

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

**BRAINNSE AN MHEADHON-OIDEACHAIS**  
(Secondary Education Branch).

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**INTERMEDIATE CERTIFICATE EXAMINATION, 1935.**

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**FULL COURSE.**

**SCIENCE (Syllabus D).**

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*MONDAY, 17th JUNE.*—AFTERNOON, 4 TO 6 P.M.

[Not more than *six* questions to be attempted. All the questions are of equal value. Illustrate your answers wherever possible.]

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1. How do you account for the formation of the following substances :—

- (a) "fur" on the inside of a kettle ;
- (b) rust on a steel range ;
- (c) verdigris on a copper pipe ?

2. What do you understand by specific gravity ?

An empty specific gravity bottle weighs 15.02 gm. Filled with water it weighs 79.65 gm., and filled with another liquid its weight is 66.45 gm. What is the specific gravity of the liquid ?

3. Classify the movable joints of the body according to the kind of movement they allow and give one example of each kind of movement.

4. A block of ice weighing about 50 grams is put into a saucepan over a gas flame. Describe and explain the changes of state and temperature which take place up to the time the saucepan becomes empty.

5. Air is passed over heated copper in a glass tube and after some time hydrogen gas is passed through the tube heated as before.

State the chemical changes that take place in this experiment and write down the properties of the substance formed.

6. Describe any method by which you would find the weight of a litre of air. Does the weight vary with the atmospheric condition ?

7. Give the function and situation in the body of each of the following: salivary glands; gall bladder; pancreas; white blood corpuscles; diaphragm.

8. Describe any convenient method of collecting some of the air dissolved in tap water. How do you account for the difference between this air and atmospheric air?

9. What are the differences between arteries and veins and between arterial and venous blood?

10. Describe the changes that take place when the following substances are heated in air: magnesium; mercuric oxide (red precipitate); chalk; lead oxide (red lead); charcoal.

11. Why does a body float or sink?

A piece of metal of specific gravity 8.62 weighs 50 gm. in air. What will be its weight in water?

12. What is a thermometer? Why is mercury a suitable liquid to use in a thermometer? Explain why the mercury is placed in a tube of very fine bore, with a bulb at one end.