

# AN ROINN OIDEACHAIS

(Department of Education).

## INTERMEDIATE CERTIFICATE EXAMINATION, 1949.

### SCIENCE (Syllabus B).

FRIDAY, 17th JUNE—MORNING 10 TO 12.

[Not more than *six* questions are to be attempted, of which three must be taken from Section I and *three* from Section II. Illustrate your answers wherever possible. All questions are of equal value.]

#### SECTION I.

1. Describe experiments, one in each case, (i) to show that air expands when heated, (ii) to show that the air contains water vapour.

What is meant by saying that the air is saturated with water vapour, and what is meant by dew point?

2. What do you understand by (a) a lever, (b) the principle of moments?

Describe how you would use the principle of moments—

(i) to determine the weight of a small stone,

(ii) to determine the weight of the lever itself.

Mention an example of a lever from the human body.

3. What do you understand by specific gravity?

Describe fully how you would determine the specific gravity of a liquid by using a test tube and some lead shot.

Name and describe an instrument which is used to measure the specific gravity of a liquid.

4. Mention the properties of sulphuric acid and tabulate the purposes for which you have used it in the laboratory. Describe fully with the aid of a diagram one experiment in which you used sulphuric acid.

5. Describe with the aid of a diagram an experiment to investigate what happens when coal is heated in the absence of air.

Name two of the products obtained, and give one use of each of these products in everyday life.

## SECTION II.

6. Name (a) a monocotyledonous plant, (b) a dicotyledonous plant, and show by means of diagrams in what respects their leaves differ from one another.

State the functions of the green leaf and describe an experiment to illustrate any of these functions.

7. Describe with the aid of a diagram the appearance of a three year old twig of a horse chestnut tree in winter time.

How would you ascertain the age of the twig (a) by examining it externally, (b) by examining a cross-section of it?

8. What conditions are necessary for the germination of seeds?

Describe with the aid of diagrams the stages in the growth of a bean seedling from the time the seed is sown till the young plant appears above the ground.

What happens when healthy seedlings are deprived of light? Give reasons for your answer.

9. Indicate by means of a diagram the appearance of the lungs, and explain how they operate.

10. What ill-effects may be caused by overcrowding of living rooms? Give reasons for your answer.

Explain how the presence of an open hearth fire might help to minimise these ill-effects.