

AN ROINN OIDEACHAIS

(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1948.

SCIENCE Syllabus (D).

WEDNESDAY, 23rd JUNE.—MORNING, 10 TO 12.

[Not more than six questions to be attempted, of which three must be taken from Section I, and three from Section II. Illustrate your answers wherever possible. All questions are of equal value.]

SECTION I.

1. Describe how you would make each of the following measurements and mention the precautions you would take :—

- (a) the internal diameter of a hollow cylinder,
- (b) the circumference of a cylinder,
- (c) the volume of a large apple,
- (d) the area of a plant leaf.

2. Describe, with the aid of a diagram, a hydrometer and tell how you would use it to measure the density of a given liquid.

State the law on which the working of a hydrometer is based and tell how you would test the law in the laboratory.

3. Describe how you would construct a simple barometer. Explain how it works and how you would read it.

Explain, also, what would be observed (a) if a small hole were made in the top of the tube, (b) if the barometer were taken to the top of a high mountain.

4. Explain each of the following :—

- (a) why the air feels colder when a thaw sets in,
- (b) why the air feels warmer immediately after a downpour,
- (c) why wet clothes dry more readily when spread out,
- (d) why it is dangerous for a person to wear damp clothing.

Describe a laboratory experiment in support of your answer to (a) or (c).

5. Explain carefully how heat travels from its source to the foodstuff in each of the following cases:—

- (a) cooking potatoes in boiling water,
- (b) roasting meat in an oven,
- (c) cooking fish in a steamer.

Explain the advantages and disadvantages of steaming as a method of cooking.

SECTION II.

6. Explain the physical and chemical changes in the air of a room which result from the presence of people in it.

Describe, briefly, laboratory experiments in support of your answer.

7. How would you show that river water contains (a) dissolved air, (b) dissolved minerals?

Write notes on the importance of the dissolved air and on the inconvenience caused by the dissolved minerals.

8. Describe with the aid of a diagram how you would burn phosphorus in an enclosed vessel of air, and tell how you would compare the volumes of the original and residual air.

State and explain what would be observed if a candle were used instead of phosphorus in this experiment.

9. Draw a diagram of the thorax to show the bones and muscles of its walls. Explain the functions of the muscles.

Name the organs in the thorax and show on your diagram the position of each.

10. Tell how you would recognise each of the following and describe, with diagrams, the first-aid treatment you would give in the case of any two of them:—

- (a) a compound fracture of the shin,
- (b) a simple fracture of the clavicle,
- (c) a simple fracture of the ribs.