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Machine Drawing: (1st Year): Technical School Examinations 1934

Department of Education: Technical Instruction Branch

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COURSES IN MECHANICAL ENGINEERING.

(57.)

AN ROINN OIDEACHAIS.

(Department of Education.)

BRAINSE AN CHEÁRD-OIDEACHAIS.

(Technical Instruction Branch.)

TECHNICAL SCHOOL EXAMINATIONS.

1934.

MACHINE DRAWING.

(First Year.)

Monday, May 28th—7 to 10 p.m.

Examiner—ERNEST E. JOYNT, ESQ., M.I.MECH.E.

Co-Examiner—J. P. HACKETT, ESQ., B.E., A.R.C.S.C.I.

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) Written answers and freehand sketches must be given in the answer book, the drawing-paper being *only* used for finished drawings of Question No. 2.

(b) Drawings and sketches may be finished in *pencil*.

(c) Answers to questions must be written in *ink*.

(d) Write the number of the question distinctly in the margin of your paper before the answer.

1. Iron Casting—An iron casting is provided. Make neat freehand sketches in sectional elevation and in plan, complete with full dimensions.

[30 marks.]

2. Piston—The accompanying drawing shows full particulars of a steam engine piston and piston rod end. Draw two views to a scale of one-third full size, as follows :—

(a) Side elevation, the upper half to be a sectional view, the lower half to be an outside view.

(b) End view, looking from left to right.

Show the piston rod end with nut and the piston rings in their proper positions in the complete assembly.

[60 marks.]

One only of the following questions may be answered.

3. Bearing—Show by means of a neat sketch the arrangement of a simple bushed bearing, explaining how the bush is retained securely in position, and the method of lubrication.

[10 marks.]

4. Keys—Make sketches of three different forms of keys suitable for transmitting the rotary motion of a shaft to a wheel.

[10 marks.]

5. Engineering Materials—Write a brief note on the properties of the following materials and the uses to which they are put : Cast iron, mild steel, cast steel.

10 marks.]

