

AN ROINN OIDEACHAIS.
(Department of Education).

BRAINNSE AN MHEAN-OIDEACHAIS
(Secondary Education Branch).

INTERMEDIATE CERTIFICATE EXAMINATION, 1934.

FULL COURSE.

SCIENCE (Syllabus D).

FRIDAY, 15th 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.]

Q. 1. How would you separate the constituents of a mixture of water, common salt, and sand?

Q. 2. Why does milk turn sour? What change does the milk undergo when souring occurs? By what means would you (a) control, (b) retard, (c) prevent this action?

Q. 3. Describe the changes which food undergoes during its passage through the alimentary canal.

Q. 4. Explain why a body appears to lose weight when immersed in a liquid. A piece of metal weighs 50 gm. in air, 44.20 gm. in water and 45.35 gm. in another liquid. What is the specific gravity of the metal and of the liquid?

Q. 5. Describe and explain the changes which take place in the following experiments:—

- (1) phosphorus is ignited over water under a bell jar.
- (2) carbon dioxide is passed into limewater.
- (3) sugar is strongly heated in a test tube.

Q. 6. What do you understand by the 'boiling point' of water? How would you show that it is influenced by (a) atmospheric pressure and (b) dissolved solids?

Q. 7. Give an account of the mechanism by which the act of respiration is performed. Why is it desirable to practise deep breathing?

Q. 8. Make a sketch of a spring balance. Are the graduations equally spaced? Give the reason for your answer. How would you find the weight of an object with a spring balance if the scale readings were not legible?

Q. 9. What physical changes take place when (a) ice melts, (b) moisture forms on the inside of a window pane, (c) boiling water is poured into a thick glass tumbler? Give reasons for your answers.

Q. 10. Make a detailed sketch of any lactometer with which you are familiar. What information respecting the quality of the fluid is obtained from a lactometer reading?

Q. 11. Explain how (a) the kidneys, (b) the lungs and (c) the skin function in clearing waste matter from the body. Make a sketch to shew the structure of a kidney.

Q. 12. What is temperature? How would you show experimentally that evaporation lowers the temperature? A Fahrenheit thermometer registers 41° ; what is the equivalent of this on the centigrade scale?