The Institute Of Carpenters

FOUNDATION CERTIFICATE

(*Formerly Pre-Vocational Certificate*)

Wednesday May 22nd 2002

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 names of the screw heads illustrated in Figure 1, and describe where each would be used.

a   b   c

Fig. 1
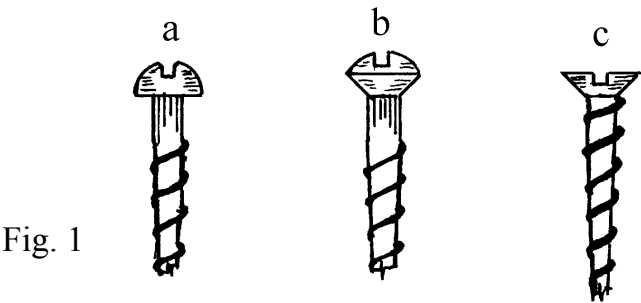
	Name	Where Used
a		
b		
c		

2. Apart from using wedges, describe a method of securing the tenon in a mortice.

_____

_____

_____

_____

_____

_____

3. Apart from the water supply, state **TWO** other utilities that would be required in a modern dwelling.

1.
2.
3.

4.	Sketch a cross-section through **TWO** of the following types of chisel stating **ONE** use for both choices :-

(a) Mortice;	(b) Bevel edge;	(c) Firmer.

_____

_____

_____

_____

_____

_____

5.	Add together the following :-

2.50 + .789 + 61.02 and divide your answer by 3.

_____

_____

_____

Sub Total	_____

÷ 3	_____

6.	List **THREE** notices which are required by law to be displayed in a Joinery workshop.

1.
2.
3.

7. Using a compass and the given baseline at Figure 2, construct either :-
a square; a right angled triangle; or an equilateral triangle.

Fig. 2

_____

8. Name, with reference to roof construction, the board which carries the
main rain water guttering.

9. State **ONE** advantage and **ONE** disadvantage of the following joints listed
below, when fitting skirtings.

Type of joint	Advantage	Disadvantage
Mitre		
Scribe		

10. State where the plinth would be fitted or found, on a kitchen floor unit.

_____

_____

_____

_____

_____

11. Sketch a joint which may be used between the head and jamb of a door lining/casing.

12. State the correct name of the ironmongery item shown in Figure 3.
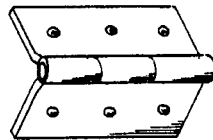
Fig. 3

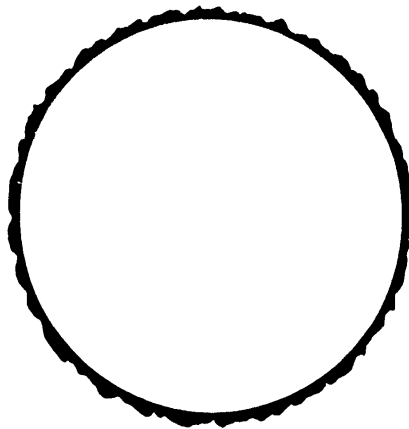13. Complete Figure 4 to show the "Through and Through" method of timber conversion.

Fig. 4

4

14. List **THREE** safety precautions to be observed when using an electrically powered, hammer action, portable drill.

1. _____

2. _____

3. _____

15. Sketch a smoothing plane cutting iron and indicate the correct angles for :-

(a) Grinding;   (b) Sharpening.

16. When working in a Joinery workshop, suitable clothing should be worn. List **FOUR** types of accident which could occur through ignoring this rule.

1. _____

2. _____

3. _____

4. _____

17. A sample piece of timber weighs 23gms before being dried in a kiln. Using the given formula, calculate the moisture content if the sample weighs 20gms after drying.

$$\frac{\text{Wet weight} - \text{Dry weight}}{\text{Dry weight}} \times 100$$

_____

_____
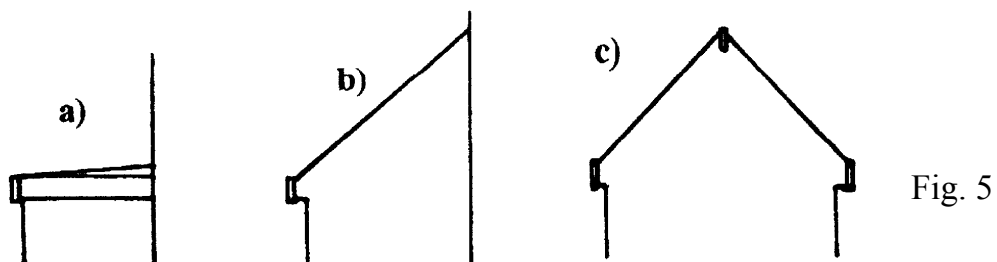
_____

_____

18. Describe the type of work undertaken by the following trades :-

Trade	Type of Work
Shopfitter	
Joiner	

19. Name the types of roof illustrated in Figure 5.

Fig. 5

a)	
b)	
c)	

20. Using notes and sketches, describe **TWO** methods of fixing a skirting board in position at the floor and wall junction.

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

(a) A situation where it would be used;

(b) How it may be checked for accuracy.

(a) _____

_____

(b) _____

_____

_____

22. Figure 6 shows a vertical section through a timber floor board. Name the parts indicated.

a)   **b)**

Fig. 6

a) _____
b) _____

23. Describe the correct method of storing plywood sheeting on site prior to use.

_____

_____

_____

_____

_____

24. Illustrate using sketches, the correct proportions/sizes for a haunched tenon.

25. Describe a situation where a mortice latch lock would be used.

_____

_____

_____

_____

26. State the function of a smoothing plane back iron.

_____

_____

_____

_____

_____

27. Sketch **TWO** examples showing where a Damp Proof Course (D.P.C.) may be used in a building.

28. State a type of adhesive which may be used when fixing plastic laminate to a work surface.

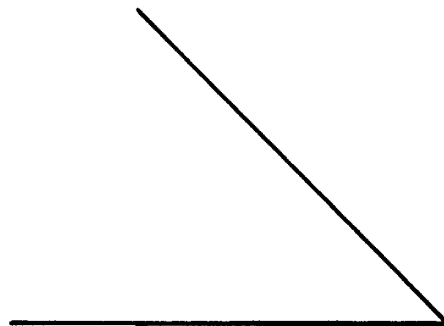29. Using drawing instruments, bisect the given angle in Figure 7.

Fig. 7

30. Describe the treatment necessary for formwork prior to pouring the concrete.

_____

_____

_____

_____

_____

31. State the purpose of the horns on a :-
    (a) Door Frame;
    (b) Door.

    (a) _____
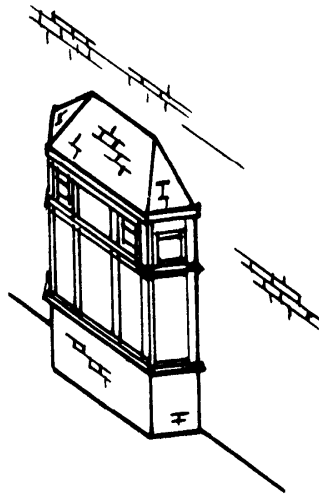
    _____

    _____

    (b) _____

    _____

    _____

32. Name the type of window illustrated in Figure 8.

Fig. 8

_____

33. Calculate the metre run of skirting required for a room 8.518 m long by 3.164 m wide. Allow for a door opening 900 mm wide, and 12.5% for cutting and waste in your calculation.

Metre run required =	
Minus 900 mm	
Plus 12.5%	
Total metre run required =	

34. Figure 9 shows a door frame prepared for site delivery. Explain briefly the purpose of each of the temporary components A and B.
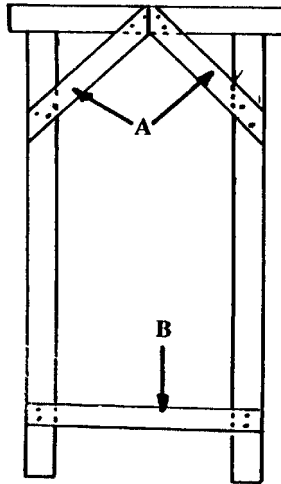

Fig. 9

A. _____

_____

B. _____

_____

_____

35.   Indicate on Figure 10, **ONE** method of fixing the laminated top to the horizontal rail of a table framework
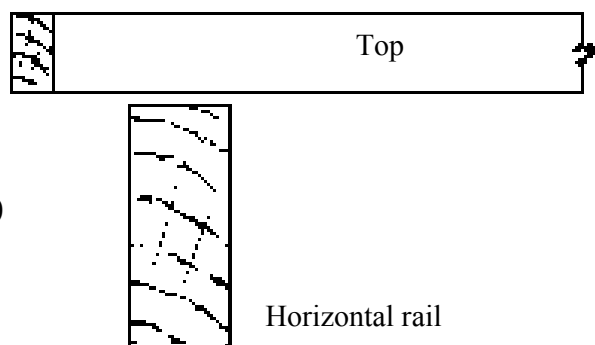
Fig. 10

Top

Horizontal rail

36.   Indicate by ticking under the appropriate headings, which of the species of timber are hardwoods or softwoods.

Species	Hardwood	Softwood
Sycamore		
Spruce		
Ash		
Redwood		
Hemlock		

37.   Figure 11 shows the wires to a fused 13 amp plug when the top is removed. State below the colour of sheathing to each wire.
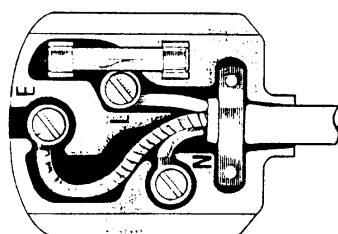
Fig. 11

Live_____   Neutral_____   Earth_____

38. State, with reference to suspended timber ground floors, why sleeper walls are honeycombed.

_____

_____

_____

_____

39. With the aid of sketches indicate the difference in construction between Plywood and Blockboard.

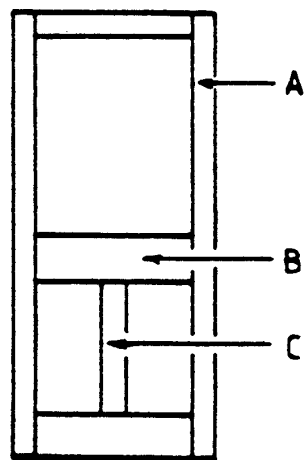40. Figure 12 shows the elevation of a panelled door. Name the parts indicated.

(a)	
(b)	
(c)	

Fig. 12