The Institute Of Carpenters

ADVANCED CRAFT EXAMINATION

(Formerly Membership Examination)

June 18th 2002

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.

Member Examination

Associated Vocational Technology (Section B)

(Answer FOUR questions only)

1. Figure 1 shows the outline of a stormproof casement window.

   a) Draw full size, fully dimensioned vertical sections through :-

      i) the cill of the frame and bottom rail of the casement;

      ii) the transom and bottom rail of the vent light.

   b) Describe, with the aid of sketches, a method of setting up a single ended tenoning machine to produce the combed joint between the rails and stiles of the opening casement.

   c) Name a type of hinge commonly used when hanging stormproof casements.

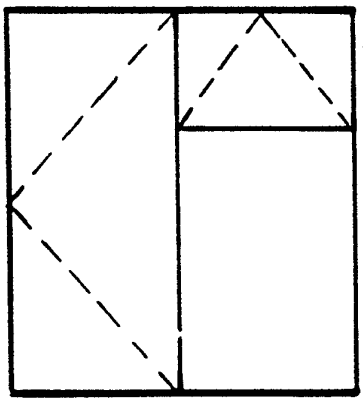

Fig. 1

2. a) Name **TWO** electrically powered portable hand 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 direct or indirect acting. Describe the principles involved with indirect acting.

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) 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. The plan of a landing and stair well in a domestic building is shown in Figure 2.

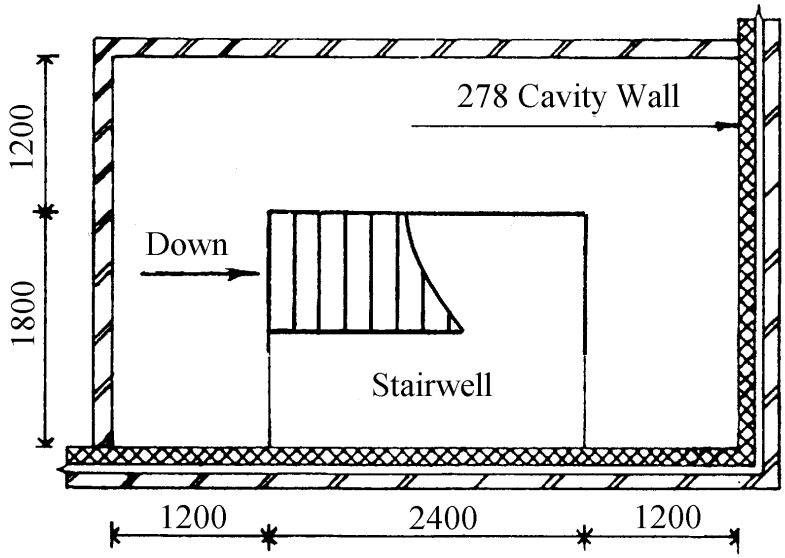

Fig. 2

a) Draw to a scale of 1:20, the plan of the floor to show the joist layout and trimming to stair well, including names and dimensions of the joists.

b) To scale of 1:5, draw a vertical section through a double floor with the binder showing partly below the underside of the joists. Show all necessary supports and coverings. Joists 50 x 175, Flooring 19 Chipboard, Steel Binder 125 x 250.

5. The plan of a rectangular building measures 16 m x 8 m and is to be covered with a 45^{o} equally pitched roof. Draw in first angle orthographic projection to a scale of 1:100 :-

   i) the plan of the roof including true lengths, plumb and seat cuts for one of the hip rafters;

   ii) the front elevation of the roof;

   iii) the end elevation of the roof;

   iv) the true shape of one of the hipped ends.

6. Figure 3 shows a plan of an opening that provides access to a recording studio.

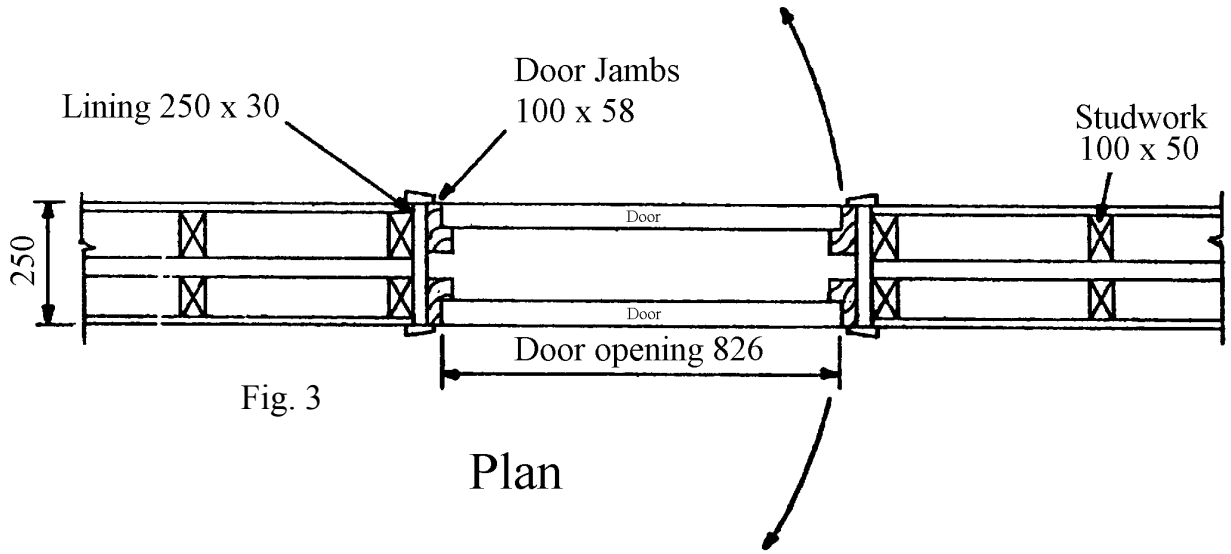

Fig. 3

Plan

a) Draw to a scale of 1:1, a part vertical section through one door indicating a method of construction that would reduce sound transmission.

b) Draw to a scale 1:2, a horizontal section through one door jamb, including part of the stud partition, and all finishings and insulation.

c) Specify ironmongery required for the doors.

7. An industrial building which is to be converted to a community hall has a double upper floor consisting of 63 x 175 bridging joists supported on 150 x 400 British Standard Steel Beams. The B.S.Bs. are to be cased with 32 mm thick hardwood moulded framing with 15 mm thick faced plywood panels.

a) To a scale of 1:2 draw :-

i) a detailed vertical section through a beam to include cradling and panel sections indicating a method of jointing the lower angles of the framed panels

ii) how the panels may be fixed to the cradling.

b) Describe the operations when preparing the worn existing upper floor decking to receive a generous sound installation and a new surface of 19 mm thick hardwood strip flooring.

8. An order to a timber merchant is as follows :-

25 pieces 2500 x 225 x 50

18 pieces 3700 x 100 x 38

8 pieces 4300 x 200 x 25

12 pieces 2700 x 75 x 75

Calculate :-

a) The total cost of the timber at £270.00 m^3

b) The final cost of the order when 2.5% is deducted for prompt payment and 17.5 % added for V.A.T.

Institute Membership

Member membership of the Institute of Carpenters is available to candidates achieving success in the Institute's Advanced Craft Examination, also to Teachers/Lectures/Instructors of Woodcrafts possessing a trade background.

Further information and application forms may be obtained from

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