

AN ROINN OIDEACHAIS
(Department of Education).

BRAINNSE AN MHEADHON-OIDEACHAIS
(Secondary Education Branch).

INTERMEDIATE CERTIFICATE EXAMINATION, 1937.

LOWER COURSE.

SCIENCE (Syllabus D).

FRIDAY, 18th 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. Good palatable tea cannot be made near the top of a very high mountain. Account for this fact and describe an experiment to support your answer.

2. State briefly what you know about the effects of heat on solid, liquid and gaseous substances. Give evidence from experiments or common examples.

3. When a lighted candle is held (a) at the top, (b) at the bottom, (c) near the middle, of the partly closed door of a warm room, certain changes are noticeable in the candle flame. Specify these changes and their causes, and indicate to what useful purpose the knowledge thus obtained may be put.

4. Given a mixture of alcohol and water how could pure samples of each be obtained. What tests should be applied to identify the water?

5. Explain fully the heat regulation system of the body.

6. What do you understand by Density? From the following figures calculate the density of brine:

Weight of stopper in air	=	18.24 gm.
“ “ “ “ water	=	11.52 “
“ “ “ “ brine	=	9.22 “

7. Explain the following :—

- (a) Why is it unwise to leave the lid off a box of boot polish, and to put a closed tin of metal polish near the fire,
- (b) Why a chimney, when put on a lighted oil lamp, makes the flame brighter,
- (c) Why objects often appear to quiver when looked at across a hot smokeless stove or fire,
- (d) Why it is advisable to make a hole in a tin of baked beans before the tin is warmed in a pan of water.

8. What are the characteristics that distinguish acid from alkaline substances? What happens if they are mixed? Name two acid and two alkaline substances used about a house and explain the use of one of each class.

9. Compare the working of (a) the heart, (b) the lungs, (c) the blood while you are playing a strenuous game, with their working while you are sitting in class. Explain the cause of change in each case.

10. How could a 20 per cent. solution of salt water be made from 15 gms. of salt and a supply of water? 1 c.c. of water weighs 1 gm. All figures in work to be shown.

11. Make sketches to show the arrangement of the bones in the human (a) arm, (b) leg. Name each bone.

12. State what you know of the chemical composition of water.

Describe any experiments you have seen that support your statement.