

CANDIDATE No.

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The Institute Of Carpenters

ADVANCED CRAFT EXAMINATION

Wednesday June 15th 2005

THEORY PAPER A

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

Candidates are advised **NOT** to spend not more than **1 HOUR** on this section.
Total time allowed for both papers A and B is **THREE HOURS**

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

Name:

Date of Birth:

Occupation:

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1. Prepare as an order, a list of ironmongery which would be required for :-
- (a) 2 No. External doors;
- (b) 8 No. Internal flush doors.

| Ironmongery required for 2 No. External Doors | Ironmongery required for 8 No. Internal Doors |
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2. (a) State the reason for incorporating a slight camber in the design of a "turning piece" which is to be used to construct a flat brickwork arch over a window opening 1.5 m wide.

- (b) List the sequence of operations when placing a turning piece ready to receive the brickwork.

3. Make sketches with explanatory notes to illustrate the following :-
(a) Storey rod; (b) Pitch board;
- (c) A method to ensure a tight fit is made at the shoulders of a mortise and tenon joint between handrail and newel post.
4. Calculate the cost per lineal metre of 225 x 25 square edged hardwood boards if the hardwood costs £580 per cubic metre.

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|--|--|
| Metre run obtained from 1 cubic metre = | |
| £580 ÷ Metre run = | |

5. (a) Show by means of sketches the following methods used in the conversion of timber from the log :-
- (i) Quarter sawn; (ii) Slab/through and through sawn.
- (b) Indicate on your sketches by dotted lines what effect shrinkage would have on the sections.
6. Explain the purpose of **FOUR** of the following when constructing timber floors :-
- (a) Creating a 50 mm space between an end joist and the brick/block wall;
- (b) Tongue and groove jointing of flooring boards;
- (c) Laying joists "bow" up;
- (d) Using thicker timbers for trimmer and trimming joists;
- (e) The regular spacing of joists;
- (f) Forming T & G header (end) joints in hardwood flooring boards.

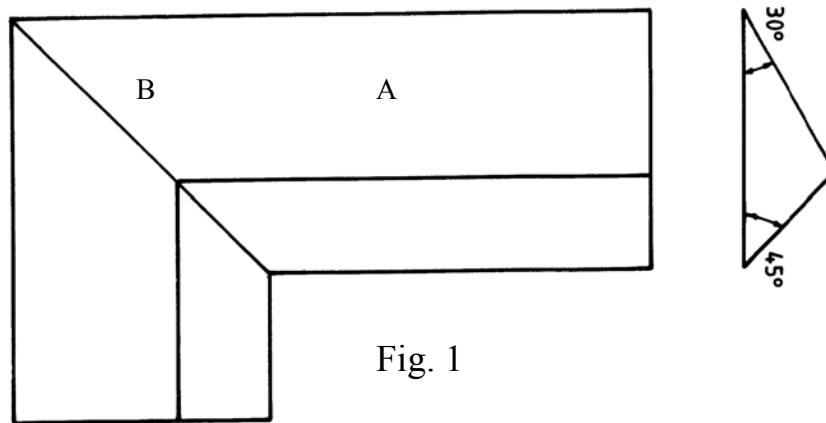
1.

2.

3.

4.

7. Figure 1 shows the plan and section of a roof. Indicate on this plan the :-
- True length of a common rafter for surface A;
 - True length of the HIP rafter shown at B;
 - Development of roof surface marked A.



8. A suspended ground floor is found to contain an attack of dry rot. List the sequence of operations necessary to eradicate the attack.

9. List **FIVE** items that would be found on a door schedule.

1.

2.

3.

4.

5.

10. Sketch a fully annotated vertical section through a mould box designed for the repetitive casting of twelve lintels to the sectional dimensions shown in Fig. 2.

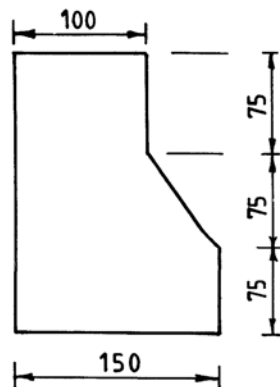


Fig. 2

11. Datum points are used at various positions within a building under construction.

(a) State the purpose of these datum points;

(b) Describe how a datum point may be transferred to another point within the building.

12. A 50 x 50 softwood ground is to be fixed to a concrete wall by means of a cartridge operated fixing tool.

(a) Describe a method of finding the correct cartridge strength;

(b) State **TWO** coding systems by which the strength of a cartridge may be indicated;

1.

2.

(c) Explain the procedure to be followed in the event of a cartridge misfire.

13. Sketch details for a one hour fire resisting door to show :-

(a) A horizontal section through the frame and part of the door;

(b) A front elevation to show the position and number of hinges required;

(c) State the type of hinges required.

14. With regards to temporary support of a building, describe with the aid of sketches **ONE** type of shoring.

15. Set out geometrically on the line A - B in figure 3 below, a segmental curve having a rise of 20 millimetres.

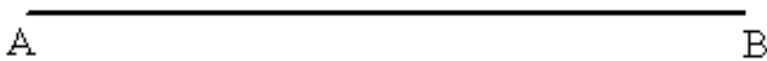


Fig. 3

16. State **THREE** reasons why Woodworking Machinery needs to be regularly serviced.

1.

2.

3.

17. Sketch the joint used between the head and jambs of a plain door lining.
18. Sketch horizontal sections through :-
- (a) The jamb and casement stile of a traditional window;
 - (b) The jamb and casement stile of a stormproof window.