

**AN ROINN OIDEACHAIS**  
(Department of Education).

**BRAINSE AN MHEÁN-OIDEACHAIS**  
(Secondary Education Branch).

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**LEAVING CERTIFICATE EXAMINATION, 1928.**

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**HONOURS**  
**PHYSICS.**

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

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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.\* In the study of light what do you understand by (a) "the law of inverse squares." (b) "candle-power"? In using a grease spot photometer why is the grease spot sometimes lighter and sometimes darker than the rest of the paper?

2.\* What do you understand by "the focus" of a concave lens. Show how this lens is used in an opera glass (Galilean telescope). How and why must the lenses in this instrument be moved relative to one another in transferring the gaze from a remote to a neighbouring object.

3.\* Describe some method which has been used to measure the velocity of light. What is the connection between the velocity of light in a substance and its index of refraction?

4. How would you measure :—

- (a) a force producing a strain,
- (b) a force producing an acceleration,
- (c) an impulsive force?

5.\* Describe and explain some experiment you have performed dealing with uniform acceleration. What were the probable sources of error involved?

6. Write a short note on "The conversion of mechanical energy into heat" giving some historical and practical references.

7.\* What do you understand by an electrical field of force? Give examples of a uniform field and a field varying in intensity from point to point. How may the direction of the force at any point of a field be determined?

8.\* How would you show that like magnet poles repel one another? Sketch the horizontal field due to two bar magnets, each about six inches long, placed horizontally with their axes in a straight line running north and south and their north poles about three inches apart.

9.\* What is a potentiometer. Explain clearly how it may be used to compare Electro Motive Forces.

10.\* Describe briefly how a dynamo works explaining very clearly the function of the commutator. Mention some purposes for which the machine is used.