

AN ROINN OIDEACHAIS
(Department of Education).

BRAINNSE AN MHEADHON-OIDEACHAIS
(Secondary Education Branch).

LEAVING CERTIFICATE EXAMINATION, 1938.

LOWER COURSE.

CHEMISTRY.

MONDAY, 20th JUNE.—AFTERNOON, 4 P.M. TO 6 P.M.

(a) Not more than six questions to be attempted. All questions are of equal value.

(b) Chemical reactions should be expressed in words and represented by chemical equations.

(c) Answers should be illustrated by sketches wherever possible.

1. Describe the methods by which the composition of water by weight and by volume have been determined.

How have these experiments fixed the atomic weight of oxygen?

2. What are the principal elements present in the atmosphere, and what kinds of elements are present there in small quantities?

How do you know that air is a mixture and not a chemical compound?

3. How is carbon monoxide made on the industrial scale? Describe the properties of carbon monoxide and mention its uses.

4. How may sulphur dioxide be prepared (a) from sulphur, and (b) from sulphuric acid?

How may sulphur trioxide be made from sulphur dioxide?

5. Describe the manufacture of phosphorus.

What are the allotropic modifications of phosphorus, and how are they converted into one another?

6. What are the halogens, and why are they so called?
Compare the properties of the halogens with one another.

7. Put down the chemical name and the chemical formula for each of the following substances, and state how (a) heat and (b) sulphuric acid acts on each of them: (1) sal ammoniac, (2) nitre, (3) baking soda.

8. How is ethyl alcohol made from potatoes?
How is aldehyde made from ethyl alcohol?

9. Explain what is meant by the basicity of an acid. Illustrate your answer by referring to hydrochloric acid, sulphuric acid, and phosphoric acid.

10. What is the composition of limestone?
What happens when water containing carbon dioxide percolates through land containing limestone?

11. From what ore is aluminium manufactured?
Give a brief description of the process of manufacture.

12. How would you make :

- (a) ferric sulphate from ferrous sulphate;
- (b) zinc oxide from zinc chloride;
- (c) copper oxide from copper nitrate?