

AN ROINN OIDEACHAIS.

(Department of Education).

BRAINNSE AN MHEADHON-OIDEACHAIS

(Secondary Education Branch).

INTERMEDIATE CERTIFICATE EXAMINATION, 1939.

FULL COURSE.

SCIENCE (Syllabus D).

FRIDAY, 16th 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. How would you determine the volume of :—
 - (a) a rectangular block of wood,
 - (b) a stone about the size of your fist,
 - (c) a small pendulum bob,
 - (d) one of a number of grains of shot of equal size ?
2. Given a length of rubber tubing, tell how you could use it to empty a tank of water. Explain the principle on which the operation works and illustrate by means of a sketch.
3. Explain what occurs when iron rusts. Describe the experiments you would perform to find under what conditions rusting occurs. Name three methods by which iron is prevented from rusting.
4. Why do loosely woven clothes feel warmer than tightly woven ones ? Give an experiment to illustrate the principle underlying your answer.
5. Given hydrochloric acid and solutions of caustic soda and litmus, describe in detail how you would obtain (a) a colourless neutral solution (b) a specimen of common salt.
6. Give the functions of the following :—red-blood corpuscles ; saliva ; nerves ; pancreas ; eyelash.
7. Describe briefly two experiments to demonstrate latent heat. Give three examples of latent heat met with in everyday life.

8. Why does a body appear to lose weight when immersed in a liquid? A body weighs 46 gm. in air, 39.14 gm. in water and 41.26 gm. in another liquid. What is the specific Gravity of (a) the body (b) the liquid? (all calculations must be shown).

9. What are the properties of acids and alkalies? Name three acids and three alkalies commonly found in the kitchen.

10. Describe what happens to some air from the time when you inhale it to the time you exhale it.

11. Describe in detail how you would prepare a sample of soap in the laboratory.

12. What is the Normal Temperature of the human body? What is the source of heat in the body? Explain in detail how the body temperature is kept normal when a person feels (a) very warm, (b) very cold.