

# AN ROINN OIDEACHAIS

(Department of Education)

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## INTERMEDIATE CERTIFICATE EXAMINATION, 1960.

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### SCIENCE (Syllabus D).

WEDNESDAY, 15th JUNE.—EVENING, 3 TO 5.30.

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

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#### SECTION I.

1. Describe two experiments which show that the atmosphere exerts pressure.

Give an account of a mercury barometer and explain how it works.

[66 marks.]

2. Describe fully how you would measure the density (i) of a given liquid, (ii) of a piece of metal.

An object, of specific gravity 1.5, has a volume of 10 c.c. Calculate (a) its weight, (b) its apparent weight in water.

[66 marks.]

3. Give an account of experiments, one in each case, to show (i) that tap-water contains dissolved air, (ii) the effect of dissolved solids on the boiling-point of water, (iii) the effect of reduced pressure on the boiling-point of water, (iv) the difference between hard and soft water.

[66 marks.]

4. Explain what you understand by (i) conduction, (ii) convection, (iii) radiation, of heat, and give two examples in each case.

Give an account of an experiment which shows that evaporation is accompanied by a cooling effect.

[67 marks.]

5. (a) Explain the terms (i) latent heat, (ii) specific heat.

(b) Describe experiments, one in each case, to show the effect of heat on (i) a solid, (ii) a liquid, (iii) a gas.

[67 marks.]

## SECTION II.

6. Describe with the aid of a sketch, an experiment in which a piece of phosphorus is burned in an enclosed volume of air. What deductions may be drawn from this experiment ?

Name the two principal gases present in the atmosphere and outline their properties.

[66 marks.]

7. Give an account of the preparation and properties of carbon dioxide.

Describe an experiment to show that breathed air contains more carbon dioxide than ordinary air. Why is this so ?

[66 marks.]

8. What is (i) an acid, (ii) a salt ?

Describe how you would prepare a solution of hydrochloric acid and give an account of its properties.

Show how you would use the hydrochloric acid solution to prepare a small quantity of common salt.

[66 marks.]

9. What are muscles ? What are their functions ?

Draw diagrams to show the chief muscles a person uses (i) in keeping the body erect, (ii) in walking. Explain the action of the muscles in each case.

[67 marks.]

10. Describe, with the aid of a labelled diagram, the alimentary canal. Give an account of the principal changes which food undergoes in the alimentary canal.

[67 marks.]