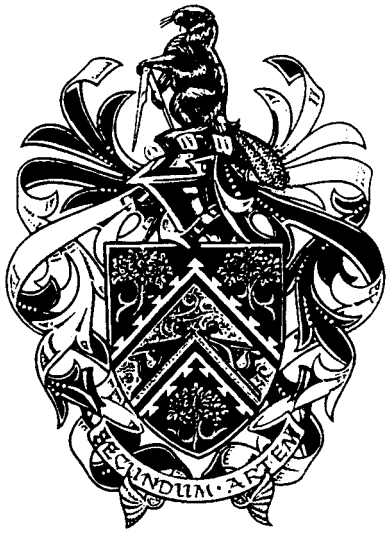
THE INSTITUTE OF CARPENTERS



Fellowship Examination

15th - 19th June 1998

Paper 1: CARPENTRY PRACTICE

TIME ALLOWED: THREE HOURS

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

To obtain full marks Candidates must answer SIX questions. The answer to each question should be submitted on a separate sheet of paper.

The question number and your candidate number must be clearly written in the top right-hand corner of each answer sheet.

1. Describe briefly **SIX** of the following items and state where each is used :-

   a) Stress Grading;
   b) Finger Jointing;
   c) Timber Connectors;
   d) Insulation;
   e) Glue Line;
   f) Soundproofing;
   g) First Fixings.

2. A cast in-situ octagonal in section reinforced concrete column is required with a good surface finish. It is to be 4000 mm high with each side of the contained square 450 mm wide at the bottom and 300 mm wide at the top.

   Describe with the aid of sketches where necessary : -

   (a) How the formwork is to be constructed;
   (b) The materials used;
   (c) How it is to be erected;
   (d) The provision for striking.

3. An exterior straight flight timber stair with a top landing, is to be provided for private access to a store. The site is 200 miles away from the workshop and various parts have to be delivered loose for erection. State in the form of a brief report, the site measurements required, any special features, and information required for setting out.

4. In connection with the erection of a multi-storey car park in reinforced concrete, woodworking machinery and electrically powered portable hand tools are to be installed on site for preparation of the formwork.

   a) List the items of machinery and equipment recommended.

   b) State the uses of the selected machinery.

   c) List **SIX** safety precautions to be observed when using each of the following : -

      i) Electrically powered portable hand tools;
      ii) Woodworking machinery.

5. An independent scaffold is to be erected for the repair work to an eaves 4000 above ground level.

   a) Sketch sufficient details of the scaffold to indicate the main requirements of the current statutory safety legislation.

   b) In connection with the use of the scaffold, define the responsibilities of the :-

      i) Employer;
      ii) Employee.

6. A two storey building is to be built using timber framed platform construction.

a) Explain and illustrate with dimensioned sketches, the techniques employed in this form of construction;

b) Explain the problems associated with the construction of timber framed buildings;

(c) Compare this construction with traditional building.

7. a) A site progress chart shows carpenters work under two headings, First Fixing and Second Fixing.

i) State in list form the items of work carried out in each category;

ii) State the reasons why First and Second Fixing may not be carried out at the same time.

b) Datum lines and levels are necessary for many purposes in the construction of a building.

i) State the main purpose of a Datum line;

ii) The establishing of a datum peg and to what it is referred.

8. The drawing below represents the plan of an irregular shaped building which has level eaves, hipped on the splayed end of the roof which is equally pitched at 45°.

To a scale of 1:100 draw the following the :-

a) Plan of the hipped roof showing the position of the hips and six common rafters;

b) True shape of surface "A";

c) Dihedral angle formed between surfaces "A" and "B";

d) True length and bevels for the hip rafter between surfaces "A" and "B".