

AN ROINN OIDEACHAIS

(Department of Education).

BRAINNSE AN MHEADHON-OIDEACHAIS

(Secondary Education Branch).

INTERMEDIATE CERTIFICATE EXAMINATION, 1936.

FULL COURSE

SCIENCE (Syllabus B).

FRIDAY, 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. Describe an experiment you would perform to demonstrate the truth of the principle of the lever. A lever of uniform section weighs 4 lb. and a weight of 9 lb. hangs from one end. It is found that the lever balances on a knife edge at 8 inches from the end at which the weight hangs. What is the length of the lever?

2. What do you understand by the terms (a) volume, (b) weight, (c) density of a substance?

Describe in detail how you would find (1) the volume, (2) the density of some sand.

3. What do you understand by the "dew point"? Describe how the dew point may be determined by experiment in the laboratory.

4. How would you show by experiment that iron in rusting uses up part of the air? How is the rusting of metals usually prevented? How do you explain the rusting of iron under water?

5. What is (a) an element, (b) a compound? How would you verify experimentally that carbon dioxide gas is a compound?

6. Describe an experiment you would conduct to obtain a sample of pure water from water to which salt had been added. Sketch the apparatus you would use. How would you proceed to obtain a sample of the salt?

7. Describe an experiment you have seen performed to show the effect of germinating seeds on air. What may be learned from the experiment?

8. Describe briefly the life history of (a) an annual plant, (b) a biennial plant. Compare the difficulty of exterminating annual, biennial and perennial plants.

9. What are the functions of the following parts of plants:— (a) cotyledon, (b) tendril, (c) bud, (d) petal, (e) stomata? Sketch any one of the above parts and name the plant you select.

10. Why do animals breathe? Explain your answer, and state briefly what happens to the air during respiration. How is it that the breathing of animals is more vigorous than that of plants?

11. Describe appearance of the liver and its situation in the body, make sketches to help your descriptions. What are the functions of the liver?

12. State the principal points of difference between plants and animals with respect to (a) nutrition, (b) effect on surrounding air.