

supervision must be made by the committee of each school. Either tools must be provided for the practical examinations, or the candidates must be required to bring them.

1. *Wood-working*.—Candidates will be provided with suitable sawn pieces of wood, and will be required to reduce them by the plane, saw, or chisel to any simple forms shown by dimensioned sketches. They will also be required to construct from such pieces of wood any of the simpler joints, or any very simple combination of such joints, to dimensioned sketches.

2. *Drawing*.—Candidates should have clear notions regarding the accurate representation of solids on a flat sheet of paper. The nature of the following kinds of projection should be understood: (a.) Orthographic projection (plan, elevation, section), in which the projectors are at right angles to the plane of projection. (b.) Oblique projection, in which the projectors are parallel to each other, but oblique to the plane of projection. Candidates will be required to show ability to draw accurately to scale, in plan and elevation, simple solids, and some of the simpler joints, such as housing, angle-bridle, open mortise and tenon, dovetail-halving, lap-halving, &c.; also very simple frames or combinations of joints. The joints may be drawn in their simplest positions, compatible with the clear representation of their form and dimensions. Candidates must also show ability to represent simple joints in oblique projection, the plane of projection being parallel to one set of the principal faces of the object, so that the projection shows the true shape of these faces. Oblique projections, being intended to be pictorial views, may be simply neat freehand sketches.

To pass the examination, candidates must satisfy the examiners in each of the subjects 1 and 2. The number of marks will be apportioned as follows: Wood-working, 250 marks; drawing, 100 marks.

Final Examination.

Candidates for the final examination must have previously passed the first year's examination. The final examination will consist of more advanced exercises in wood-working and drawing, and also of questions on the technology of wood-work and methods of instruction.

1. *Wood-working*.—Exercises similar to those for the first year, but more difficult. Dimensioned sketches will be given as a guide to what is required. The accuracy of fitting, accuracy of dimensions, and the time taken will be considered in valuing the work done.

2. *Drawing*.—Making freehand sketches of, and drawing to scale from, dimensioned sketches, ordinary joints used in wood-work, or any simple frames or simple framed objects made of wood. Hand sketches of simple joints and frames as seen in oblique projection.

3. The written examination will include questions founded on such subjects as the following: (1.) Woods: Places from which some of the commoner woods are obtained; their characteristic properties and uses; the general structure of cone-bearing and leafy timber trees; the meaning of seasoning timber; effects of shrinkage and warping; identification of specimens of wood. The questions will be limited to oak, ash, elm, beech, mahogany, sycamore, basswood, white-deal (spruce), red-pine (Scotch fir), yellow-pine. (2.) Tools, &c.: Description of the construction and mode of using ordinary wood-working tools; methods of using nails, screws, and glue. (3.) School management: Fittings and cost of equipment of school workshop; arrangement of pupils; character of instruction and sequence of lessons; the special characteristics of Sloyd and of other systems of teaching.

To obtain a certificate candidates must pass in each of the three subjects 1, 2, and 3. The number of marks will be apportioned as follows: (1) Wood-working, 400 marks; (2) drawing, 100 marks; (3) written examination, 100 marks.

Works of Reference.—Barter's "Manual Instruction: Wood-work" (Whittaker and Co.); Goss's "Bench-work in Wood" (Trubner); Wood's "Manual Instruction in Wood-work" (Simpkin, Marshall, and Co.); Ward's "Timber Trees" (Macmillan); and "The Oak" (Paul, Trench, and Co.); Low's "Solid Geometry," Part I. (Longmans); Young's "Manual Training for the Standards," "Manual Instruction and Drawing" (G. S. Barter, Whittaker and Co.).

MANUAL TRAINING—METAL-WORK.

With the view of certifying to the efficiency of teachers to give instruction in metal-work, the City and Guilds of London Institute is prepared to issue certificates to qualified teachers of public elementary schools on the following conditions:—

1. Candidates must have already passed the the Institute's first year's examination in manual training, wood-work.

2. The candidates will be required to give evidence of having regularly attended, during each of two sessions, a course of at least twenty practical metal-working lessons given on separate days, each of not less than two hours' duration, in a school or class registered by, and under an instructor approved by, the Institute. In order that a class may be registered, it must be under the direction of a committee of a School Board, or Municipal Council, or technical school, or other public body.

3. The candidates will further be required to pass two examinations, one at the end of each year's course, to be conducted by examiners appointed by the Institute, and to pay a fee of 10s. for each examination.

Teachers of wood-work in public elementary schools (whether certificated teachers or not) who give evidence of having satisfactorily taught a class of pupils in wood-work for a period of not less than one year, and who produce a certificate from Her Majesty's Inspector to that effect, are eligible under the conditions given in paragraph 2 to sit for the first year's examination, and subsequently for the final examination in manual training, metal-work.

Teachers of metal-work who give evidence of having satisfactorily taught, for a period of two years, a class of pupils in metal-work at a public elementary school, and who produce a certificate from Her Majesty's Inspector to that effect, are eligible without attendance at any class to sit for the first year's examination in manual training, metal-work.