AN ROINN OIDEACHAIS

(Department of Education).

BRAINSE AN MHEÁN-OIDEACHAIS

(Secondary Education Branch).

LEAVING CERTIFICATE EXAMINATION, 1926.

PASS

PHYSICS.

WEDNESDAY, 23rd JUNE—MORNING, 10 A.M. TO 12 NOON.

[Not more than *six* questions are to be attempted.]

1. Draw diagrams showing how real and virtual images are obtained with a convex lens. In experimental work what objects are generally used, and how may the position of each type of image be found ?

2. A plane mirror is placed upright on a horizontal sheet of paper on which a small ink dot has been made in front of the mirror. Draw a diagram which will show why you see an image of the dot behind the mirror. What would you do to find experimentally the exact position of the image ?

3. A circular disc of card-board may be made to produce shadows :—

(*a*) circular and the same size as itself ;

(*b*) circular and larger than itself ;

(*c*) not circular ;

(*d*) with clear-cut edge ;

(*e*) with blurred edge.

Make diagrams illustrating each case and add a few words of explanation where necessary.

4. What do you understand by :—

(*a*) moment of a force ;

(*b*) triangle of forces ;

(*c*) coefficient of friction.

Illustrate your definitions by examples, giving in each case the values of the quantities involved.

5. Write a brief account of what you know of Momentum, referring to any experimental work you have done or seen.

6. Explain very clearly and fully what you understand by "g."

A mass of 10 lbs. slides on a horizontal table under the action of a force of 2 ozs. What measurements would you take to determine its acceleration ? How would you check your result ?

7. Describe any form of condenser with which you are acquainted. What is meant by its "capacity" and how may the capacity be altered ?

8. Describe any form of voltaic cell commonly used in the laboratory. What is "polarisation" and how is it prevented in the cell you describe ?

9. Give the names of some good and some poor metallic conductors. What practical use is made of each ?

Two wires, one of 5 ohms and one of 4 ohms resistance are joined in parallel and inserted in a circuit through which a current of 2 amperes is then passed. What is the current in each wire ?

10. Give instances of the heating effects of electrical currents.

How would you show that there is a definite relation between the current passing in a given wire and the heat produced ?

If a current of 2 amperes produces 100 calories per minute in passing through a wire, how many calories per minute would be produced by a current of 10 amperes in a wire of the same length and twice the diameter.