



The Institute Of Carpenters

ADVANCED CRAFT EXAMINATION

Wednesday June 13th 2007

THEORY PAPER B

TIME ALLOWED THREE HOURS

Total Time Allowed For Papers A and B

THREE HOURS

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

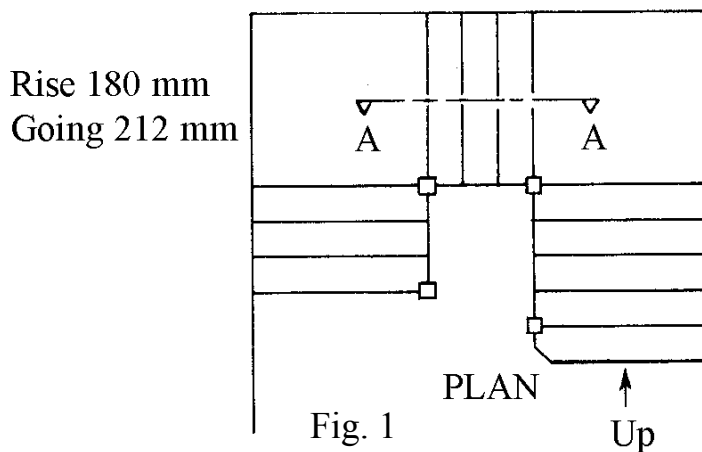
Section B: Consists of **8** questions only **FOUR** of which are to be answered.
All questions carry equal marks.

Each answer **MUST** be submitted on a separate sheet of paper, and your candidate number **MUST** be written in the top right hand corner of **EACH** answer sheet in the box provided.

Advanced Craft Examination
Associated Vocational Technology (Section B)

(Answer *FOUR* questions only)

1. Figure 1 shows the outline plan of a staircase for a domestic dwelling.
- (a) Draw to a scale of 1:5 a vertical section at A - A to include newel posts, handrail, string, treads and risers. Name and dimension all members.
 - (b) State the suggested formulae that may be used to check the stair for compliance with the current regulations.
 - (c) Describe with aid the of sketches :-
 - (i) ONE method of constructing a bullnose step;
 - (ii) A method of fixing the bullnose step to the newel post.



2. Roofs to detached houses are to be erected using trussed rafters.
- (a) Describe with the aid of sketches how the trussed rafters should be :-
 - (i) Stored on site;
 - (ii) Erected and fixed in place.
 - (b) Using notes and sketches, describe the provision required to support a water storage tank in each roof.

3. A refurbishment contract for a large building requires :-
- (a) Laminated plastic sheeting to be fixed, with the aid of a press in the workshop, and in-situ on the site.
 - (i) Specify a suitable adhesive for use in each situation and state a reason for your choice in each case.
 - (ii) List **FOUR** safety precautions to be observed when using adhesives.
 - (b) That all internal softwood joinery timber to be seasoned to a moisture content of between 13% and 15%. Describe a seasoning process used to achieve the required level of moisture content and include an example of how this may be checked with the aid of a formula.

4. Figure 2 shows the dimensions of a wall to be clad at a cost of £8.80 per square metre.

Calculate the :-

- (a) Area to be covered, excluding openings;
- (b) Area to be covered to include 12.5% for cutting, waste;
- (c) Total cost to include an addition of 17.5% for VAT.

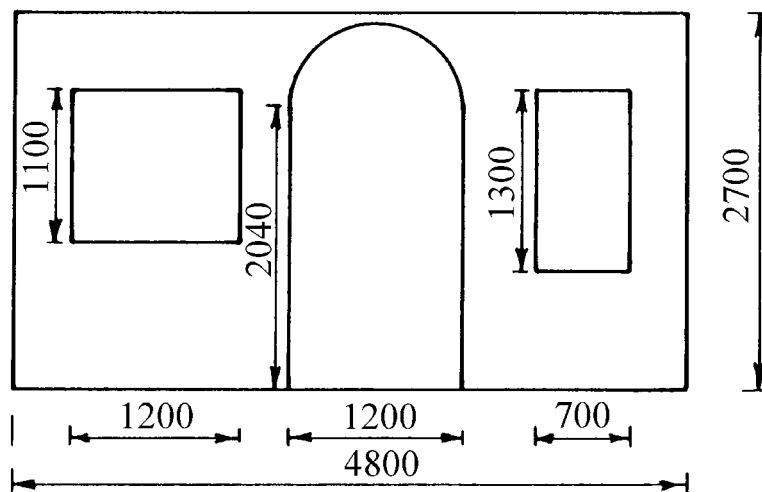


Fig. 2

5. (a) Name two electrically powered portable tools which may be used to advantage on site. Describe their function and state a specific operation for which each is best suited.
- (b) Cartridge operated fixing tools are indirect acting. Describe the principles involved.
6. Six concrete columns 300 x 300 on plan 2300 high are to be cast in-situ. The formwork is to be plywood with timber framing, held by metal column cramps. Plywood is available in 1220 x 2400 sheets.
- (a) Draw to a scale of 1: 5 a horizontal section of the formwork. State names and dimensions of materials.
- (b) Calculate the number of sheets of plywood and column cramps if all six columns are to be cast at the same time.
- (c) Describe three aids to the striking of formwork.
7. A pair of hardwood double action vestibule doors are to be fitted to the entrance of a bank.
- (a) Sketch two types of ironmongery which may be used to hang the doors and describe, with the aid of sketches, how each type of device may be adjusted for tension after fitting.
- (b) Sketch a horizontal section through the door hanging stile and frame to show the preparations required to receive each type of hanging device chosen.
- (c) Describe, with the aid of sketches, a method of overcoming the problems associated with fitting the frame to uneven wall and ceiling surfaces.

8. (a) To a scale of 1:20 draw the first floor plan to the dimensions shown in figure 3, to include first floor joists at 400 centres and trimming, indicating names of members and timber sizes.
- (b) Explain with the aid of sketches the function of **TWO** of the following relating to upper floors :-
- (i) Strutting,
 - (ii) Strapping,
 - (iii) Hangers.

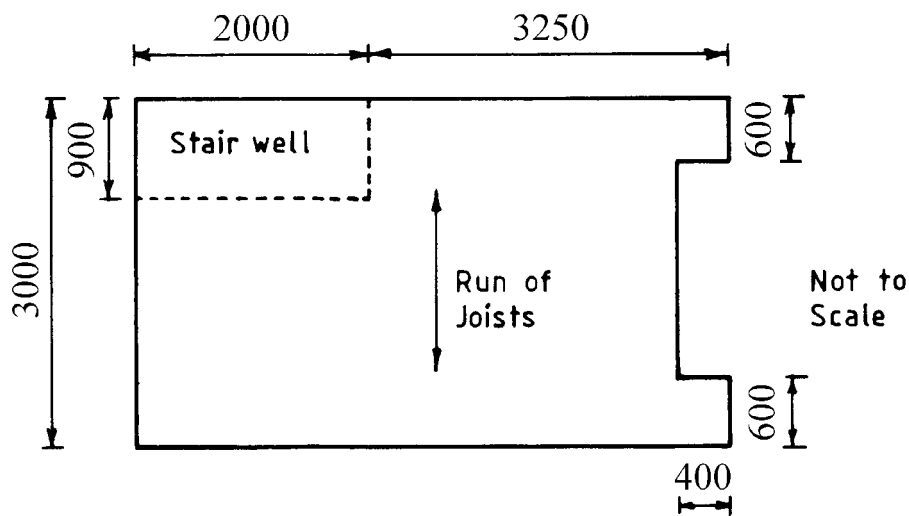


Fig. 3