

# AN ROINN OIDEACHAIS

(Department of Education).

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LEAVING CERTIFICATE EXAMINATION, 1946.

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## CHEMISTRY.—PASS.

WEDNESDAY, 19th JUNE.—MORNING, 10 TO 12.

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Not more than *six* questions to be answered. All questions have the same value.

1. Describe (with sketch) a method for the preparation of carbon dioxide in the laboratory and give an account of its properties. Give the names and formulae of the two compounds that are formed when carbon dioxide is passed into a solution of caustic soda.

2. Describe the action of heat on (a) blue vitriol, (b) chalk, (c) nitre and (d) sal ammoniac.

3. Where is native sulphur found and how is it extracted and purified? Give a brief account of the allotropes of sulphur.

4. Give an account of the method of preparation and the properties of nitric oxide. How does air act on nitric oxide?

5. State Dulong and Petit's Law.

The oxide of a metal contained 10.38 per cent. of oxygen. The specific heat of the metal was 0.031. Find its exact atomic weight.

6. Explain the terms oxidation and reduction.

Show that the formation of chlorine from hydrochloric acid is an oxidation and that the formation of ferrous chloride from ferric chloride is a reduction.

7. Name the chief constituents of air and describe a method for separating them from one another.

8. Explain, with examples, the terms (a) basic oxide, (b) acid anhydride, (c) tribasic acid.

9. How may the solubility of a salt such as nitre at a given temperature, say  $30^{\circ}\text{C}$ , be ascertained by experiment? How may a solubility curve be made?

10. How is hydrogen sulphide prepared in the laboratory? What *do you see* when hydrogen sulphide is added to a solution of (a) copper sulphate and (b) stannous chloride? Explain the reaction which occurs in each case. (Give equations).

11. How would you obtain (a) aluminium oxide from alum, (b) cupric oxide from copper and (c) ferric chloride from iron?

12. Give the name and formula of an ore of (a) zinc, (b) iron, and (c) aluminium.