

AN ROINN OIDEACHAIS.

(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1955.

SCIENCE (Syllabus E).

WEDNESDAY, 15th JUNE—EVENING, 3 TO 5.

[Not more than *six* questions to be attempted. Illustrate your answers wherever possible.]

1. State the composition of the atmosphere and give a brief account of the properties of its principal constituents.

Explain how it happens that the pressure of the atmosphere varies from time to time.

[66 marks.]

2. What is a lever? State the law of the lever and describe an experiment to demonstrate it.

Give three different examples of lever action in everyday life and in each case show by means of a diagram (a) the position of the fulcrum, (b) the position and direction of each of the forces acting on the lever.

[66 marks.]

3. Give an account of three different ways in which heat may be produced.

Describe laboratory experiments, one in each case, to demonstrate the physical effect of heat on (a) a solid, (b) a gas. Give two everyday examples to illustrate the effect in each case.

[66 marks.]

4. What does a thermometer measure?

Describe a mercury thermometer and show how it may be graduated in accordance with the centigrade scale.

Discuss the advantages and disadvantages of (a) a mercury thermometer and (b) an alcohol thermometer.

[66 marks.]

5. Describe a method for measuring the velocity of light.

State the velocity of light.

[66 marks.]

6. Describe the magnetic compass and show how the points on it are named.

Give a brief account of terrestrial magnetism and explain how the magnetic compass is used in navigation.

[66 marks.]

7. What is refraction of light? Describe a laboratory experiment which demonstrates it.

Give an account of three examples of refraction from everyday life and in each case explain, by means of a diagram, how the refraction occurs.

[67 marks.]

8. What is the difference between alternating electric current and direct electric current? Which of these is supplied from the Shannon Scheme?

Describe a simple form of dynamo which produces direct current and explain how it works.

[67 marks.]

9. Using a clearly-labelled diagram, describe any cell which produces an electric current.

Give an account of the reactions which take place when current is being drawn from the cell and describe what happens (if anything) when the cell is allowed to stand idle for a long period.

[67 marks.]

10. Describe, with the aid of a diagram, a simple form of telephone circuit and explain the working of its various parts.

[67 marks.]