

1934

## Drawing of Electrical Design (4th Year): Technical School Examinations 1934

Department of Education: Technical Instruction Branch

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# COURSE IN ELECTRICAL ENGINEERING

(56A)

AN ROINN OIDEACHAIS  
(Department of Education).

BRAINSE AN CHEÁRD-OIDEACHAIS  
(Technical Instruction Branch).

TECHNICAL SCHOOL EXAMINATIONS.  
1934.

DRAWING OF ELECTRICAL DESIGN.  
(Fourth Year.)

Wednesday, May 30th—8.30 to 10 p.m.

Examiner—R. G. ALLEN, ESQ., B.S.C., A.R.C.S.C.I., M.I.E.E.

Co-Examiner—PEADAR A. MACCIONNAITH, M.S.C., A.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 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 beginning 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.

One and a half hours are allowed for this paper. Answer books, unless previously given up, will be collected at 10 p.m.

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Design approximately the main dimensions and draw to scale a representative view of one of the following:—

1. A field magnet pole of a slow speed three phase alternator. Data given:—

No load line voltage .. .. .	10,000
Cycles per second .. .. .	50
Speed R.P.M. .. .. .	250
Inner diameter of the stator .. .. .	300 cms.
Number of conductors per phase .. .. .	1,200

The attachment of the pole to the magnet wheel should be shown and its winding indicated.

2. A single phase transformer. Data given:—

Output .. .. .	500 K.V.A.
Cycles per second .. .. .	50
Type .. .. .	Core
Primary volts .. .. .	10,000
Secondary volts .. .. .	500
Nett cross section of the core .. .. .	50 × 50 cms.
Mean length of the magnetic circuit .. .. .	400 cms.

The two windings and the method of insulating them from each other and the core should be carefully shown.

3. A switch board with panel equipment and connections for a motor generator set composed of a three-phase synchronous motor and a direct current compound wound generator, the set to operate at a leading power factor 0.8. The supply line voltage is 5,000 at 50 cycles per second and the full load D.C. output is 800 amperes at 220 volts.