

AN ROINN OIDEACHAIS
(Department of Education).

BRAINSE AN MHEÁN-OIDEACHAIS
(Secondary Education Branch).

INTERMEDIATE CERTIFICATE EXAMINATION, 1933.

SCIENCE (Syllabus D).

MONDAY, 19th JUNE.—AFTERNOON, 4 TO 6 P.M.

[Not more than *six* questions to be attempted. All the questions are of equal value. Illustrate your answers wherever possible.]

1. What is the difference between washing soda and baking soda? Explain the action of these substances when used for domestic purposes.

2. Make a detailed sketch of a clinical thermometer and explain how it is used.

3. What is a barometer? What is meant by "the height of the barometer"? Why does this quantity vary? Explain why mercury is used in a barometer in preference to other liquids.

4. Define—metre : pound : gallon : yard.

How would you convert grams per cubic centimetre into kilograms per litre?

5. A person arriving late for breakfast finds her tea, toast and rasher cold. Describe how the heat was gained and lost by each of the three with particular reference to the parts played by conduction, convection and radiation.

6. Give concise answers to the following questions:—

(1) Why is the temperature in a greenhouse usually higher than that of the surrounding air?

(2) What principle is involved in the construction of a thermos flask?

(3) On what general principle is the hot water system of a house based?

7. What are the functions of the liver : skin : kidneys : lungs : saliva?

8. What is density? Describe two methods by which you would find the relative density of each of the following:—

(a) An irregular piece of coal.

(b) Turpentine.

9. How would you show that nitrogen, oxygen, carbon dioxide, and water vapour are constituents of atmospheric air?

10. Describe any experiment you would perform to show that

(a) a solid,

(b) a liquid,

(c) a gas

expands on heating.

11. Write short notes on the functions of blood and the changes it undergoes during circulation.

12. Describe any method of preparing hydrogen. How does this gas differ from carbon dioxide?