

# AN ROINN OIDEACHAIS

(Department of Education).

---

INTERMEDIATE CERTIFICATE EXAMINATION, 1958.

---

## SCIENCE (Syllabus B).

---

TUESDAY, 17th JUNE.—EVENING, 3 TO 5.30.

---

[Not more than *six* questions are to be attempted. *Two* questions, at least, must be answered from each Section. Illustrate your answers wherever possible.]

### SECTION I.

1. Describe, with the aid of diagrams, how you would show experimentally (i) that air has weight, (ii) that air expands on heating, (iii) that the atmosphere exerts pressure.

Name and describe an apparatus used for measuring the pressure of the atmosphere.

[66 marks.]

2. Explain the terms (i) evaporation, (ii) distillation, (iii) condensation, and give one example of each.

What are clouds and how are they formed?

Describe the conditions under which (i) fog, (ii) dew, occurs.

[66 marks.]

3. A piece of metal weighs 77 gms. in air and 67 gms. in water. Calculate the specific gravity of the metal.

The same piece of metal weighs 66 gms. in brine. Calculate the specific gravity of brine.

Describe, with the aid of a diagram, a direct-reading hydrometer and explain how it is used.

[66 marks.]

4. Describe, with the aid of a diagram, how you would show that air contains approximately one-fifth of its volume of oxygen.

Give an account of how you would prepare oxygen and mention its principal properties.

[67 marks.]

5. What do you understand by (i) a mixture, (ii) a compound, (iii) a chemical change, (iv) a physical change? Give an example of each.

Describe how you would separate (a) common salt from a mixture of sand and common salt, (b) sal ammoniac from a mixture of common salt and sal ammoniac.

[67 marks.]

## SECTION II.

6. What conditions are necessary for the germination of seeds? Describe experiments in support of your answer.

Describe, also, with the aid of diagrams, four important stages in the germination of the seed of the broad bean.

[66 marks.]

7. Describe simple experiments, one in each case, to show (a) that green plants absorb water through their roots, (b) that green plants transpire, (c) that photosynthesis will not take place in a leaf in the absence of sunlight.

[66 marks.]

8. Describe, with the aid of a labelled diagram, a longitudinal section of the flower of the primrose, or of the flower of any other named common plant.

State the functions of the various parts shown in the diagram.

[66 marks.]

9. Draw a rough sketch of the skeleton. Show and name the bones of (i) the right arm, or the right leg, (ii) the walls of the chest.

Name four important body organs that are protected by the bony structure and indicate their position in the body.

[67 marks.]

10. What are the functions of the skin? Discuss the importance of (i) keeping the skin clean, (ii) suitable bodily exercise.

What precautions should be taken with regard to clothing (a) during, (b) after, strenuous bodily exercise? Give reasons for your answer.

[67 marks.]