



1934

# Organic Chemistry (Honours): Technical School Examinations 1934

Department of Education: Technical Instruction Branch

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# COURSES IN APPLIED CHEMISTRY.

(47)

AN ROINN OIDEACHAIS.  
(Department of Education.)

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

TECHNICAL SCHOOL EXAMINATIONS.  
1934.

ORGANIC CHEMISTRY.  
(Honours.)

Monday, May 28th—7 p.m. to 10 p.m.

Examiner—A. G. G. LEONARD, ESQ., PH.D., F.R.C.S.C.I., F.I.C.

Co-Examiner—SEOSAMH Ó CIARDHUBHÁIN, M.Sc.

## 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 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.

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

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## INSTRUCTIONS.

Read the General Instructions on Page 1.

- SIX questions only may be attempted.
- Equal values are attached to the questions.
- Answers must be written in INK.
- Write the number of the question distinctly, in the margin of the paper, before the answer.
- Wherever possible, chemical changes should be indicated by equations, and laboratory or factory operations should be illustrated by sketches.

1. An organic compound contains carbon, hydrogen, nitrogen, sulphur, and sodium.

Outline the principles of the methods you would follow to determine the percentage of each of these elements.

2. Give an account of the properties and discuss the constitution of benzene.

3. Describe a method for the manufacture of artificial silk.

4. How may malonic ester be prepared? Give examples of its use as a synthetic agent.

5. How is potassium or sodium cyanide prepared commercially?

Describe two industrial uses of the alkali cyanides.

6. Describe *in detail* how you would prepare benzaldehyde. Give an account of the properties of benzaldehyde.

7. How would you prepare phenylhydrazine?

Explain the importance of this substance as a laboratory reagent.

8. Describe as fully as you can how sucrose is manufactured from beet.

9. By what tests would you identify the following substances:—(a) mercuric cyanide; (b) glycerol; (c) naphthalene; (d) tartaric acid; (e) potassium cyanate?