AN ROINN OIDEACHAIS
(Department of Education).

BRAINSE AN MHEÁN-OIDEACHAIS
(Secondary Education Branch).

LEAVING CERTIFICATE EXAMINATION, 1928.

PASS

PHYSICS.

WEDNESDAY, 20th JUNE.—MORNING, 10 A.M. TO 12 NOON.

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

Sketches or diagrams are essential in answering questions marked *.

All questions are of equal value.

1.* What is a shadow? How would you obtain from a cube, a square shadow with clear cut edges each three times the length of the edge of the cube? Why, in a room having two lights, are some shadows darker than others?

2.* What is meant by the index of refraction of a substance? Describe clearly and fully how you would find this index for water. Emphasise the precautions necessary to obtain an accurate result.

3.* Show how two lenses may be arranged to form a simple telescope. Indicate by tracing the path of a few rays how the image is seen by the eye.

4.* What is the "coefficient of friction"? When a body is just sliding down an inclined plane show that this coefficient for the body and plane may be obtained by finding the tangent of the angle of inclination.

5. Describe what you understand by "uniform acceleration" giving at least two numerical illustrations. If a body weighing one ton is acted on by a force of one hundredweight for three seconds what will be its velocity at the end of the time?

6. Explain without formal definitions the meaning of :—(*a*) Momentum, (*b*) Work, (*c*) Power. Illustrate how the terms may be applied practically (e.g. in the case of a locomotive pulling a train) and state the units in which they are measured.

7.* Describe the gold leaf electroscope and state two purposes for which it may be used.

8. Mention some useful purposes to which permanent magnets may be applied. From what metal should they be made? How would you make one?

9.* Explain fully why an electric bell rings when a button is pressed.

10.* What do you understand by electrical resistance? Describe a method by which a resistance of about 7 ohms may be exactly measured.