

AN ROINN OIDEACHAIS

(Department of Education).

BRAINSE AN MHEÁN-OIDEACHAIS

(Secondary Education Branch).

INTERMEDIATE CERTIFICATE EXAMINATION, 1927.

SCIENCE (Syllabus D).

WEDNESDAY, 22nd JUNE.—MORNING, 10 A.M. to 12 NOON.

[Not more than *six* questions may be attempted.]

1. Show by means of a diagram the forces exerted when using a pair of scissors.

If the force exerted by the thumb at a distance of 2" from the rivet is 2lbs. weight, find the pressure of the blades on the material at distances of 1", 2", 3" and 4" from the rivet.

2. Describe experiments to demonstrate each of the following facts:—

- (a) air takes up space,
- (b) air exerts pressure,
- (c) air exerts pressure equally in all directions,
- (d) air has weight.

3. Describe an experiment showing the presence of dissolved air in water. Explain clearly why it is wrong to leave steel knives wet after use.

4. Show by means of a diagram a section of a steam cooker from top to bottom. What advantage does the steam cooker possess as compared with an ordinary saucepan? Explain why cooking with steam takes longer than with boiling water.

5. State the effects on sugar, common salt, and bread soda, of

- (a) heat,
- (b) hot and cold water,
- (c) dilute Hydrochloric Acid.

6. Explain the action of a siphon of "soda water." How is "soda water" made?

Sketch the apparatus you would use to collect a sample of the gas contained in "soda water," and describe the chief properties of the gas.

7. Describe what takes place when a fire burns in an open grate. Why is a chimney essential? Explain the use of dampers in a kitchen range.

8. What changes occur during the digestion of food? Why should food be masticated thoroughly?

9. Describe exactly how you would treat the following cases :—

(a) bleeding at the nose,

(b) a sprained wrist,

(c) a scalded forearm.

10. State the temperature of the human body in health. How is this temperature maintained and regulated? Explain briefly the functions of the skin in regulating the temperature of the body.