

# AN ROINN OIDEACHAIS

(Department of Education).

## BRAINNSE AN MHEADHON-OIDEACHAIS

(Secondary Education Branch).

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INTERMEDIATE CERTIFICATE EXAMINATION, 1941.

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### SCIENCE (Syllabus B).

THURSDAY, 19th JUNE. AFTERNOON, 4 TO 6 P.M.

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[Not more than *six* questions are to be attempted, of which *three* must be taken from Section I, and *three* from Section II. Illustrate your answers wherever possible. All questions are of equal value.]

#### Section I.

1. Distinguish between an element and a compound. Give three examples of each.

Of what elements is calcium carbonate composed? What gas can be prepared from calcium carbonate? What are the properties of this gas?

2. How may hydrogen be prepared in the laboratory? Describe an experiment to show that water is formed when hydrogen is burned in the air. Sketch the apparatus used. State any precautions that must be taken.

3. Describe how hydrochloric acid may be prepared. How may hydrochloric acid be used to obtain a sample of common salt?

4. Define specific gravity.

With the aid of an ungraduated spiral spring, a metre stick and a suitable known weight explain how you would find (i) the weight, (ii) the specific gravity, of a small stone.

5. What do you understand by the term "dew point"? Describe any method for finding the dew point.

6. Name the three processes by which heat may be transferred. Describe, with the aid of a sketch, an experiment that would illustrate a central heating system. How are the three processes involved in the system and in its use?

## Section II.

7. What are the effects of (a) germinating seeds, (b) green plants on the air ?

How would these effects be influenced by the *presence* or *absence* of sunlight ?

Describe experiments to illustrate your answer in the case of (a) or (b).

8. What are the different parts of a flower ? What is the function of each part ?

Show by diagrams how these parts are arranged in the flower of the primrose.

9. Of what use to the plant are the following :—root-hairs, tendrils, stomata, cotyledons, vascular bundles ?

10. Describe, with the aid of a sketch, the structure and function of the back bone.

11. Give in tabular form the difference between fresh and expired air.

Of what importance is an adequate supply of fresh air for the preservation of health ? Suggest other factors of importance in this connection.

12. Describe, with sketches, the appearance of the liver and its situation in the human body. What are the functions of the liver ?