AN ROINN OIDEACHAIS
(Department of Education).

BRAINSE AN MHEÁN-OIDEACHAIS
(Secondary Education Branch).

LEAVING CERTIFICATE EXAMINATION, 1933.

PASS.

PHYSICS.

THURSDAY, 22nd JUNE.—Afternoon, 1.30 to 3.30 p.m.

Not more than *six* questions may be attempted.

All questions are of equal value.

1. Describe fully, using sketches, how you would compare the illuminating powers of two sources of light.

2. Explain the terms real image, and virtual image. Draw diagrams showing how (*a*) a real enlarged image, (*b*) a real diminished image, and (*c*) a virtual image can be formed by a concave mirror.

3. What is meant by the term spectrum? Describe how you would arrange a source of light, a slit, lenses and a prism, to give a pure spectrum. Write a short note on the different types of spectrum.

4. Explain the term acceleration. How would you determine the acceleration due to gravity? What value would you expect to obtain?

5. State the principle of the conservation of energy. Define potential energy and kinetic energy. Give four examples illustrating the principle of the conservation of energy.

6. Explain the terms force, work, and power. Calculate the work done in lifting a body weighing two tons a vertical distance of 100 feet. In what way would this operation be influenced by the horse-power of the machine employed?

7. Describe the gold-leaf electroscope and explain how it can be used to detect an electric charge and to ascertain the sign of the charge.

8. State the laws of electrolysis. Explain what is meant by the electro-chemical equivalent of a substance. Describe how you would determine the electro-chemical equivalent of copper.

9. State Ohm's Law. Four similar cells connected in series with a resistance of 12 ohms give a current of 0.3 ampere. If the internal resistance of each cell is 1·5 ohm, find the E.M.F. of each cell.

10. Describe the construction and action of an electric bell. Illustrate your answer by a sketch.