



1933

Building Construction (3rd Year): Technical School Examinations 1933

Department of Education: Technical Instruction Branch

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COURSE IN BUILDING.

(34)

AN ROINN OIDEACHAIS.
(Department of Education.)

BRAINSE AN CHEARD-OIDEACHAIS.
(Technical Instruction Branch.)

TECHNICAL SCHOOL EXAMINATIONS.
1933.

BUILDING CONSTRUCTION.
(Third Year.)

Tuesday, May 16th—7 to 10 p.m.

Examiner—W. S. BLAIR, Esq.

Co-Examiner—F. W. SINCLAIR, Esq.

GENERAL INSTRUCTIONS.

You are carefully to enter on the Answer Book and Envelope supplied your Examination Number and the subject of examination, but you are not to write your name on either. No credit will be given for any Answer Book upon which your name is written, or upon which your Examination Number is not written.

You must not have with you any book, notes, or scribbling paper.

You are not allowed to write or make any marks upon your paper of questions.

You must not, under any circumstances whatever, speak to or communicate with another candidate; and no explanation of the subject of the examination may be asked for or given.

You must remain seated until your answer-book has been taken up, and then leave the examination-room quietly. You will not be permitted to leave before the expiration of twenty minutes from the commencement of the examination, and will not be re-admitted after having once left the room.

If you break any of these rules, or use any unfair means, you are liable to be dismissed from the examination, and your examination may be cancelled by the Department.

Three hours are allowed for this paper. Answer-books, unless previously given up, will be collected at 10 p.m.

INSTRUCTIONS.

Read the General Instructions on page 1.

- (a) Not more than six questions are to be attempted.
- (b) Answers must be written in *ink*. Diagrams may be in *pencil*.
- (c) Small diagrams and sketches, to illustrate written descriptions, should be made upon squared paper.
- (d) Write the number of the question before the answer.
- (e) Equal values are attached to the questions.

1. A floor in a large public building is constructed of 12 inch by $7\frac{1}{2}$ inch steel girders, 7 inch by 4 inch steel binders and 7 inch by 2 inch wood joists carrying $1\frac{1}{4}$ inch flooring.

Draw longitudinal and cross sections showing the construction. Scale one-sixth.

2. A brick chimney stack in Flemish bond is reduced by weathering from 6 feet 9 inches wide just above the ridge of roof to 4 feet 6 inches wide 9 courses higher up.

Draw an elevation showing the bonding of the weathered courses and two courses above and below. Scale $\frac{3}{4}$ inch to 1 foot.

3. Explain the meaning of the following terms in Plasterer's work:—Counter lathing, Screeds, Rendering, Putty, Gauged stuff.

4. Describe the following bricks and the special purpose for which each is used:—Blue Staffordshire bricks, Malmcutters, Stocks, Enamelled facing bricks, Firebricks.

How are Malm cutters prepared?

5. Draw a line diagram of a steel roof truss for a span of 40 feet, and details of the joints at the head and foot of the principal rafter. Draw sectional views of all the members of the truss.

6. Draw to a scale of 1 inch to 1 foot a vertical section through a 2 inch casement door, opening from a room to a balcony on the same level. The door to be 6 feet high, half glazed and opening inward. A 2 foot fanlight over is hinged to the transome, opening inward at top. The thickness of wall is $13\frac{1}{2}$ inches. Draw an enlarged detail, showing how you prevent rain driving in at the sill.

7. Make drawings illustrating the following terms in masonry:—Joggle joint; Weathered or saddle joint; Rag bolt; Corbel; Blocking course; Plinth; Kneeler. State the use of each.

8. Draw a horizontal section through both jambs of a window opening in a 22 inch snecked rubble wall. The opening to have moulded dressings and splayed inside jambs. Show the joints of the stones. Scale one-sixteenth.

9. Draw a vertical section through a panelled dado in wood, showing how it is fixed to a brick wall. The height of dado to be 3 feet 6 inches and to have moulded skirting and surbase moulding. Scale one-twelfth.

10. Draw to a scale of 1 inch to 1 foot the centre for an elliptical masonry arch, span 5 feet 6 inches, rise 1 foot 9 inches.

Show the provision made for supporting and "striking" the centre.

11. Make sectional drawings approximately full size, illustrating two methods of patent glazing without putty.

12. Specify and describe the work required and the materials used in the following:—(a) Painting a new deal entrance door to a good-class dwellinghouse. (b) French-polishing a new mahogany door.

13. Describe the method of manufacture of a seamless lead pipe. Illustrate with sketches.

14. A town house in a terrace has kitchen and scullery in the basement, a W.C. on the ground floor, bath room and W.C. on the first floor. The drain passes under the house to the street sewer.

Illustrate how you would insure efficient sanitary drainage and write a brief specification for the work.