

AN ROINN OIDEACHAIS  
(Department of Education).

BRAINNSE AN MHEADHON-OIDEACHAIS  
(Secondary Education Branch).

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INTERMEDIATE CERTIFICATE EXAMINATION, 1938.

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LOWER COURSE.

SCIENCE (Syllabus B).

MONDAY, 20th JUNE.—AFTERNOON, 4 TO 6 P.M.

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

1. Describe and sketch an apparatus you have seen used to measure the pressure of the atmosphere. Explain how and why the reading of this instrument would vary if you brought it to the top of a mountain.

2. What daily observations are recorded on a weather chart? Explain how these observations help one in forecasting weather.

3. Explain, with sketch, how the density of a liquid is determined by means of a U tube. Determine the weight of a disc of zinc given; radius of disc=5 cms.; density of zinc=7.2 grms. per c.c.; thickness of disc=0.7 m.ms.

4. How may Carbon Dioxide be prepared in the laboratory? How can it be proved that this gas is heavier than air? What evidence is there that  $\text{CO}_2$  is present in respired air?

5. Describe experiments you have seen performed to determine the conditions under which rusting occurs. What are those conditions?

6. Draw up a table that will indicate the differences between a physical and a chemical change. Sugar is heated in a test tube—is the change which occurs physical or chemical? Give reasons for your answer.

7. What are the conditions necessary for seeds to germinate? Describe experiments that could be performed to prove your answer.

8. Why, do you think, do insects visit plants? How is plant life benefited by the visits of insects? Distinguish between Pollination and Fertilisation.

9. Describe an experiment to prove that a plant absorbs liquid through its roots. What are the functions of the stem and its branches?

10. How would you distinguish between venous bleeding and arterial bleeding? Explain any differences that you indicate.

11. Into what parts is the body cavity divided by the diaphragm? Explain briefly the part played in the digestion of food by:—

(a) the tongue,

(b) the teeth,

(c) the pancreas,

(d) the small intestine.

12. Name the important constituents of a mixed diet and outline the function in the body of each constituent. Do you know any foodstuff which contains all the constituents?