

# AN ROINN OIDEACHAIS

(Department of Education).

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## INTERMEDIATE CERTIFICATE EXAMINATION, 1948.

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### SCIENCE (Syllabus B).

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WEDNESDAY, 23rd JUNE—MORNING 10 TO 12.

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[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. Draw a diagram of the common laboratory balance and name the different parts of it. State what precautions you should take when using the balance and explain why these precautions are necessary.

2. Describe, with the aid of a diagram, the Centigrade thermometer. Why is mercury generally used in thermometers?

Compare the Centigrade and Fahrenheit scales. Find what reading on the Centigrade scale corresponds to 95°F.

3. What is meant by "density"? Describe how the density of a liquid may be determined by the principle of flotation.

A wooden cylinder, 18.2 cms. high, floats vertically in water with 12.6 cms. of its height underneath the surface. Calculate the density of wood.

4. How is nitric acid prepared in the laboratory? Mention its chief properties.

How would you distinguish nitric acid from hydrochloric acid?

5. Describe how hydrogen is prepared and collected in the laboratory. Mention its properties.

Give a brief account of an experiment to show that hydrogen is one of the constituents of water.

#### SECTION II.

6. Name any plant which blooms in the summer, and state the characteristics in its structure which enable you to identify it.

Draw a longitudinal section of the flower of the plant to show its various parts. Name the parts.

7. State the changes that take place in the air in the neighbourhood of germinating seeds. Describe experiments in support of your answer.

8. What are the functions of leaves in plant life? Describe an experiment to demonstrate one of these functions.

9. Describe with the aid of diagrams (a) the liver, and (b) the spinal column.

Mention the functions of each.

10. Describe with the aid of a diagram the structure of the skin. Explain why a person perspires more than usual during exercise and why he feels cold on resting after the exercise.

Explain, also, why the skin should be kept clean.

Section I

1. Draw a diagram of the common laboratory balance and name its different parts. In what way precautions should be taken when using the balance and explain why these precautions are necessary.

2. Describe with the aid of a diagram the Centigrade thermometer. Why is mercury generally used in thermometers? Name the Centigrade and Fahrenheit scales. Find what number on the Centigrade scale corresponds to 85°F.

3. What is meant by "density"? Describe how the density of a liquid may be determined by the principle of flotation. A wooden cylinder 12.5 cm high floats vertically in water with 10 cm of its height underneath the surface. Calculate the density of wood.

4. How is nitric acid prepared in the laboratory? Mention its chief properties. How would you distinguish nitric acid from hydrochloric acid?

5. Describe how hydrogen is prepared and collected in the laboratory. Mention its properties. Write a brief account of an experiment to show that hydrogen is one of the constituents of water.

Section II

6. Name any plant which blooms in the summer, and state the characteristics in its structure which enable you to identify it. Draw a longitudinal section of the flower of the plant to show its various parts. Name the parts.