

# AN ROINN OIDEACHAIS

(Department of Education).

## BRAINSE AN MHEÁN-OIDEACHAIS

(Secondary Education Branch).

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### INTERMEDIATE CERTIFICATE EXAMINATION, 1928.

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#### SCIENCE (Syllabus B).

TUESDAY, 19th JUNE.—MORNING, 10 A.M. TO 12 NOON.

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[Not more than *six* questions to be attempted.]

Illustrate your answers wherever possible.

All questions are of equal value.

1. Describe briefly the changes which water undergoes from the time it leaves the surface of a lake until it returns to the earth again as rain. State clearly the reasons for each change.

2. In making a chain survey of a four sided field the measurements made are :—AB 300, BC 250, CD 170, DA 266 links: diagonal AC 320 links. The line BC is to the right. Make a drawing to scale of this field and calculate its area in acres. Ten square chains equal one acre.

3. Explain the fact that ships made of iron can float. Why does a balloon ascend? Indicate the forces acting on the balloon.

4. Describe experiments to illustrate (a) conduction, (b) convection, (c) radiation of heat.

5. Describe, by the aid of labelled sketches, the arrangement of the various parts of any flower you have studied and the general structure of the stamens and pistil. State the function of each part of the flower.

6. What soil conditions are most favourable for the growth of a plant such as wheat or potatoes? Give reasons. State the effect of frost on a soil and explain how this benefits the succeeding crops.

7. What takes place when magnesium burns in air? Describe the experiments you would perform to verify your statement.

8. If you were provided with a mixture of chalk and powdered washing soda how would you procure a pure, dry specimen of each? How could you determine the percentage of chalk in the mixture?

9. State exactly what you would observe on gradually adding (a) dilute hydrochloric acid, (b) water to pure limestone and to quicklime. Explain, as far as you can, the changes which take place.

10. Describe any instrument for the determination of "dew point" with which you are familiar and explain how it works. What does the term "rainfall of one inch" mean?