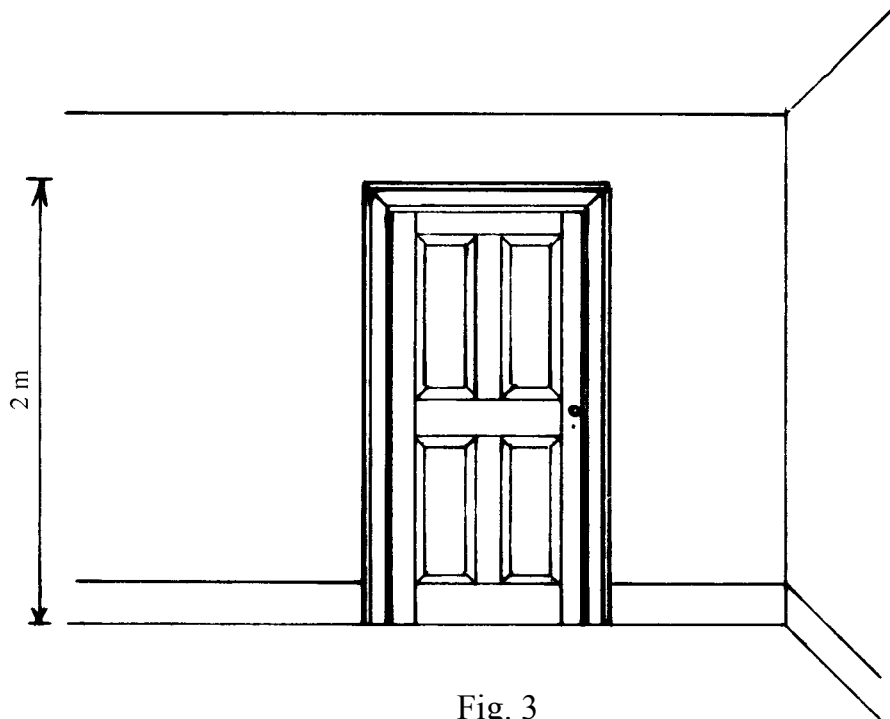


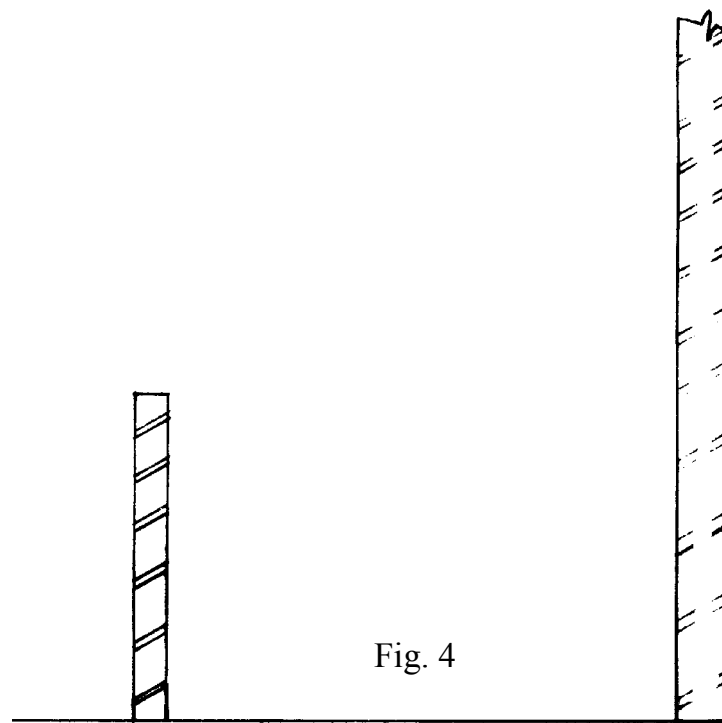
Fig. 3

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

1.
2.

18. Complete the sectional elevation at Figure 4 to show the main constructional details of a Lean-to Roof to include the following :-

(i) Wallplates; (ii) Rafter; (iii) Fascia.



19. State a use for each of the following types of nail :-

(i) Oval brad; (ii) Round headed wire nail.

i.
ii

20. Using drawing instruments and information provided divide the line ab into 7 equal parts.

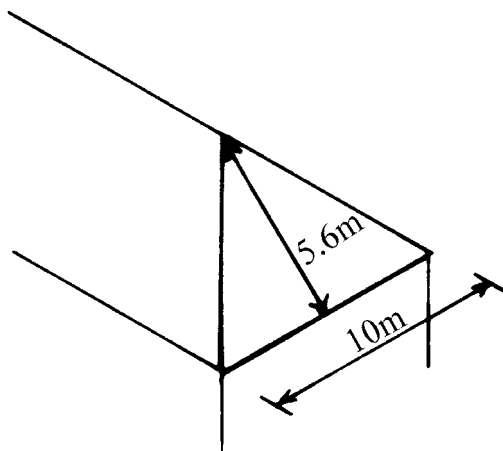
a. _____ b.

21. State the role of **TWO** of the following :-

(i) Site Agent; (ii) General Foreman; (iii) Clerk Of Works;
(iv) Building Control Officer.

22. Briefly explain the procedure of fixing plastic laminate to a wood based material using a contact adhesive in a well ventilated area with no naked flames.

23. A high wind has stripped the roof tiles off one hipped end of a pitched roof shown at Figure 5. Calculate the cost of re-tiling this area at £30.00 /m² (including waste).



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24. In a woodworking machine shop dust and noise levels can be high. State how these hazards are reduced.

Dust	
Noise	

25. Complete the sketches shown in Figure 6 below to show a Dovetail halving (half-lap dovetail) and a Bridle joint.

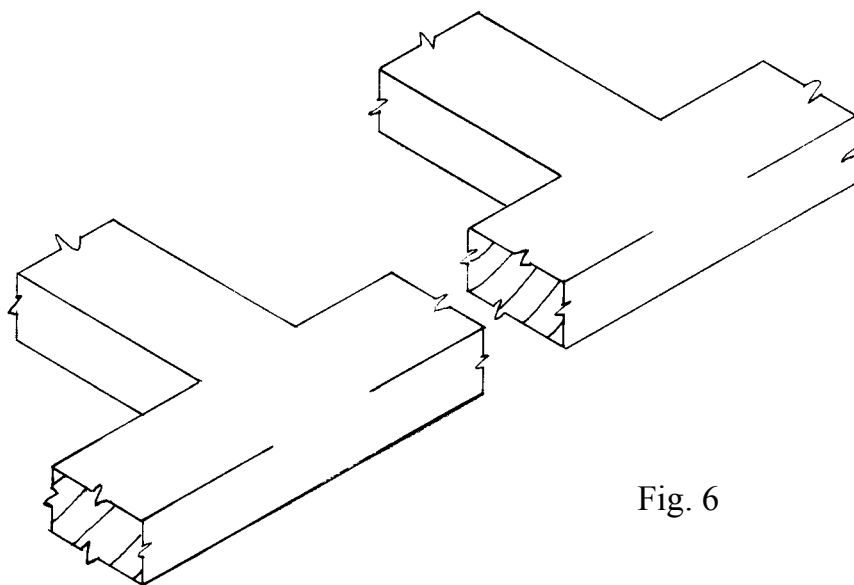


Fig. 6

26. Describe the different uses of a Smoothing Plane and a Jack Plane.

Smoothing Plane
Jack Plane

27. Briefly state the reason for seasoning timber and describe the natural air-seasoning method.

Reason for seasoning.

The natural air-seasoning method.

28. Given the choice between an ordinary electric drill and a hammer action drill, describe which of the two would be most suitable to bore holes for fixing plugs in hard brick walls.

29. A ledged, braced and battened door is to be provided to a garden area. Indicate on figure 7 the position of the braces.

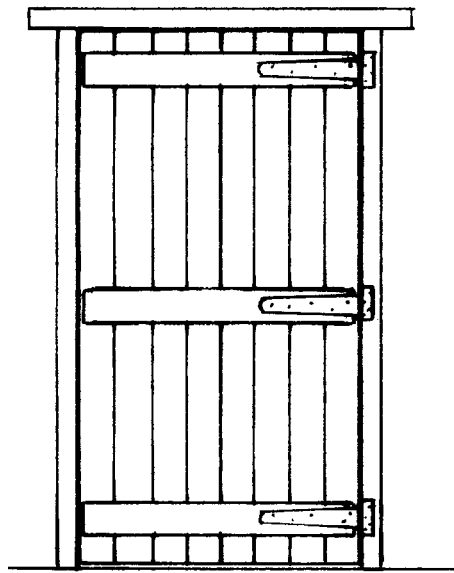


Fig. 7

30. Describe the basic difference between a mitre and a scribe.

Mitre.
Scribe

31. Complete figure 8 to indicate which type of handcut joint would be used between the end panel and the top front rail of a free standing kitchen floor unit.

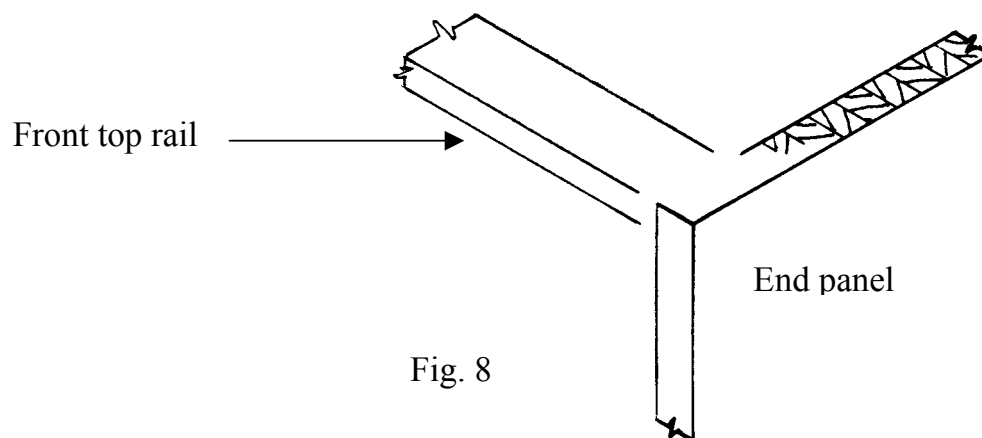
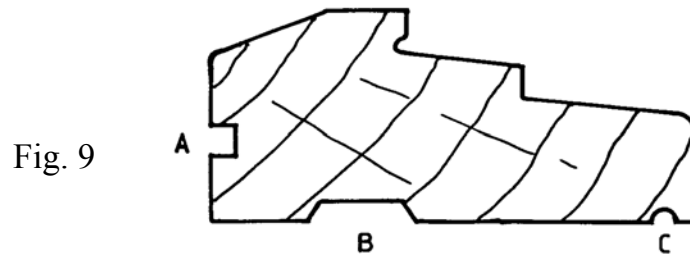


Fig. 8

32. State where a barge board is used.

33. Figure 9 shows a section of a window sill. State the purpose of the grooves at A, B, & C.



A
B
C

34. Describe briefly the method of transferring a datum level to other points on a building site using a straight edge and a spirit level.

35. Calculate the area of flooring required for a room 4.25 m by 6.35 m allowing 12.5% for waste.

Area of floor	
+ 12.5% Waste	
Answer	

36. Name the joint shown in figure 10, and where would it is used.

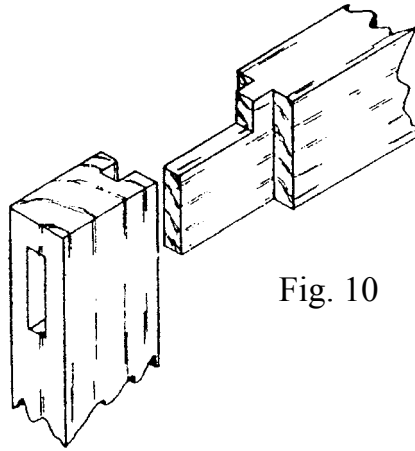


Fig. 10

Name of joint.

Where used.

37. Give a brief description, with sketches if necessary, of how to store good quality timber of equal thickness.

38. Describe the difference between a Marking Gauge and a Mortice Gauge.

Marking Gauge:
Mortice Gauge:

39. State **TWO** reasons why components such as nails and screws should always be stored correctly on site.

40. Illustrate **TWO** natural timber growth defects.

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